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THE MONETARY AND BANKING SYSTEM

THE MONETARY AND BANKING SYSTEM

BY

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THE MONETARY AND BANKING SYSTEM

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To the family
Betty, Dad, Mother
Jessie, Fred, and Helen
without whose encouragement and willing sacrifices
this work would never have been completed

PREFACE

The dynamic events of the last two decades require fresh interpretations in the field of economics. Being subjected to the whipsaw action of the worst depression and of the most destructive war in history, the economic system plumbed the depths of unemployment and then reached the heights of full employment. Moreover, during the first three postwar years effective demand so greatly exceeded the available supply of goods that a sharp rise of prices took place in all countries. In all of this, monetary and banking changes played a leading role.

While monetary principles remain largely intact, the institutional setting in which they apply was importantly altered. Moreover, the varied experiences of these years provided a testing ground for generally accepted doctrine. In addition, this period witnessed the challenge of the Keynesian school to traditional methods of analysis and the application of Lord Keynes's theories to public policy in many countries. Much therefore remains to be done in developing the most fruitful theoretical approach, in refining principles, and in interpreting the rapidly moving events of this period.

The general point of view of this work is that of the monetary system as an integral part of the economy. This means that special emphasis is placed on the underlying principles governing the price system and the level of production. While the book is intended to serve mainly as a text, it should also be of practical value to executives in the fields of finance, business, and government.

One of the chief aims has been to stress the functional and operational aspects of the financial system, the relations that exist among its several parts, and its place in the entire economy. With this in mind an effort has been made to hold historical material regarding institutions, laws, and regulations to a minimum. The temptation to put down everything in encyclopedic fashion has been assiduously avoided. Nevertheless, the financial system does not operate in a vacuum. It is therefore essential to include a sufficient factual background so that the beginner may become reasonably familiar with the environment and develop a measure of perspective.

Another objective has been to integrate the fields of money and banking into a unified whole, thus breaking away from their traditional

division into two separate compartments. This is a more realistic approach since it stresses the interwoven pattern of the entire subject; it also has the merit of avoiding needless repetition.

A serious attempt has been made to avoid the prevalent habit of presenting a number of separate theories of money with little effort at comparison or evaluation. This procedure has tended to leave the student in a hopeless state of confusion. In an effort to avoid this pitfall, the favored approach has been presented in considerable detail. Certain other approaches have then been summarized and compared with the method of the text.

The money market has been given more than the usual attention owing to the need for a grasp of this topic in a wide variety of fields. Certainly no financial executive is qualified to pass judgment on policies pertaining to investments, loans, liquidity, and solvency without an understanding of the money market. Likewise, the persons concerned with the financial management of any sizable business need to know their way about in this area. Otherwise, how can they wisely administer a program of working-capital or of fixed-capital finance? The same is true of public officials concerned with financial problems. Moreover, if they are Federal government officials, they hold such large responsibility today for money and debt management that a thorough grasp of this field is imperative.

A final purpose has been to solve in so far as possible the difficult pedagogical problem of presenting a subject, the parts of which are so closely and importantly interrelated. It is of course necessary to cut into the closed circle at some point. But it is inadvisable to deal with complex aspects in the early stages except in a suggestive manner. This has been a common shortcoming of presentation, well illustrated by the all too frequent treatment of monetary management before the student has been even so much as introduced to the Federal Reserve System. So the attempt has been made to move into the subject gradually, starting with a general framework and subsequently fitting in the elements of the structure one by one. As a further visual aid, generous use has been made of tables and charts, and the latter have been designed so that as an exercise the student may bring them up to date.

In short, these have been the primary aims that have motivated this effort. Whether, or how nearly, they have been achieved is a question which must be left to the judgment of the reader.

My debts in preparation of the manuscript are many. As in all work of this kind, some of the greatest of these defy identification;

they constitute one's general background developed over the years. Others can be traced and in these cases specific acknowledgment is given in the text. In particular, thanks are due to my colleagues, Professors William A. Carter, James F. Cusick, Robert Davis, Henry L. Duncombe, Jr., John A. Griswold, Edward D. Gruen, Joseph L. McDonald, and Dean Herluf V. Olsen; to my father, George W. Woodworth; and to L. Sumner Pruyn, vice-president, First National Bank of Boston, all of whom have read and criticized parts of the manuscript. This assistance was invaluable and was instrumental in improving the book at numerous points. The remaining shortcomings and errors are entirely my own.

GEORGE WALTER WOODWORTH

HANOVER, N.H.,
March, 1950

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NOTE TO INSTRUCTORS

The feature of step-by-step development should make this book readily adaptable to most college courses in money and banking. The first twenty chapters are relatively simple and elementary, even though the degree of difficulty grows as the subject unfolds. Supplemented perhaps by the final chapter, they may well serve as the basis for a one-semester course at the most elementary level. With generous use of the questions and problems—which is suggested in all cases as a means of deepening the students' grasp—instructors will doubtless find this part of the book as much as can successfully be presented in such a course.

When the maturity and background of the students justify moving along at a more rapid pace, a selection which best suits the need can be made from the remaining chapters. In a group of seniors at the Amos Tuck School, the writer has been able to cover adequately in 42 meetings Chapters I to XXV, XXVIII to XXXI, and XXXV. Others may find a different selection more useful for their purposes. By generous employment of problems and outside readings, it is believed that the book may also serve satisfactorily as the main text for a two-semester course.

Some of the chapters in the last third of the book are not easy, but it is believed that they are no more demanding on the student of social science than are courses in the physical sciences. There has been an altogether too-ready disposition in this field to talk down to students on the ground that the issues are beyond them. This is a more serious error than extending them a little on occasion. Some of them may accept the challenge!

While care has been taken to avoid needless repetition, the plan of the book calls for discussion of some topics at different levels. This method requires careful planning by the instructor in order to refrain from exhausting the topic—at least in the students' eyes—on the initial exposure. For example, a very elementary treatment of the forces governing the price level is introduced in Chapter III in order that the student may have this background on which to build. But a thorough analysis of the topic is not undertaken until Chapters XVIII to XXV, after he has mastered enough fundamentals to appreciate the issues.

The analysis of monetary theory is mainly in terms of the conventional total-transactions equation of exchange for reasons that are developed in the text. However, this equation is reconciled with the income approach in Chapter III, and again in a more complete fashion in Chapter XXV where a summary of the Keynesian and Swedish methods is presented.

G. W. W.

CHAPTER I

FINANCIAL FUNCTIONS

The financial system plays a vital and dynamic role in the economic world. For this reason it presents a challenge to all persons who desire to become more familiar with the environment in which they live. Unfortunately, only the superficial features of the system are obvious to the layman who has made no special effort to probe into the subject. The deeper and more significant meanings are hidden from view. Money and banking are not peculiar in this respect, except that the issues are more complex than in many other fields. Therefore, while little can be seen at first glance, the fruits of sustained study are particularly rewarding.

Most people have some conception of how money mediates trade and of the use of a commercial bank when a loan or a checking account is desired. They are also in agreement with the sage who once said, "Money in the pocket gives one a sense of security and satisfaction that even religion itself does not afford."

But this order of understanding is not adequate for the intelligent citizen. It is even less adequate for the man who holds, or aspires to, executive responsibilities in finance, business, or government. Most of the policies and decisions that executives must make have a financial side, and oftentimes it is the dominant one.

The financial institutions of a country have large responsibilities with respect to the efficient operations of the economy. Their functions are in fact just as real as those of farm and factory. But since their contribution is a less obvious one, these institutions have often been popularly regarded as public parasites. This suspicion has long been fanned by politicians—partly with reason and in good faith, but mostly as an appeal to popular prejudice. The money trust and the power of Wall Street have been perennial political issues.

For the present summary, these functions may be classified under headings, as follows: (1) money, (2) commercial banks, (3) central banks, and (4) investment institutions.

THE FUNCTIONS OF MONEY

Money may be defined as anything which has wide acceptability as a standard measure of values or as a means of debt payment. This definition is in terms of its two primary functions.

A standard measure of values is one of the first essentials of an exchange economy. Without such a measure the value of each of the myriad of things in all grades, styles, and locations would have to be expressed in terms of each of the others. This would become a vast mathematical problem of permutations and combinations which would prevent progress beyond a primitive economic stage. But money simplifies the problem by providing standard value units in terms of which the value (price) of each object can be expressed. Coal is \$20.25 per ton; gasoline is 27 cents per gallon; apples are \$4.25 per bushel; and so on. With such a structure of money prices, comparisons of values of all manner of things then become quite easy. A simple division tells us that 1 ton of coal is the equivalent of 75 gallons of gasoline $(20.25)/(0.27)$ and of 4.76 bushels of apples $(20.25)/(4.25)$.

The need for a medium of exchange expressed itself at the dawn of history when trading first began. Bartering one article directly for another presented a number of difficulties. The savage who desired to trade a canoe paddle for a tomahawk had first to locate another that not only wished to dispose of a tomahawk but also desired a paddle. This *double coincidence* greatly narrowed the field. Even when the two got together the deal was far from complete. Perhaps the tomahawk had too few notches, was not of the very latest style, was the wrong weight, was made of inferior stone, or was badly balanced; likewise, perhaps the paddle failed in one or more respects to meet the desired specifications. In either event the deal would fall through, and both men would have to renew their search. But even if both of them were satisfied with the other's wares, the bargain would still have to be struck. Is the paddle worth one-half, two-thirds, or three-fourths of a tomahawk? If a two-thirds ratio is agreed upon, how will change be made—in a war feather, an otter's tail, or an arrowhead?

As a consequence of these basic needs for a medium of exchange and a measure of values, primitive peoples early devised some form of commodity money. It was usually some valuable and widely acceptable object within the tribe or area, most frequently an article of food or ornament. The cow (or ox) was one of the first general units of value, being dominant in Asia, Europe, and Northern Africa. In fact, the term "pecuniary" is derived from the Latin word *pecus*, meaning cattle. Other early moneys were grain, skins, shells, beads, ivory, cubes of tea,

and blocks of salt. Pieces of iron and copper were also used, and gradually the precious metals came to be utilized, at first in nuggets or dust, and later in crude coins. Private coinage evolved in the beginning, the coins passing by weight. Then as strong governments developed, in Greece, Assyria, and Egypt, the official stamp was imprinted on coins. This stage was reached in the seventh to fourth centuries, B.C. During the same period the Greek money-changers (trapesites) received coins on deposit, and orders similar to the modern check were used to transfer deposit credits on their books. Government paper money was issued in China in the tenth century. Bank notes find their origin in the notes of English goldsmiths during the seventeenth century. The goldsmiths also transferred deposits on their books in accordance with written orders (checks).¹

The function of serving as a medium of exchange involves two separate steps. The owner of a valuable product, say cotton, first sells it for money which he may hold as long as he chooses. Then he spends the money for things offered in the market place. Not until the end of this second step has the exchange been completed, *i.e.*, the trading of cotton for food and other consumer goods.

Another aspect of the two basic functions of money is that an object may serve as a standard unit for measuring values without being used as a medium of exchange. This may be illustrated by the cow unit of olden times and by the present gold dollar which is not even coined. Monetary gold can legally be held only by the U.S. Treasury. The opposite is also true, *viz.*, that the principal medium of exchange is not necessarily a measure of values in any basic sense. A good example is provided by demand deposits with which we pay the bulk of our debts. The basic unit of value, however, is the gold dollar to which the purchasing power of the deposit dollar is equated.

Closely allied to the two primary functions of money are two other subordinate ones, *viz.*, to serve as a debt medium, and to serve as a store of liquid value.

When money is established as the standard unit in terms of which prices are expressed, when it is made a legal tender, and when confidence in the stability of its value develops, a natural step is to use it as the standard medium for debt contracts. This is an exceedingly important function in view of the enormous amount of debt outstanding. Including the \$250 billion of Federal debt, the total money debts in the United States in October, 1948, exceeded \$500 billion. This employment of

¹ J. Lawrence Laughlin, *Money, Credit and Prices* (Chicago, University of Chicago Press, 1931), Vol. I, Chs. I, II; Vol. II, Chs. I, II.

money calls especially for a stable purchasing power. Otherwise, the real terms of the contract will be changed in violation of the original intent of both parties. When the value of the dollar falls (prices rise), debtors gain at the expense of creditors; when the value of the dollar rises, creditors tend to gain at the expense of debtors—at least in those cases where default does not occur.

Money is well adapted to meet a part of the liquidity requirements of individuals, businesses, and governments. Standard money is the most liquid form of asset, and other forms of money typically have the same purchasing power. Also, the aggregate value of the stock of money is substantial, usually amounting to between one-third and one-half of the national income. Money is held to meet expected expenditures and to satisfy the senses of precaution and speculation that most of us possess. Other nonmoney, liquid claims, such as time deposits, U.S. Government savings bonds, and short-term marketable Treasury obligations, also satisfy the desire for liquidity, but this function is served to a large extent by money itself. The demand for liquidity rises when there are large uncertainties, and when the view that prices are likely to fall prevails. Conversely, the demand for liquidity declines when a feeling of confidence is general and when higher prices appear in prospect.

A number of institutions are responsible for the issuance of money. Monetary laws provide the legal background. Among other things, these laws define the monetary standard, the monetary unit, and legal tender; indicate the kinds of money that shall be issued; prescribe limitations on issuance, including reserve requirements; designate the issuing institutions; and provide for the minting of coins and the manufacture of paper money. Coinage has been a central government function in the major countries since the beginning of the nineteenth century. Paper currency was issued by government treasuries, central banks, and commercial banks prior to the First World War. But since that time the tendency has been toward the use of central bank notes and away from issuance by commercial banks and government treasuries. Commercial banks have provided demand deposit money in important amounts since the seventeenth century. Circulating by check, it has gradually become the dominant means of payment in the English-speaking world and an important medium of exchange throughout the commercial world.

FUNCTIONS OF COMMERCIAL BANKS

The main monetary function of commercial banks is the creation of demand deposits (deposit money) and the transfer of deposit credits in

accordance with the orders (checks) of depositors. Customers are also furnished currency in the desired denominations, and may readily deposit surplus currency.

The other basic function of commercial banks is that of extending credit to business, consumers, and governments by making loans and buying investments. Their province is particularly that of financing the working-capital needs of business, but they have gradually become important also in financing fixed-capital requirements. In carrying out this task, it is evident that the banks are very influential in determining both the quality and the quantity of debts in the country. The wisdom or unwisdom of their decisions in this regard has much to do with the general state of economic health and with the cyclical fluctuations of business.

FUNCTIONS OF CENTRAL BANKS

Central banks are frequently called "bankers' banks" since their dealings are very largely with the commercial banks rather than with business or individuals. The Bank of England is the oldest member of the family, having been established in 1694. In the United States there are twelve Federal Reserve banks distributed strategically over the country. They are in effect welded into one great central bank by the Board of Governors of the Federal Reserve System, the over-all supervisory agency in this field.

The primary function of central banks is the adoption and execution of monetary policies that contribute most to the economic health and welfare of the country, viewed as a part of the world economy. Their other functions are subservient to this one and are of a more mechanical, routine nature. Along with the treasury they usually hold the ultimate monetary reserves on which they are privileged to extend their own credit within limits set by law or convention. This credit takes the forms of deposits and currency notes. The greatest part of their deposits represents the liquid reserves (legal or voluntary) of the commercial banks. Their currency notes typically constitute the bulk of the paper currency. In addition, they act as currency warehouses for the commercial banks—counting, sorting, and storing the currency deposited, and paying it out again on request. Central banks also perform a variety of fiscal services for the central treasury, including both loans and deposits.

FUNCTIONS OF INVESTMENT INSTITUTIONS

For the present summary, investment institutions may be classified as follows: (1) savings banks, (2) investment houses and brokers, (3)

life insurance companies, (4) trust companies, and (5) security exchanges.

1. Savings banks serve mainly the middle and lower income groups by providing a safe and convenient place to invest savings at a reasonable return. The millions of small accounts are pooled and put to productive use through real estate mortgage loans and the purchase of corporate and government bonds. The savings departments of commercial banks perform the same function as the savings banks proper, and hold about twice the amount of time and savings deposits. Savings (building) and loan associations are likewise important in this field.

2. Investment houses underwrite (purchase) the securities of businesses and governments and sell them to banks, insurance companies, individuals, and others having money to invest. They are thus middlemen between issuers and investors, and their decisions have a large influence on the direction of new savings into the most productive enterprises. Most investment houses are also *dealers* in existing securities, and some of them act as security *brokers* on a commission basis.

3. Life insurance companies are engaged in the business of contracting to pay a stated sum, say \$10,000, to the beneficiary at the death of the insured person. This payment is conditional on premium payments by the insurer according to a schedule agreed upon in advance. The premium payments of most policies include a large element of savings, so that with the tremendous growth of insurance these companies have become one of the most important types of institutional investor. In the early part of 1949, their total assets were about \$60 billion.

Fire, marine, casualty, bonding, and other types of insurance have a financial aspect, and when taken together these companies are very important. They operate more nearly on a pay-as-you-go basis, with the result that the investment reserve is smaller in relation to the amount of insurance than in the case of life companies. Nevertheless, these companies are important institutional investors. All insurance is based on actuarial tables and on the law of averages.

4. Trust companies and the trust departments of banks serve in a wide variety of fiduciary capacities for individuals and business. They are called on to act as administrators or executors of estates of deceased persons and to manage trust funds for the living. In business, they serve as trustee in corporate bond issues, fiscal agent, registrar and transfer agent of security issues, and receiver for insolvent companies.

5. Security exchanges provide facilities for trading in existing stocks and bonds. They thus contribute exchange liquidity or marketability to the capital market. This is very important both to investors and to issuers. The New York Stock Exchange is the dominant exchange with

greater volume than all others combined. In addition, there are more than twenty other security exchanges in leading cities of the country.

MONEY AND THE ECONOMIC SYSTEM

In broad outline, the monetary system forms an integral part of the economy by way of its relation to (1) the basic structure of economic values, (2) the price system and cooperation through exchange, (3) the level of employment and production, and (4) the distribution of the national income.

1. A basic feature of any economic system, whether it be private enterprise, communism, or some other, is a structure of economic values. A value must be placed on the primary factors—labor, capital, natural resources, and enterprise—and on all the intermediate and final products emerging from the processes of production. Valuation is necessary from the standpoints of both production and consumption. Lacking a structure of values, the scarce primary factors would be wasted in the production of too much of some things and too little of others. This would mean an intolerably low standard of living. At the same time nothing would prevent valuable finished products from being consumed in satisfying inferior wants or uses. For example, the entire supply of platinum might be dumped in with iron ore in the production of steel rails. But it is quite improbable that the bride would feel the same elation from riding on platinum rails as from wearing a platinum wedding ring. Thus, a structure of economic values is a first essential in an economic system for the guidance of all aspects of economic life.

2. The actual representative of economic values is the system of money prices. Each of the tens of thousands of goods and services in all their different grades and styles has a money price. Most of them in a free economy have a *market* price; lacking this, they are at least valued in terms of money. A money price, it will be recognized, is the number of units of money (dollars and cents) that represent the value equivalent of a conventional unit of goods. The morning paper, for example, quotes the cash price of wheat—No. 2, yellow hard, in Chicago—at \$2.25 per bushel; and the price of heavy steel scrap in Pittsburgh at \$48.50 per ton. This system of prices, representing underlying values, is relied upon in large part to guide economic activities.

The price system also reflects the complex interdependence within the economy made possible by exchange cooperation. This is not restricted to one nation, but becomes world-wide through international trade. Exchange cooperation of this sort opens new vistas of efficiency by making possible specialization and mass production. This means,

in turn, new vistas of material and cultural progress. But all of this would be impossible without money to mediate trade and to provide a common measure of values.

The strongest single influence at work on prices is that of the monetary system. When the commercial banks expand the amount of money, they release a force making for higher prices; and when they contract the stock of money, the opposite is true. For example, the trebling of the stock of money during the Second World War was the chief reason for the sharp rise of prices in the postwar years, accompanied by windfall incomes to some and great hardships to others whose real incomes fell.

3. The monetary policies adopted and made effective influence not only prices but also the level of production and employment. Monetary expansion has a tendency to increase production until capacity output and full employment are attained. Beyond this point, it tends only to push up prices. On the other hand, contraction of the stock of money is one of the factors making for depression and unemployment, as exemplified by the period 1930–1933. This effect does not begin, however, until the rise of prices has been halted.

4. The final broad effect of a change in the amount of money is on price relationships, and through them, on the distribution of the national income. When the price level rises sharply, certain sensitive prices lead, some prices move slowly, and others do not change at all. This disrupts the delicate balance in the price structure, especially as between costs and selling prices, with resulting maladjustments. Those people who produce raw materials and other sensitive commodities gain handsomely, since their incomes rise faster than the cost of living. But those who produce goods and services with sluggish prices, or whose money incomes remain almost fixed, suffer heavily when the cost of living rises.

It should now be clear that money is not a passive element in a modern economy. Even in the eighteenth and nineteenth centuries—when there was far less interdependence through trade, and when credit money was less fully developed—money was not a passive element. It was erroneously dealt with in that light by Adam Smith, John Stuart Mill, and other economists of that era.

Practically all payments are made with money; personal income is received and expended in money; savings are made in money and the money in turn is expended on capital goods; debts are contracted in money; and taxes are paid with money. In short, we live in a money economy. The smooth functioning of the economic system at a high level of output depends on a smooth flow of money payments round

and round from consumers to producers and back again to consumers. Let a break in this flow occur and business activity is interrupted, accompanied by unemployment, lower prices, and reduced incomes. This is true whether the break occurs at one place or another in the circle, for example, because consumers save more of current income than is being invested, or because business firms suddenly cut down on capital expenditures. This is a distinctive feature of a money economy. If any important group decides to hold rather than to spend or invest the money flowing to them, a recession or depression is generated.

Money may be likened to the drive shaft of a great locomotive. It works inconspicuously, and we are scarcely aware of its necessity until a breakdown of some sort takes place. Then we are likely to become so conscious of its importance, and so fearful of the future, that we magnify the difficulty by refusing to spend at the usual rate.

Questions

1. Discuss the significance of the fact that barter requires a double coincidence of demand and supply. How has the appearance of money improved the situation?
2. Define: money, money price, real income, and money income.
3. Indicate by an example the two separate steps involved when money serves as a medium of exchange.
4. State the primary and secondary functions of money. Is it necessary, to be called "money," that a liquid asset perform all these functions? Explain.
5. Is it necessary that the object which serves as the standard unit for measuring values must also serve as a medium of exchange? Explain.
6. "Money is the only asset that satisfies the need for liquidity." Do you agree?
7. Why are monetary laws an essential part of a money economy?
8. State the monetary functions of commercial banks?
9. Why are central banks frequently called "bankers' banks"? What functions do central banks perform?
10. In what sense may savings banks and investment banks be said to be complementary rather than competitive institutions?
11. Differentiate between the price level and the price structure.
12. Why is a structure of economic values a basic feature of any economic system?
13. "Money plays an active rather than a passive role in a money economy." Support this statement.

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CHAPTER II

ELEMENTS OF THE MONETARY SYSTEM: A FIRST VIEW

The monetary systems of all important countries have a number of elements in common. Each one has a monetary unit, a monetary standard, standard money, currency, deposit money, reserve money, legal tender, a central government treasury, a central bank, and commercial banks. It is with these common elements that the present chapter is concerned. Differences in organization, institutions, and details of monetary systems can better be dealt with later as the subject unfolds.

THE MONETARY UNIT

All measurement requires the use of some basic unit, such as the foot, the pound, or the gallon. For convenience, also, the primary unit of measurement has designated subdivisions and multiples, *e.g.*, the inch and the yard. A similar arrangement is needed in the field of value. In order to measure quantities of value, a unit of account must be provided for the monetary system. In Great Britain this unit is the pound sterling; in France, the franc; and in the United States, the dollar.

The monetary unit, together with its subdivisions and multiples, is often called "the denomination system." Convenience in making small purchases requires the penny, nickel, dime, quarter, and half dollar. Similarly, the use of currency for bank reserves, hoarding, and large payments calls for the issue of paper currency in denominations as large as \$10,000. It is best, as in this country, to set up the denominations on a decimal basis. Calculations are thereby simplified as compared with the English penny, which is the equivalent of $\frac{1}{12}$ shilling or $\frac{1}{240}$ pound.

Table 1 shows a classification by denominations of the currency in circulation in the United States just before the Second World War and in 1949. The outstanding fact is the fourfold increase in total currency. This is explained mainly by the great rise in retail trade and in wage payments where currency is largely employed. But it is also a result of currency hoarding and a shift from the use of deposits to currency

by the public. Second, well over half the currency in 1949 was in the form of \$10 and \$20 bills. A final fact of interest is that the largest rate of increase took place in the denominations ranging from \$10 to \$100.

TABLE 1. CURRENCY IN CIRCULATION IN THE UNITED STATES AT THE END OF
APRIL, 1939 AND 1949*
(In millions of dollars)

Denominations	April 30, 1939	April 30, 1949
Coin:		
Silver dollars	42	162
Subsidiary silver	354	934
Minor coin	152	353
Paper currency:		
\$1—bills.	505	994
\$2—bills	32	60
\$5—bills.	929	1,967
\$10—bills.	1,602	5,913
\$20—bills	1,453	8,541
\$50—bills	418	2,421
\$100—bills.	829	4,970
\$500—bills	170	390
\$1,000—bills	370	700
\$5,000—bills.	18	5
\$10,000—bills	33	9
Unassorted	3	1
Total currency in circulation	6,905	27,417

SOURCE *Federal Reserve Bulletin*

*Currency outside the U.S. Treasury and the Federal Reserve banks.

This is accounted for principally by the large rise in prices, wages, and national income with a corresponding increase in the sizes of money transactions, and perhaps also by currency hoarding.

THE ULTIMATE MONETARY STANDARD

The keystone of the monetary system of every country is the ultimate monetary standard, which may be defined as a basic quantum of value to which the value of the monetary unit is always equated. This definition is very broad, because the basic quantum of value may be a certain quantity of metal, a paper note, or even a price index. In the United States the ultimate standard is a lump of standard gold weighing 15 $\frac{5}{21}$ grains; in Great Britain it is now (1949) a paper pound. The

standard may or may not be coined. While most countries coined the standard metal before the First World War, few have done so since. The modern gold-standard practice is to keep the metal in bars in the central bank or treasury as a final reserve against credit moneys in actual circulation.

The relationship between the ultimate monetary standard and circulating currency and deposits is somewhat like the relation between the gallon and the multitude of containers used for measuring liquids—cans, bottles, barrels, tanks, vats, and the like. Without some basic standard wide differences would soon exist in liquid measurement. In this case the Bureau of Standards defines the standard gallon as 8.33 pounds of distilled water and all other commercial measures must conform. In the monetary field the purchasing power of all dollars, whether currency or deposit money, is maintained at a parity with the value of the ultimate standard. Moreover, if this standard is a good one, it will give assurance that the purchasing power of the monetary unit will be relatively stable.

RESERVE MONEY AND PAYMENT MONEY

One of the most useful classifications of the money stock is into reserve money and payment money. Each of these in turn may be broken down into various subdivisions for different purposes.

Reserve Money. Reserve money is that part of the monetary stock which is held by the government treasury, central bank, and commercial banks as a reserve supporting the payment money that actually is used to pay debts. In the United States this consists of gold and silver bullion and lawful money held by the Treasury, gold certificates and lawful money in the hands of the Federal Reserve banks, and the currency and legal reserves of the commercial banks. At the end of April, 1949, the ultimate metallic reserve of the Treasury, consisting of \$24.3 billion of gold bullion and \$3.6 billion of silver, supported the \$109.4 billion of payment money.

If a country is not on a metallic standard, the reserve money may consist of legal-tender notes of the government or central bank, and the reserve deposits of the latter. Thus, in 1949, the notes of the Bank of England constituted the reserve of the banking department, and the reserves of the London joint stock banks were represented by deposits and notes of the Bank of England. Yet neither the deposits nor the notes were convertible into gold.

The chief function of reserve money is to ensure the liquidity of the institutions issuing circulating credit moneys in the forms of notes and

deposits. It is especially important that all dollars of the money stock have identical value, whatever their form may be. Adequate reserves aid in realizing this aim. Another function of reserve money is to serve as a means of settling both domestic and international obligations among banks. Such obligations may arise from interbank loans and security purchases but they are to a larger extent a result of the failure of credit claims (mostly checks) to strike a balance. When countries are on the gold standard, the gold reserve becomes the final means of settling international accounts. As in domestic trade, the counterclaims largely offset each other, but whatever balance remains is usually settled by gold.

Payment Money. The payment¹ or circulating moneys are those which are actually employed in effecting the vast volume of payments for goods, services, and securities from day to day. They thus enter actively into the price determining process, whereas reserve moneys occupy a purely supporting role. There are two kinds of payment money in existence, *viz.*, currency and deposit money. Each of these performs a specialized monetary service.

Currency. Currency, or hand-to-hand money, is used in making relatively small payments, mainly in retail trade and for payrolls. For larger payments, checks are far more convenient and safe, with the result that in the United States between 80 and 90 per cent of total payments is made by check. This dominance of the check is characteristic of the English-speaking world, but on the continent of Europe currency still remains the more important medium.

The composition of currency in the United States before and after the Second World War is shown in Table 2. It is evident that silver circulates mainly in the form of silver certificates. People prefer paper currency to the heavy "cart wheels," the name frequently given to silver dollars. The item Subsidiary Silver includes dimes, quarters, and half dollars, while Minor Coin refers to pennies and nickels. Total coin represents but a small part—about 5 per cent—of all currency. The rest is in the form of paper money.

The bulk of paper money takes the form of Federal Reserve notes

¹ Payment money is often referred to as "circulating" money. The former term is preferred, however, since it is more descriptive of the purpose for which such money is held, *i.e.*, to pay debts. It is also preferred because it does not give the false impression that money is always on the move, circulating. In actual fact the typical dollar spends most of its time resting in a bank balance or in someone's pocket. Only once or twice a month does it pay a debt and thereby circulate.

which now (1949) constitute about 90 per cent of all paper money. The Federal Reserve notes are a safe and flexible form of currency. They are direct obligations of both the government and the issuing Federal Reserve bank. Gold certificates may be thought of as warehouse receipts for gold bullion held by the Treasury. Each \$10 certificate is a claim upon $10 \times 15\frac{5}{21}$ grains of standard gold. The certificates, however, have not been legally in circulation since 1933. Most of them are held by the Federal Reserve banks.

TABLE 2. KINDS OF CURRENCY AT THE END OF APRIL, 1939 AND 1949
(In millions of dollars)

Kinds of currency	April 30, 1939	April 30, 1949
Silver dollars	42	162
Subsidiary silver	354	934
Minor coin	152	353
Total coin	548	1,449
Gold certificates	73	43
Silver certificates	1,385	2,054
United States notes	255	315
Federal Reserve notes	4,426	23,146
Federal Reserve bank notes	26	315
National bank notes	191	93
Total paper money	6,357	25,966
Total coin and paper	6,905	27,417

SOURCE: *Federal Reserve Bulletin*.

NOTE: The data are the official figures of "money in circulation" which means currency outside the Treasury and Federal Reserve banks.

Silver certificates are similar to gold certificates, except that they represent a claim upon silver dollars on deposit at the Treasury. There is also the further difference that the silver in a silver dollar (371.25 grains of fine silver) is worth much less than the face value of the coin—only about 55 cents in fact on the basis of the price of silver in July, 1949 (\$0.715 per ounce).

United States notes or "greenbacks" were originally issued to finance the Civil War. A part of them was retired after the war, but in 1878 their amount was fixed at \$347 million where it remains today. A gold reserve of \$150 million has been earmarked for their protection since 1900.

National bank notes have been an important element of the currency since the National Bank Act was passed during the Civil War. They were issued by the commercial banks holding a national charter and were backed by government bonds pledged with the Secretary of the Treasury. During the summer of 1935, however, all United States bonds bearing the circulation privilege were called by the Treasury. The national banks redeemed their notes at that time and thereby shifted the liability to the Treasury where it has since resided. The notes are gradually being retired as they wear out. A similar retirement policy is being applied to the Federal Reserve bank notes which were issued during the banking emergency of 1933 and again during the Second World War.

Subsidiary currency has certain important characteristics. First, it is usually made of a less expensive metal than standard money for the convenience of the user and as a measure of economy. Imagine the difficulty of looking through one's pockets for a gold dime! Second, the face value of subsidiary coins is set higher than the value of the metal of which they are made. This is to prevent their being melted if the value of the metal advances. This lesson was first learned in the United States after the discovery of gold in California in 1848. Silver coins disappeared by melting and export since the metal content became more valuable than the coins as the value of gold-standard money declined. The difficulty was remedied in 1853 when Congress reduced their silver content sufficiently to make them more valuable as coins. Other countries have had similar experiences. Third, subsidiary coins are minted only on government order so that their amount may not become excessive. Last, their parity with standard money is ensured by making them redeemable, and by giving them certain legal tender powers in the payment of debts.

Since the Joint Resolution of Congress in June, 1933, all forms of currency have been full "legal tender." That is, they constitute a legal means by which a debtor may discharge any money obligation. Before 1933, there were only three kinds of money that were full legal tender, *viz.*, gold coins, silver dollars, and gold certificates. All other forms of currency possessed only partial legal-tender power.

In the great mass of day-to-day money payments, the question is seldom raised whether the money is, or is not, legal tender. In fact, most payments are made by checks which are an acceptable though not a legal tender. Nevertheless, it is highly important that a part of the currency be made a legal means of payment. In case of dispute between a debtor and a creditor over the amount of an obligation, the former may

stop interest and court costs by an offer of legal tender, provided the amount offered is subsequently found by a court to cover the obligation.

The question of what is legal tender also comes sharply to the fore when a change in the monetary standard takes place. For instance, the majority of bonds outstanding in 1933 contained a clause specifying that they were payable in gold coin of the weight and fineness in existence on the date when the obligation was contracted. This was designed to protect the creditor against an inflationary change of the standard. In June, 1933, however, Congress passed a joint resolution that abrogated the gold clause of money contracts. This permitted debtors to discharge their obligations in legal-tender dollars that were depreciated some 40 per cent in terms of gold. Subsequently, the Supreme Court upheld the constitutionality of this action of Congress. There was in this case, however, no real hardship imposed on the creditor. The legal-tender dollars, though badly depreciated in terms of gold, were still more valuable dollars than those originally loaned.

It has been traditional to designate the highest form of money as "standard money." By this is meant the money that either embodies or most closely represents the monetary standard. Before the First World War, when most countries coined gold, the gold coins were the standard money. If they were represented in circulation by gold certificates, the latter were also included in the standard-money category. But modern monetary practice is fast removing the significance of this distinction. Gold is no longer coined, and the tendency is for all paper currency to be represented by central bank notes with full legal-tender power. The distinction may continue to be useful, however, as between such notes on the one hand and subsidiary coins and bank deposits on the other.

Coinage is now restricted mainly to small change.¹ Nevertheless, mention should be made of certain practices, rules, and terms. Although private coinage was allowed in the United States until the Civil War, a complete government monopoly is desirable, and in fact exists in all leading nations. Otherwise, no trust can be placed in the weight and fineness of coins, and they become little more than lumps of metal that must be assayed and weighed before acceptance. The three mints in the United States are located in Philadelphia, Denver, and San Fran-

¹ This does not mean that the United States mints are standing idle. In the fiscal year that ended June 30, 1948, they produced 803 million coins for domestic use, and in the preceding year 2,016 million. In addition, they manufactured a substantial number of foreign coins for smaller countries which either have no mint or have inadequate mint facilities. The activity of the mints in these two years, however, was well above normal, owing to the need for coins which has accompanied the great rise in the national income during and since the Second World War.

cisco. In addition, the government maintains assay offices in seven cities.

If the mint stands ready to coin any amount of the metal offered, coinage is said to be *free* or *unlimited*, in contrast with coinage on government account or *limited* coinage. For example, in the United States the coinage of subsidiary money is limited, while the coinage of gold was formerly unlimited. When the face value of coins exceeds the bullion value plus the expense of coinage, the government makes a profit known as "seigniorage." All or part of the actual expenses of preparing and coining the metal are referred to as "brassage." The practice of gold-standard countries before the First World War was to take no seigniorage profit on gold coinage but to levy a brassage charge covering all or a part of the actual mint expense. When no charge is made for the coining of standard metal, *i.e.*, metal refined, alloyed, and ready for coinage, the coinage is said to be "gratuitous."

The guiding specifications of a good coinage system are (1) that the coins be of convenient size, (2) that they be alloyed in such a way as to resist the wear of circulation, (3) that they be designed to prevent counterfeiting and clipping, and (4) that they bear an appropriate and artistic official stamp.

Similar considerations govern the manufacture of good paper money. Counterfeiting should be avoided by the construction of the paper and by the intricacy of the design. The design should also be distinctive and uniform so as to facilitate the detection of counterfeits. In addition, such currency should be durable, should be convenient in size, and should meet aesthetic requirements. All paper money issued in the United States is manufactured by the Government Bureau of Engraving and Printing in Washington, D.C.

Deposit Money. We have already indicated that, although bank deposits are not legal tender, the bulk of actual money payments is made by the common bank check. Only the checking accounts, however, belonging mainly to individuals, business firms, and governments are really deposit money. Since time and savings deposits cannot be checked upon, they do not serve as a medium of exchange. It is better to regard them as one of the most liquid forms of investment rather than as money. At the end of April, 1949, the deposit money in the country amounted to \$84.5 billion as compared with \$24.9 billion of currency outside the Treasury and the banks.

FULL-BODIED MONEY AND CREDIT MONEY

The monetary stock may also be classified on the basis of whether the value includes an element of credit. The only full-bodied money in

the United States is the gold bullion held by the Treasury and represented by gold certificates. That is, the value of the gold represented by a \$100 gold certificate is \$100, no more, and no less. At the end of April, 1948, the Treasury's gold stock amounted to \$23.2 billion. All other moneys embody a credit element in the sense that their face value is greater than the stuff of which they are made. Thus, all the \$111 billion of payment money (deposits and currency) on the same date was credit money, as was part of the reserve money itself.

The various forms of money differ in the degree to which they embody credit. Deposit money represents the greatest use of credit. Indeed, under the basic reserve requirements, \$1 of gold may support between \$17 and \$40 of deposit money. In contrast, the gold dollar cannot legally serve as reserve for more than \$4 of Federal Reserve notes.

The use of the term "credit money" raises a question regarding the real meaning of credit and debt. Credit may be defined as borrowing power which permits the purchase of things today that could otherwise not be bought until tomorrow. It implies a promise to pay something valuable, usually standard money, in the future. Any valuable object, however, such as bales of cotton of a specified grade, might be promised. The existence of credit implies *confidence*. Someone must have confidence in the integrity and ability of the one who promises to pay; otherwise, no credit transactions would take place.

This leads to another aspect of credit which is a topic of widespread popular confusion, *viz.*, credit is also *debt*. Just as there must be a wife for every husband, so there must be a debt for every credit. If someone extends credit, someone else must assume the debt; there is a lender for every borrower. Nevertheless, credit has come to refer popularly to something *good*, and debt to something *bad*. The fact is that credit and debt, like food itself, are good when used in the proper amounts, and bad when used excessively. This statement applies to the economies of both the household and the nation.

Returning more specifically to money, the terms credit money and debt money may be used interchangeably. Thus, modern payment money and part or all of modern reserve money represents *debts* of the central government, the central bank, or the commercial banks. When a country adheres to a gold or other commodity standard, the debt money is made redeemable in the commodity at a fixed price, say \$35 per fine ounce of gold. But if a paper standard exists, the ultimate reserve money consists only of lawful paper money. In this case the creditor (holder of money) has no promise from the issuer of redemption in any other valuable object. He accepts it either because it is a legal

tender or because it is a valid tender. In the latter case he has the assurance that others will accept it at face value, and perhaps also that it will be redeemed in legal-tender money. The aggregate demand for money as such will be maintained only as long as the people retain confidence that the government will not seriously overexpand the stock of money.

From the foregoing description of monetary arrangements, it is evident that the banks and the Treasury constitute the principal monetary agencies. It will be recalled from the preceding chapter that both the commercial banks and the central bank occupy key monetary positions. The latter, along with the central treasury, is mainly responsible for shaping and administering monetary policies.

COMPOSITION OF THE MONEY STOCK

The composition of the money stock is governed by a variety of forces which may well be considered under the following headings: (1) monetary laws, (2) monetary habits and institutions, and (3) Gresham's law.

Monetary Laws. The monetary laws established by Congress and the Administration provide the framework of the monetary system and therefore have much to do with the components of the stock of money. Money that is made full legal tender in payment of all debts to individuals, businesses, and governmental units has a greater capacity to remain in the money stock than other forms of money that are given only partial legal-tender power. The latter in turn have greater capacity to remain than forms of money which are not legal tender for any purpose. Moreover, the laws largely determine the kinds and amounts of the various moneys. That is, they set forth the conditions of issuance of Treasury notes, central bank notes, and commercial bank notes; and they may foster or discourage the use of deposit money.

Monetary Habits and Institutions. Once established, habits in the use of money are slow to change. This can be illustrated by the relative stability in the proportions between currency and deposit money in the United States since the Civil War. While deposits have become the dominant means of payment, their proportionate rise has been gradual. Individuals and businesses had to discard old methods and adopt unfamiliar practices. The shift to deposits was fostered by the profit motive of the banks, the availability of banking offices, and the perfection of the entire mechanism of payment by check. Given the level of prices and other conditions, the public decides in what form it wishes to hold the money stock. If relatively too much currency is outstanding, it is deposited in the banks until the desired proportion is

established. Conversely, if deposits are too large relative to currency, checks are cashed until the proper balance is struck.

Another shift in monetary habits was from the early use of coins to bank notes. This was promoted by the banks in order to enlarge profits by loans and to improve liquidity.

Gresham's Law. The general principle known as Gresham's law is credited to Sir Thomas Gresham, adviser to Queen Elizabeth of England in the sixteenth century. In its early form it was usually stated that bad money drives good money out of circulation. It was based on the observation that the worn or clipped coins tended to remain in the money stock while the good coins were selected for commercial melting and for export. As stated, the principle was ambiguous and misleading; it may be reformulated as follows: When different forms of legal or valid tender moneys exist, the less valuable forms tend to displace the more valuable forms. This law applies under a variety of circumstances.

First, the principle may apply to the monetary standard itself. When a gold-standard country suspends gold redemption of currency, legal-tender (or valid) government notes or bank notes usually become the ultimate standard. Being legal tender for debt payments, they naturally become the money in terms of which market prices are quoted. Gold goes to a premium in terms of them, and it disappears as a form of payment money (assuming that it was previously permitted to circulate). This development took place during the Civil War when the legal-tender Treasury notes (greenbacks) displaced gold, which reached a premium of 185 per cent in July, 1864. Gresham's law also comes into operation when a country is on a bimetallic standard, *i.e.*, when the monetary unit is defined as the value of either a certain weight of gold or a certain weight of silver. If, under these conditions, the relative market valuation of the metals departs from the legal valuation, the metal that is overvalued at the Treasury displaces the other one and becomes the effective monetary standard. This development occurred in the United States between 1834 and the Civil War. The country was on a legal bimetallic standard, but gold was overvalued by the Treasury in relation to silver as compared with the valuation of the world markets. As a consequence, silver went to a premium and was displaced as standard money, and gold became the effective monetary standard.

Second, Gresham's law affects the composition of currency. The tendencies of worn and clipped coins to displace good coins and of legal-tender notes to displace a redemption-suspended metal have already been cited. Experience has also demonstrated that legal-tender interest-bearing Treasury notes will not remain in circulation, but will be with-

drawn and held as an investment. The interest accruing makes them more valuable than non-interest-bearing, legal-tender money. Furthermore, history has established the tendency of inferior bank notes to displace those at par with standard money. A good example of this occurred in Boston in the early part of the nineteenth century. Notes of Boston banks were at par with standard money, but the notes of many New England banks were at a discount in Boston. Under these circumstances, the inferior notes displaced those of the Boston banks. In order to avoid the discount, people deposited Boston bank notes and retained the inferior notes to pass on to merchants and others who would accept them at par or at less discount. This situation was remedied by the famous Suffolk System which will be described at a later point.

QUALITIES OF GOOD MONEY

With the background of this chapter and the preceding chapter, we are now in position to summarize the qualities of a good money. These qualities, however, cannot be applied to the money stock as a whole in view of the functional differences between its subdivisions: the ultimate standard; reserve money; and payment money, which in turn is composed of currency and demand deposits.

The ultimate standard should promote a price system that makes a maximum contribution to the welfare of the people. This means that its goods value should be relatively stable, although not necessarily unchanging. It should also command the confidence of the people, and in so far as possible should promote stable foreign exchange rates and be susceptible to international adoption. The standard should not be so inflexible that wise over-all monetary management in the interest of welfare is precluded.

All moneys, of whatever type, must have wide *acceptability*, and they should be at *parity* with the ultimate standard unit. Otherwise, they will be unsatisfactory for the performance of either of the two basic functions, *viz.*, to serve as a measure of values and as a medium of exchange. Parity can best be maintained by ready convertibility into the standard or its representative. Parity will of course give all moneys the same degree of stability of value, no more and no less, as that of the ultimate standard, and will give all money units identical purchasing power. A corollary of this is that money should not yield an interest return, since this would violate parity and would change its value from day to day. Another corollary is that money should be something whose value does not depreciate because of physical deterioration or age. Still another one is that money should be inexpensive to store or hold.

This means that, apart from small currency, it should have high value in small bulk. Deposit money best meets this requirement.

Reserve moneys should be composed of the highest forms of money, dignified by law for the purpose. When a country is on a metallic standard, the money metal stock constitutes the ultimate reserve. In the case of a paper standard, the ultimate reserve consists of government or central bank notes made legal for the purpose. The reserve-money structure may also include certificates representing reserve metal and high forms of legal reserve credit money, such as deposits in the central bank or in foreign central banks.

All currency should be legal tender in order to widen its acceptability. It should be issued in convenient denominations and sizes for making payments in the currency sphere. The design should be appropriate, intricate, and easily recognized in order to forestall counterfeiting. Currency should also be reasonably durable.

Deposit money need not be a legal tender, but its acceptability should be enhanced by ready convertibility into reserve money and by government assurance of its ultimate safety.

A final question may well be raised: What gives money its value? This can best be answered in terms of demand and supply. Demand for money to hold arises from the real need of business and individuals for liquidity, a large part of which is satisfied by money. The demand for money is enhanced when it is legal tender and when there is great confidence that it will not depreciate in value. Confidence grows mainly out of the belief that the money will not be overissued, because of convertibility into a valuable money metal, or that sound monetary management by government authorities will prevail. This aggregate demand for money interacts with the number of units (supply) to give each unit a goods value.

Thus the explanation of the value of money, like that of any economic object, lies in demand over against scarcity. This is a more satisfying general approach than an explanation based on convertibility into some valuable commodity. It will be noted that such convertibility operates, if it is present at all, through limiting the stock of money.

Review Questions

1. List the common elements of the monetary systems of all important countries.
2. What is the "denomination system"? Why is it an essential part of any monetary system?
3. What are the more important reasons for the fourfold increase in total currency in circulation in the United States between 1939 and 1949?

4. Define the ultimate monetary standard of any monetary system. What is the ultimate monetary standard in this country?
5. Differentiate between reserve money and payment money.
6. Discuss the functions of reserve money.
7. What two kinds of payment money are in existence? Discuss their functions and point out their relative importance.
8. Describe the following: Federal Reserve notes, gold certificates, silver certificates, United States notes, national bank notes, Federal Reserve bank notes, subsidiary currency, and standard money.
9. "Since the Joint Resolution of Congress in June, 1933, all forms of currency have been full legal tender." Explain. What is the purpose of legal-tender money?
10. Discuss the advisability of making checks legal tender for debt payments. Are certified checks a legal tender?
11. Why is it desirable that the central government have a complete monopoly of coinage? Has private coinage ever been allowed in the United States?
12. Interpret the following terms relating to coinage: free or unlimited coinage, limited coinage, seigniorage, brassage, gratuitous coinage.
13. Outline the guiding specifications of a good coinage system.
14. Differentiate between credit money and full-bodied money.
15. Summarize the functions of the Federal Reserve banks and the commercial banks in the United States.
16. How do monetary laws, habits, and institutions govern the composition of the monetary stock?
17. State Gresham's law. How does it apply to the monetary standard and to the composition of currency?

Advanced Questions and Problems

1. Prepare a table similar to Table 1, showing the amounts of the various denominations of currency on the most recent date for which figures are available, compared with April 30, 1949. Explain the significant changes which are evident from the table. (SOURCE: *Federal Reserve Bulletin*.)
2. Prepare a table similar to Table 2, showing the amounts of the various kinds of currency on the most recent date for which information is available, compared with April 30, 1949. Explain the significant changes which are brought out by the table. (SOURCE: *Federal Reserve Bulletin*.)

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CHAPTER III

VALUE OF MONEY AND THE PRICE SYSTEM

The practical significance of the value of money has been forcibly brought to the attention of all householders and businessmen in recent years. This education in the school of experience was begun as the events unfolded in the great depression of the 1930's. In the period 1930-1933 wholesale prices fell 40 per cent, farm prices dropped 60 per cent, while many rigid prices such as public utility rates did not decline at all. Although the initial price declines reflected deeper causes, it was not long before the drop in prices itself assumed a causal role. The derangement of price relationships carried with it a serious disorganization of the whole economy. One wave of liquidation unleashed succeeding layers of distress selling. The consequences were a deepening of the depression marked by heavy unemployment, restriction of production, widespread business failures, default of obligations, and in the end the complete breakdown of our banking system.

The school of experience opened a second course on the value of money during the war and postwar periods. At midyear 1949 the cost of living (consumers' prices) was about 70 per cent above the prewar period 1935-1939, and the level of wholesale prices had doubled.¹ Price relationships were again deranged, as is illustrated by the fact that farm-product prices had risen by about $2\frac{1}{2}$ times. Moreover, the people of most other countries were far more keenly aware than we of the ravages of rising prices. For example, between 1938 and 1949, wholesale prices in France rose nineteenfold, in Italy fifty-sevenfold, and in Japan fifty-threefold.² In these circumstances no academic instruction is required to emphasize the practical importance of changes in the value of money.

THE PRICE SYSTEM

The value of money means simply its power to command goods and services in exchange, *i.e.*, its purchasing power in the market place. Upon reflection this turns out to be a list of thousands of exchange

¹ As measured by the indexes of the U.S. Bureau of Labor Statistics.

² *Federal Reserve Bulletin*, May, 1949, p. 610.

ratios between a unit of money and physical units of other valuable things. That is, \$1 buys 20 oranges, 4 pounds of cotton, 5 pounds of copper, 10 ice-cr  am cones, and so on. However, money values are not usually expressed in this manner, but for convenience as dollar-and-cent prices of conventional commodity units.

For example, spot prices of selected commodities were recently quoted in a financial paper as follows:

Wheat, No. 2, red, N.Y., bu..	\$ 2.52
Sugar, granulated, N.Y., lb....	0.08
Copper, electrolytic, N.Y., lb.	0.21
Crude oil, Mid-Continent, 33 to 33.9 gravity, N.Y., bbl.	2.51
Pig iron, No. 2, Philadelphia, ton.	42.67

Consideration of these prices reveals that the value of money is the *reciprocal* of prices. That is, when the price of wheat is \$2.52 per bushel, \$1 buys $\frac{1}{2.52}$ bushel. If the price doubles to \$5.04, then \$1 buys $\frac{1}{5.04}$ bushel, or only half as much as before. Similarly, if prices on the average rise to twice their previous level, one may say with equal propriety that the value of money is halved.

Two aspects of the price system should always be distinguished, *viz.*, the structure of prices and the level or scale of prices. The former refers to the myriad of individual prices and to the various subgroups of prices which are significant in the study of particular problems. Explanation of the price structure is in terms of the general theory of value which makes use of schedules of demand and supply to account for the realized prices of the market. The price level, on the other hand, is an over-all average of individual prices.

The Price Structure. An individual realized price emerges as a consequence of the interaction of the schedule of demand for the product, say wheat, and its schedule of supply. The schedule of demand (potential demand) refers to the number of bushels which buyers would purchase during a given period of time at each of a series of prices. Similarly, the schedule of supply (potential supply) refers to the number of bushels which sellers would sell at the identical series of prices. At one of these prices in the array, demand and supply will be equated; this is the *realized* market price. At any lower price, demand would exceed supply; at any higher price, supply would exceed demand.

The schedules of demand and supply for each article carry the analysis down to its ultimate basis: the decisions of individuals and separate business firms. Each person (or firm) has his own schedules. The aggregate demand (and supply) schedule for each article is derived by

the summation of all these individual schedules. An important feature of schedules of demand and supply is that they look to the future; they are an outgrowth of plans and expectations with regard to the course of prices, demand, production, and other economic developments. Moreover, they are strongly influenced by events of the past in that such events provide the chief basis on which forecasts are actually made. Thus realized prices as they emerge from hour to hour are a present link between the past and the future since they are influenced by both and in turn influence new business plans, new schedules, and future prices.

The price system is made up of thousands of individual prices of valuable things which may be classified into more or less homogeneous groups for different purposes. The most significant group of all is that of retail prices paid by the final consumer, for whom the whole economic order presumably exists. This large group in turn subdivides into a number of subclasses, such as food, clothing, fuel, furnishings, rent, and so on. At the other extreme is the group of raw material prices—natural products of farm, forest, and mine. Generally speaking, such prices include only a preliminary stage of processing. Then between the retailers and raw material producers stand the manufacturers and wholesalers who quote prices of products at various stages of production. These prices embody the costs of raw material and the expenses of production incurred up to a particular point of manufacture and distribution.

This raises the important distinction between selling prices and the prices of the cost factors which are the elements of selling prices. At any stage of the whole productive process, the selling price of the product may be resolved into costs of the primary factors—land, labor, capital, and enterprise. Taxes likewise must be included. Each of the primary cost factors in turn has its *price* in the form of rent, wages, interest, and profits. Thus, apart from taxes, the price of any article is made up of the sum of the values ($\text{price} \times \text{quantity}$) of the primary factors consumed. Arising from this basic fact is the prime necessity of maintaining a proper balance between costs and selling prices. For the profits of enterprise are positive or negative depending upon whether selling prices per unit more than cover or fail to cover costs; and, in turn, the decisions of businessmen to hire labor and to produce depend upon profit expectations.

There are also certain other groupings of prices that may be significant for particular purposes. One may desire to separate the prices of internationally traded goods from domestic goods that do not enter into foreign commerce. Or one may be interested in the course of prices at

the farm as compared with prices of manufactured goods. Again, attention may be focused on railroad and other public service rates; on professional salaries; on the prices of durable consumers' goods, such as houses; on durable producers' goods, such as tractors; or on the value of the equity in corporations as reflected in the prices of stocks.

All these price groups are closely interrelated and tend to be welded into one integrated system. But this tendency by no means justifies the neglect of the separate groups. If, for instance, the quantity of money were increased until its value were halved, all prices would be approximately doubled after the readjustments were entirely completed. The adjustment process, however, would take many years, and in the meantime relationships among the various price groups would be seriously disturbed. Under the initial stimulus, the sensitive raw material group might treble in price while public utility rates and other sluggish prices remained at or near the old level. During the adjustment period, therefore, it would not be sufficient to rely upon one grand average of all prices. In order to visualize the degree of price disequilibrium, one would have to observe the relative movements of individual prices and price groups.

Thus, while the price system tends toward an equilibrium, it is continuously disturbed by such events as wars, government interference, strikes, overproduction of some things and underproduction of others, new inventions, shifts of demand, floods, and droughts. Disequilibrium is the rule rather than the exception. For these reasons little can be learned about the value of money from a single average of all prices. The whole price structure in its logical divisions and relationships should be studied over a period of time. The value of money should be considered in *detail* rather than simply *in general*.

The Price Level. The price level may be defined as the grand average of the myriad prices which when viewed individually or in logical subgroups are thought of as the price structure. Such an average suffers in its usefulness from the limitations of averages in general, since it compresses into one figure a mass of price data which vary widely from this figure and also in nature. When prices of primary factors, durable and nondurable consumers' goods, durable and nondurable producers' goods, services, real estate, stocks, bonds, and other things are all thrown indiscriminately into one hopper the result verges on a mathematical abstraction. It is almost like calculating the average weight of animals in the zoo.

Nevertheless, the concept of a general price level (or its converse, the value of money) is a useful one in connection with many broad problems

of public policy involving the whole economy. For example, it is needed in the determination of policies with respect to the monetary and banking system, the level of employment and production, the distribution of income, and taxation.

MEASUREMENT OF PRICE-LEVEL CHANGES

Changes in the price level and its subdivisions are measured by the use of index numbers. This section gives a brief explanation of their nature and a description of two leading price indexes.

Index Numbers of Prices. A price index number is a figure that measures the *average* change of a group of individual prices. The average price of the group in a base period is usually represented by 100, and changes are expressed as percentages of the base-period price. This is illustrated in Table 3, which shows the steps in computing an index by the aggregative method. The first step is the multiplication of each price in the base year (1948) by the weight assigned to it and the entry of the resulting products in column (4). Next is the multiplication of each price in the given year (195X) by its weight and the entry of the resulting products in column (5). The last step is the summation of columns (4) and (5) and the expression of the latter sum as a percentage of the former.

TABLE 3. COMPUTATION OF A PRICE INDEX
(Aggregative method)

Commodity	Prices 1948 (1)	Prices 195X (2)	Weights, millions (3)	Weights × 1948 prices (4)	Weights × 195X prices (5)
Wheat, bu.	\$ 2.52	\$ 2.02	1,365	3,440	2,757
Sugar, lb.	0.08	0.06	15,000	1,200	900
Copper, lb.	0.21	0.29	2,776	583	805
Crude oil, bbl.	2.51	3.47	1,856	4,659	6,440
Pig iron short ton.	42.76	58.00	60	2,520	3,480
Total . . . . .	.....	.....	.....	12,402	14,382

$$\text{Index for 1948} = \frac{12,402}{12,402} \times 100 = 100$$

$$\text{Index for 195X} = \frac{14,382}{12,402} \times 100 = 116$$

The result (116) is the price-index number for 195X, which means that

on the average the prices in the group were 16 per cent higher than they were in the base year (1948). The weights used in this case are the physical quantities produced or consumed during 1947.

In the planning of an actual index, many difficult problems arise which we may only enumerate. The first step is a careful definition of purpose. Upon this rests many of the succeeding decisions. Next comes the selection of prices to be included. Obviously, only a sample can be used, and above all, this sample should truly represent the field from which it is drawn. Then one is faced with the problem of assigning relative importances to the various prices. It was necessary, for instance, to weight crude oil more heavily than copper in the illustration. Fourth, comes the choice of a base period. And last, the mathematical method of construction must be determined. Each problem presents its own peculiar complications and difficulties.¹

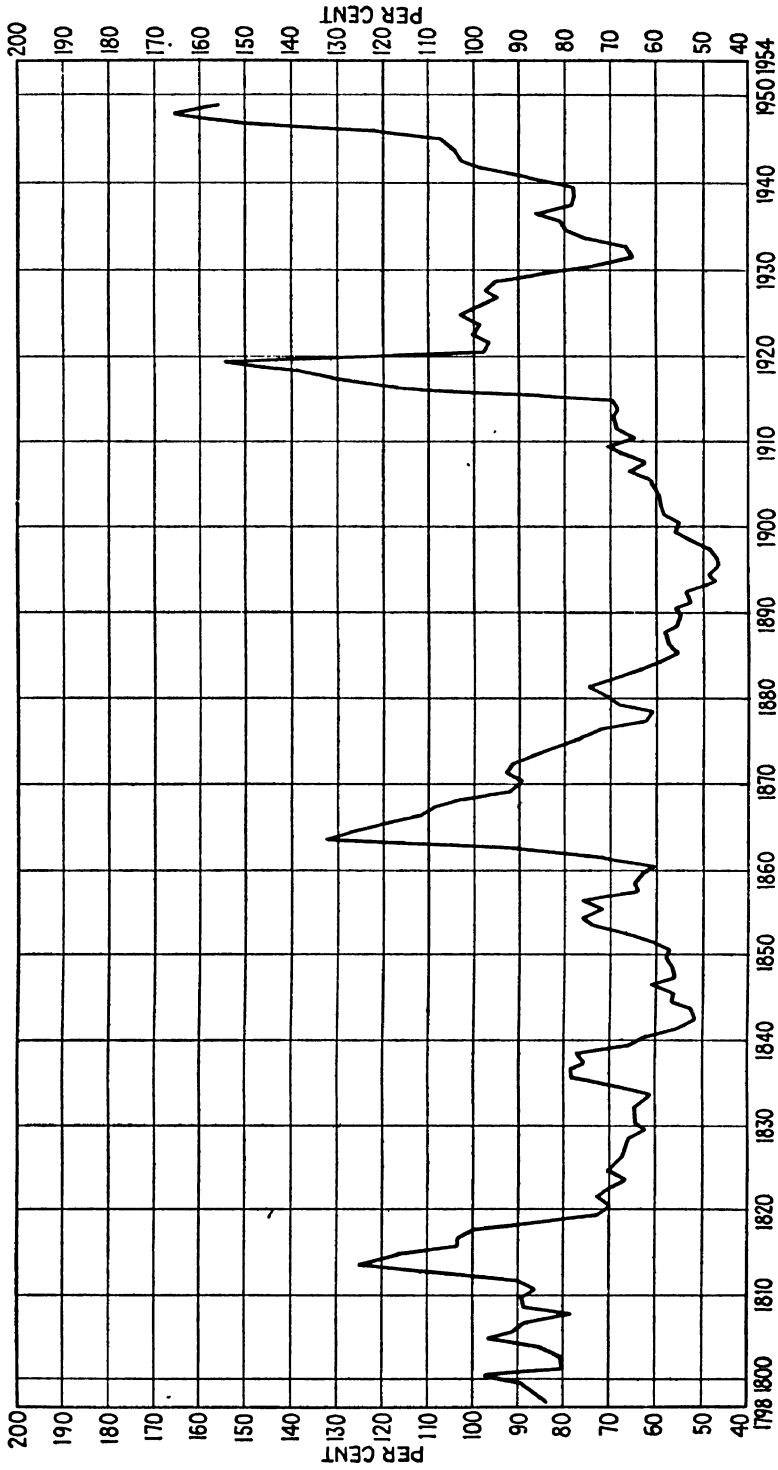
By far the most widely used and comprehensive index of wholesale commodity prices is that of the U.S. Bureau of Labor Statistics shown in Charts 1 and 2. The general method of construction is the same as that in the foregoing illustration. It is based on about 900 separate price series and is published weekly and monthly with 1926 = 100. The weights employed are the average quantities of the included commodities marketed in 1929–1931. An especially useful feature of this index is the detail in which it is made available. One grouping is based upon origin: (1) farm products, (2) nonagricultural commodities, and (3) all commodities other than farm products and foods. Another grouping relates to the stage of manufacture: (1) raw materials, (2) semimanufactured products, and (3) manufactured products. Still another more detailed classification by nature of product is published with 10 main groups and 49 subgroups. This enables one who is interested in the course of prices in a particular industry or group to select a representative index.

Chart 1 gives a view of prices in long perspective since the beginning of the nineteenth century. One is first impressed by the similarity of the peaks in 1814, 1864, 1920, and 1948 which were mainly a consequence of war finance. Another outstanding feature is the periods of long-term rise or decline of prices: (1) decline from 1814 to 1843; (2) rise from 1843 to 1864; (3) decline from 1864 to 1896; rise from 1897 to 1920; decline from 1920 to 1933; and rise from 1933 to 1949.

Chart 2 shows the same index with two of its subdivisions since the

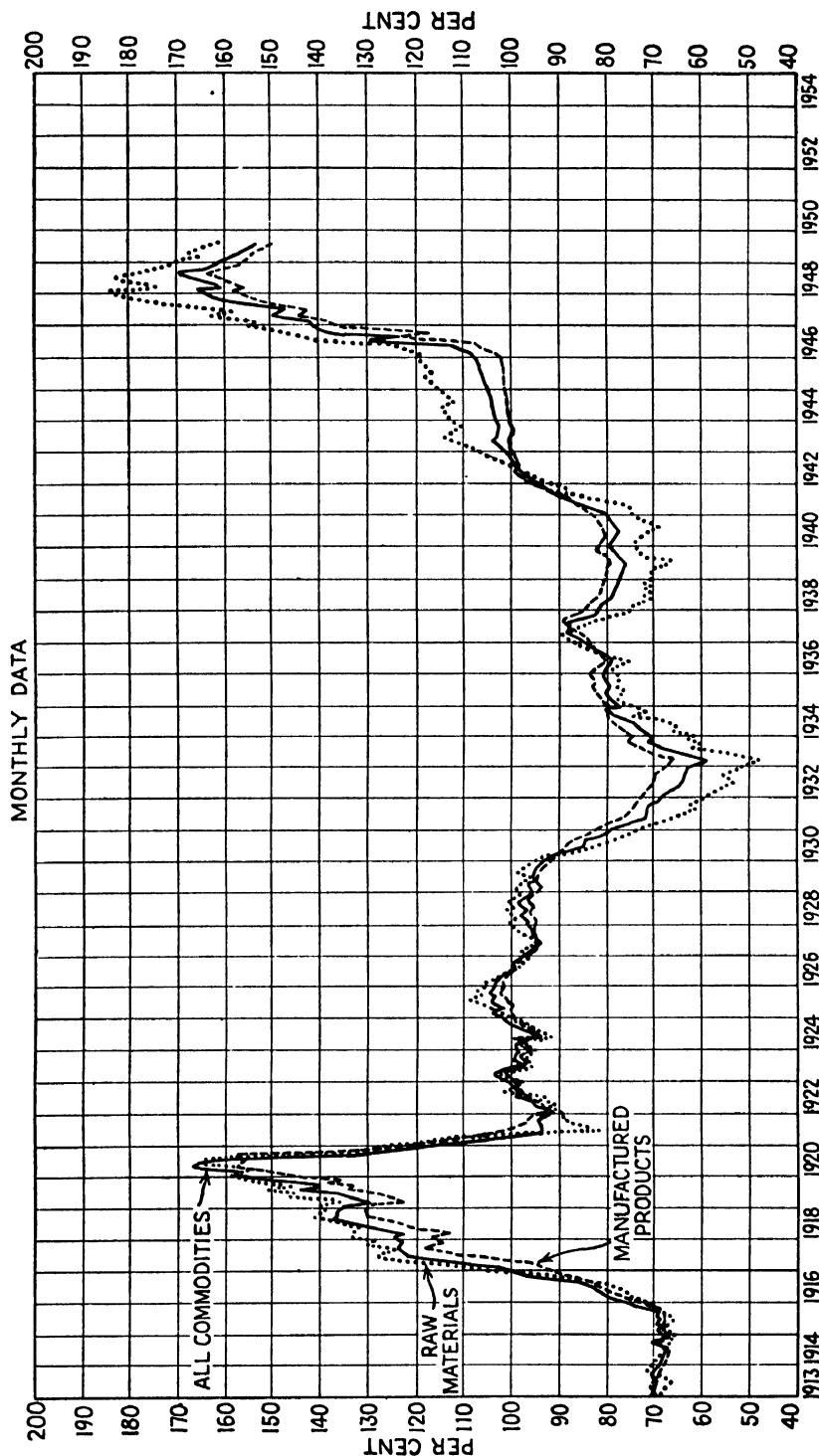
¹ For a more comprehensive discussion of index numbers, see W. A. Neiswanger, *Elementary Statistical Methods* (New York, The Macmillan Company, 1943), Chs. XI, XII.

CHART 1. THE WHOLESALE COMMODITY PRICE LEVEL, 1798-1949 (1926 = 100)



SOURCE: Index of U.S. Bureau of Labor Statistics, 1890-1949; comparable index of Professors G. F. Warren and F. A. Pearson before 1890.

CHART 2. WHOLESALE COMMODITY PRICES, 1913-1949 (1926 = 100)



Source U S Bureau of Labor Statistics.

outbreak of the First World War. This brings out sharply the important fact that in periods of rapid change a dispersion of prices takes place. Relationships become deranged, partly as a reflection and partly as a cause of economic maladjustments. In particular, raw material prices exhibit greater sensitivity and move through a wider range than finished goods prices. This is largely accounted for by the facts that (1) both the conditions of demand and supply of raw materials are relatively inelastic; (2) raw materials are traded upon organized commodity exchanges under highly competitive conditions; and (3) finished goods prices in large part embody rigid costs, such as interest, rent, wages, electricity, transportation and depreciation.

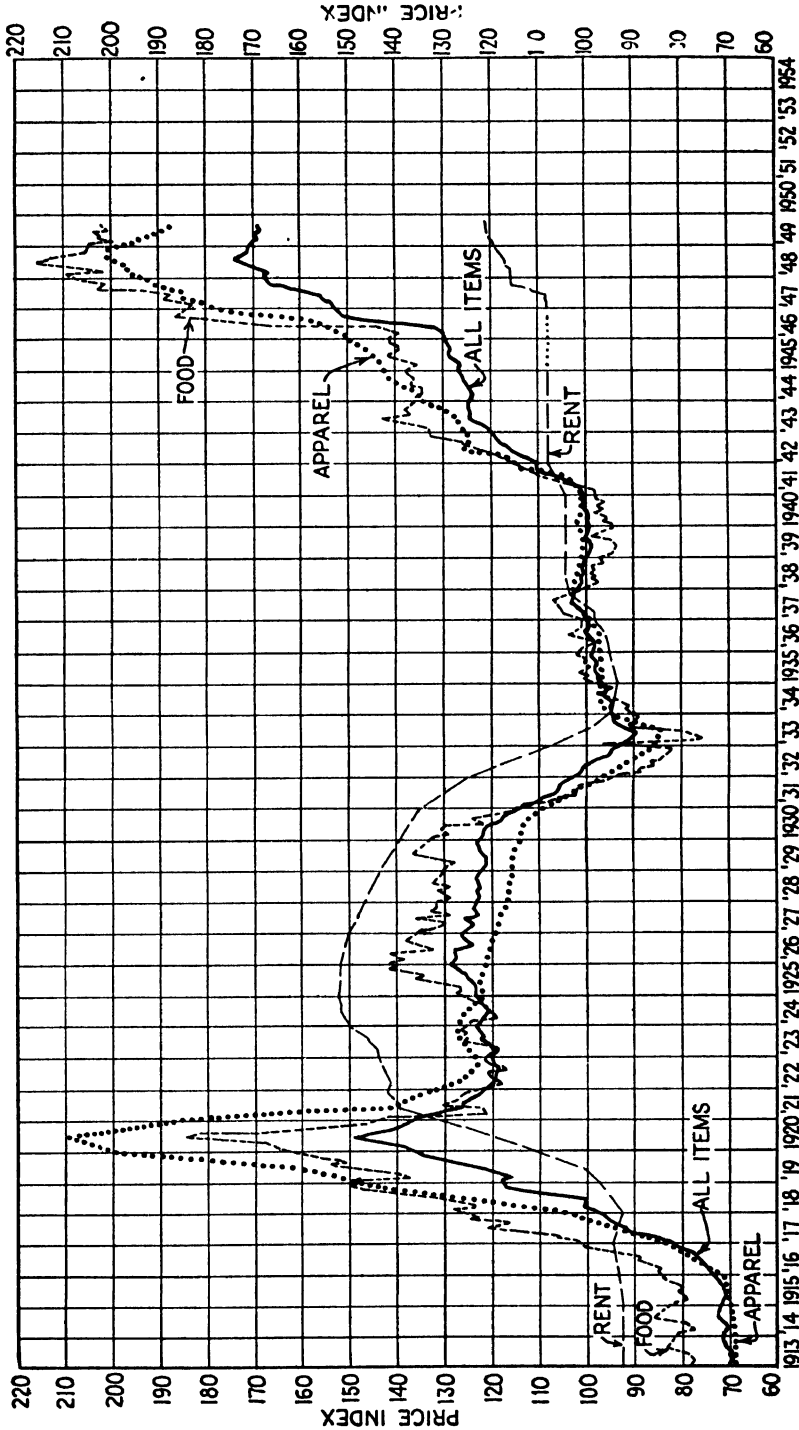
The most widely used index of retail prices is the official Consumers' Price Index for Moderate-income Families in Large Cities, compiled by the U.S. Bureau of Labor Statistics and shown in Chart 3. It is available by months since 1913 in six subdivisions as follows: food; apparel; rent; fuel, electricity, and ice; housefurnishings; and miscellaneous. The mathematical method is the same as that of the illustration above, *i.e.*, the weighted aggregate. In 1949 the sample included 342 different prices at retail in each of 34 large cities. The base period is 1935-1939 = 100, and price changes are expressed in relation to this base.

The period shown on Chart 3 is a dynamic one, including both world wars and the intervening great depression of the 1930's. Retail prices more than doubled between 1914 and 1920, and again between 1933 and 1948. The intervening decline from 1920 to 1933 was about 40 per cent. Another noteworthy feature is the tendency for price disparities to develop during periods of rapid change. Food and apparel prices show the greatest sensitivity, rising well above the other groups after both world wars and falling below the others at the bottom of the depression.

Several authorities in the field of money, including the late Lord J. M. Keynes, prefer to think of the value of money in terms of retail prices. Much, indeed, may be said for this point of view. The welfare of the final consumer stands as the only ultimate objective of the economic system. This welfare in turn depends upon the relation between the money incomes of consumers and the prices at retail of consumption goods and services. There seems to be good reason, therefore, to regard retail prices as basic in a deeper sense than other elements of the price system.

But despite all of this, one is not at all justified in neglecting the various other values of money reflected in the price structure. The streams of consumer money income find their sources in production,

CHART 3. CONSUMERS' PRICES, 1913-1949 (1935-1939 = 100)



SOURCE: U.S. Bureau of Labor Statistics. Monthly data for all "all items" and "food," 1913-1949, and for all series since September, 1940. Annual figures for "clothing" and "rent," 1913-1918; semi-annual, 1919-1934; quarterly, 1935-September, 1940.

which proceeds smoothly when the price system is in balance. But when price disparities develop, production is disorganized, and consumer income also suffers by unemployment and sometimes by reductions in wages and other income.

FORCES GOVERNING THE PRICE LEVEL

While only a preliminary discussion of the forces governing the price level can be undertaken at this point, it is desirable to give some attention to them. These concepts and methods of thought are useful tools which can profitably be employed as we proceed with study of the monetary and banking system.

The Equation of Exchange. The most useful device to summarize these forces is the equation of exchange: $MV = PT$. M refers to the average stock of payment money in the country during a given period, say one year. It includes currency outside banks and the Treasury and deposit money (checking accounts). Reserve money is not included since it is not used directly in making payments. The term V refers to the velocity of circulation of the average stock of money (M) during the period. That is to say, it represents the number of times that M turns over in making the total money payments (MV). P is the average price at which the physical units of things are sold—the general price level which has engaged our attention in preceding sections of this chapter. The last term of the equation, T , is usually spoken of as the volume of trade. It refers to the *physical units* of things bought and paid for during the period—bushels of corn, tons of coal, hours of labor, shares of stock, services, and so on.

The equation itself tells us nothing whatever about the direction of causation of the forces at work, and hence does not represent any particular theory of price-level determination. A theory must be breathed into it by interpretation. As a rule, the price level (P) is a passive resultant of the interacting forces lying behind M , V , and T . A flow of money being spent (MV) meets and pays for a counterflow of physical things (T) being offered and sold at an average price (P).

The usefulness of the equation is chiefly as a guide to analysis, so that one will not omit an important force nor forget the direction of its pull. It thus represents a mental approach to the problem. Since complete information is lacking, especially on the volume of trade and on the velocity of money, an accurate statistical check on the equation is impossible at present. However, there are sufficient data available to make a rough check and to analyze the influence of each of the factors in relation to price-level changes.

The Income Equation. Total money payments (MV) are composed of (1) income payments and (2) nonincome payments. Income payments are money transactions which represent either payments to income receivers or payments out of these received incomes for consumption or investment purposes. Incomes are received mainly as wages, salaries, interest, rent, and profits. Nonincome payments refer to intermediate money transactions—interbusiness, financial, and speculative. While they are many times larger than income payments, the latter are more significant in that they represent the final goal of economic activities. The amount of money income in relation to the height of consumers' prices measures the real standard of living.

This special significance of income payments has led many economists, especially since the late 1920's, to couch analysis almost entirely in terms of them, with little or no attention to nonincome payments. With this approach, the income transactions equation may be stated as follows:

$$M_i V_i = P_i T_i \quad \text{or} \quad P_i = \frac{M_i V_i}{T_i}$$

where M_i represents money held to make income payments, V_i is the velocity of M_i , T_i is the *physical* volume of goods and services bought for consumption or investment, and P_i is the average price of T_i .

Much progress has been made in recent years in developing the theoretical concepts of national income and in assembling the data necessary to make estimates of it. The topic is rather complicated so that full discussion must be postponed.¹ However, it is desirable to introduce two concepts at this point, *viz.*, (1) national income and (2) gross national product or expenditure.

National income is the total net earnings which accrue to labor, capital, and enterprise in the forms of wages and salaries, interest, rent, and profits. In 1948, total national income as reported by the U.S. Department of Commerce was \$224.4 billion, of which \$139.4 billion was compensation of employees, \$72.6 billion was net income or profit of business enterprises, \$7.4 billion was rental income of persons, and \$4.9 billion was net interest income.²

Gross national product or expenditure is the market value of the goods and services produced before deduction of depreciation and other allowances for consumption of durable capital goods. In 1948, it amounted to \$254.9 billion, distributed as follows: personal consumption expenditures, \$177.7 billion; gross private domestic investment, \$39.7

¹ See Chapter XXV.

² *Federal Reserve Bulletin*, May, 1949, p. 572.

billion; net foreign investment, \$1.5 billion; and government purchases of goods and services, \$36.0 billion.²

Since all goods and services produced are for either consumption or investment purposes, it follows that $M; V; = C + I$, where C stands for consumption expenditures and I for investment. Moreover, since all money income is either spent on consumption or is saved, $M; V; = C + S$, where S refers to savings. Then from this it follows that $I = S$.

These equations may be adapted to the concepts of either national income or gross national product. When the former is indicated, they may be used as given just above. If gross national product (GNP) is indicated, they may be written:

$$(M;V;)_g = \text{GNP} = C + I_g = C + S_g$$

where I_g and S_g refer, respectively, to gross investment and gross savings.

While the national income approach to analysis is almost indispensable for many purposes, its limitations should also be borne in mind. In disregarding nonincome transactions, which are between 7 and 12 times as large as income payments, very significant influences are often overlooked. This is the main reason why it is preferable to state the general theory of the price level in terms of the more inclusive total-money-transactions equation of exchange. Prices are affected by changes in nonincome transactions as well as by changes in income transactions.

MEANING OF INFLATION AND DEFLATION

Inflation. The term "inflation" is a vague one which is used with a variety of meanings. The most common popular usage refers simply to rising commodity prices, sometimes with the implication that the reason is the expansion of money. Economists are likely to mean the *conditions* which may lead to rising prices, rather than rising prices themselves. That is, they may refer to an increase of gold or other reserves of the monetary system, to an increase in the amount of payment money, or to a scarcity of goods as "inflationary." Emphasis would be on the *potential*, rather than the actual rise in prices which may never take place, owing to offsetting influences.

Perhaps a more definite and useful meaning of the term is an excess of demand for goods and services in general over supply at existing prices. Under a free market this leads to rising prices until demand and supply are equated. The condition of inflation may still exist, however, when prices are held down by government controls. In this event, rationing

² *Ibid.*, p. 573.

of scarce goods is necessary in order to secure fair distribution, since the price system no longer performs its usual rationing function.

Deflation. "Deflation" is the opposite of inflation. Popularly, it means falling prices, while to most economists it means the *conditions* leading to falling prices. These conditions may well be thought of as an excess of supply of goods in general over demand at existing prices. In a free market this situation results in a decline of prices until demand and supply are equated. But if monopoly prevails, prices may be artificially maintained by holding goods and services off the market.

Review Questions

1. Define the value of money. Does the value of money remain constant over a period of time? Explain.
2. Discuss the relationship between the value of money and prices.
3. Differentiate between the price level and the price structure.
4. Define each of the following: demand schedule, supply schedule, realized market price, and aggregate demand schedule.
5. "Realized prices are a present link between the past and the future." Explain.
6. Point out the main features of the price structure.
7. Discuss (a) the limitations and (b) the usefulness of the concept of a general price level.
8. What is a price index number? Give an illustration.
9. Interpret the main changes in wholesale prices as shown in Charts 1 and 2.
10. Why do raw material prices exhibit greater sensitivity and move through a wider range than finished goods prices?
11. What aspects of retail prices are brought out by Chart 3?
12. Are we justified in thinking of the value of money only in terms of retail prices? Explain.
13. State the equation of exchange, and define the forces which it summarizes.
14. What forces as a rule govern the general price level? Explain.
15. Discuss the usefulness of the equation of exchange.
16. Compare income payments and nonincome payments.
17. Differentiate between the over-all equation of exchange and the income-transactions equation. What are the limitations of the latter equation?
18. Define (a) national income and (b) gross national product.
19. Prove that total income transactions equals the sum of consumption expenditures and investment expenditures.
20. Contrast the economists' use of the term "inflation" with that of the layman.
21. Is "an excess of supply of goods in general at existing prices" characteristic of inflationary or deflationary periods? Explain.

Advanced Questions

1. Is it possible for a decline in prices to cause a further drop in prices? Explain.
2. Discuss the relative importance of the forces which govern the price level.

3. "According to the equation of exchange, if the stock of payment money is doubled, the general price level will also be doubled." Do you agree? Why or why not?

4. Why was the cost of living (consumers' prices) at midyear 1949 about 70 per cent above the prewar period 1935-1939? Explain.

5. Bring Charts 1, 2, and 3 up to date, and interpret the recent changes which they bring out.

6. Prepare a table presenting the following items for a recent date compared with the corresponding date for the previous year: (a) Index of Wholesale Prices, including main subdivisions (U.S. Bureau of Labor Statistics); (b) Consumers' Price Index for Moderate-income Families in Large Cities, including main subdivisions (U.S. BLS); (c) index of common stock prices, including main subdivisions; (d) Index of bond prices; and (e) actual spot prices of two staple raw materials. (SOURCES: *Federal Reserve Bulletin*; *Survey of Current Business*; *Standard & Poor's Corporation*; daily financial page of a leading newspaper.)

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CHAPTER IV

EFFECTS OF PRICE-LEVEL CHANGES

Material changes in the price level seriously limit the extent to which basic economic objectives can be realized. That is, the disturbances to business that spring from such changes prevent full production, stable employment, and equitable distribution of income. There is nothing sacred about a particular price level, except that its existence for a considerable period makes it the basis of a multitude of money contracts and other economic relationships. As soon as this happens there arises a real public interest in preventing any marked departure from that level. For such a change necessarily involves a violation in greater or less degree of existing contracts and arrangements. Revisions and readjustments to a new level require a decade or more, and in the meantime the economic system is thrown seriously out of balance.

Studies of periods of marked price changes enable us to trace the typical effects on various classes of the community and also on the whole economy. It is with these concrete effects that the present chapter is concerned.

THE INEQUALITY OF PRICE CHANGES

One of the worst aspects of a marked change in the price level is the great disturbance to the price structure which is associated with it. Some prices and price groups, such as raw materials, are very sensitive to change while others, such as public utility rates, are more or less rigid. Other prices fall between these two extremes in their responses. This dispersion of price relationships reflects deeper causes, but it also assumes a casual role in bringing about economic disorganization. Not only is normal production disturbed, but large shifts in the distribution of real income take place. The people whose incomes are derived from commodities that have a wide range of fluctuation, for example, farm products and other raw materials, experience unwarranted prosperity when prices rise sharply and undue hardship when prices decline. At the same time the people whose incomes arise from goods that have rigid prices suffer when prices rise and may gain when prices fall.

An example from the war and postwar inflation will aid in visualizing these disparities in price relationships. Between 1939 and January,

1948, the prices of farm products in the United States rose 205 per cent and of raw materials 162 per cent. During the same period the price of electricity actually declined 15 per cent, and the prices of manufactured products as a whole rose 96 per cent.¹ In the consumers' field, food prices rose 120 per cent while rent rose only 11 per cent.²

If all prices rose and fell at the same rate the widespread disturbances just described would not occur, since real economic relationships would not be altered. But such is not in fact the case. Moreover, even if prices changed at the same rate, there would still remain the disturbances growing out of long-term money obligations and other long-term contracts fixed in money terms.

At this point it is desirable to consider the effect of changes in the value of money upon those who receive wages, interest, and profits. The effect of price changes upon those receiving rent, if the rent is based upon a long-time contract, is practically the same as upon those receiving interest. Hence, what is said about the latter group also applies to those receiving long-term rents.

EFFECTS ON WAGES

Wages are the price paid for labor. They are, therefore, part and parcel of the whole price system, and any general price disturbance is bound to influence the price paid for labor. But prices move at unequal rates. Wholesale prices, largely because of the better organization of the wholesale markets, advance first and generally more rapidly than any other prices. The price paid for labor may not advance so rapidly because the labor market is imperfectly organized. In fact, there are hundreds of separate labor markets in the United States rather loosely joined together, since laborers may move from one market to another.

The great majority of people receive their income in the form of money wages. In 1939, employees in the United States received wages and salaries of \$47.8 billion and in 1948 they received \$139.4 billion. In both years this represented just under two-thirds of the entire national income.³ The total labor force in March, 1949, numbered 62.3 million out of a total population, fourteen years of age and over, of 109.3 million.⁴ Thus the effect of price changes on wages is a question of large practical importance.

Over periods of cyclical price increase, labor as a group gains in real income. This is in part because wage rates rise more rapidly than the

¹ Based on the wholesale price indexes of the U.S. Bureau of Labor Statistics.

² Consumers' Price Index of the U.S. Bureau of Labor Statistics.

³ As estimated by the U.S. Department of Commerce.

⁴ *Federal Reserve Bulletin*, May, 1949, p. 564.

cost of living but it is more a result of the rise of employment during such periods. For example, between 1914 and 1920—when the cost of living doubled—the average worker in the labor force enjoyed an increase in real income of 15 per cent. The average *employed* worker, however, had a real increase of less than 4 per cent. In the most recent period of rising prices, 1939–1946, the average worker in the labor force experienced a 58 per cent increase in real income, while the one with a full-time job throughout the period had a 28 per cent rise.¹ It should be pointed out, however, that these are over-all figures comparing the situation at the beginning and the end of the periods. The result is not the same month by month along the way. Also, the various sectors of the labor group fare differently. The money wages of unorganized laborers, white-collar workers, and professional classes lag behind the rise in the cost of living, so that they experience a decline in real income during the dynamic phase of the period. On the other hand, the aggressive policies of organized labor since 1933 have eliminated the lag in wage rates for this group and have at times pushed union wages up ahead of consumers' prices.

When prices decline sharply, labor as a group suffers a decline in real income as a consequence of the associated decrease of employment. Between 1929 and 1933 the drop in real income of the average worker in the labor force was 48 per cent. The average employed worker, however, was slightly better off than before, since his wage rate declined 1 per cent less than the cost of living.² But behind these over-all figures there are wide variations in the experience of different elements of the labor force. Unionized workers and salaried classes suffer less from decreases in money wages than do unorganized laborers. Also, workers in the nondurable goods industries are less likely to lose their jobs than are those in the durable goods field. For example, during the same period, employment in the former field declined 30 per cent compared with 58 per cent in the latter.³

EFFECTS ON PROFITS

Profits during Rising Prices. The net profit of business shows a marked increase when prices are rising rapidly. For example, between 1939 and 1948, net corporate profits in the United States increased from

¹ Based on a study by Stanley Lebergott, "Earnings of Nonfarm Employees in the U.S., 1890–1946," *Journal of the American Statistical Association*, March, 1948, pp. 74–93.

² *Ibid.*

³ Based on indexes of factory employment of U.S. Bureau of Labor Statistics.

\$5.7 billion to \$22.7 billion, or by 298 per cent.¹ For this there are several reasons. First, the rise in prices itself contributes to the amount of profit. The money scale of operations is higher, so that net profit would rise even with the same physical volume and the same percentage margin on each unit. Second, the physical volume of business usually rises materially during such a period. Net profit accumulates rapidly after the break-even point is passed. Fixed and near-fixed costs are spread over a larger number of units of output. Interest on borrowed capital, depreciation charges on plant and equipment, and rental payments are the most important costs of this nature. Labor costs used to come in this category but the wage lag has been eliminated in the average concern by the aggressive tactics of union labor. Third, the appreciation of inventory makes a substantial contribution to net profit. The U.S. Department of Commerce estimates that this element of profit was \$5.7 billion in 1947 out of total net profits of \$23.5 billion—about one-fourth. Last, the percentage margin of net profit per physical unit of sales rises. A sellers' market usually exists, and competition among concerns is less severe, both of which encourage a wider margin.

Net profit rises not only in dollars when prices rise but also in relation to national income, net worth, and sales. Corporate profits rose from 2 per cent of national income in 1938 to 10.1 per cent in 1948.² Profit on net worth of leading corporations rose from 3.7 per cent in 1938 to 14 per cent in 1948, and profit on sales rose from 4 to 7.3 per cent.³

It should be pointed out, however, that the foregoing measures of the growth of net profits during periods of increasing prices give a misleading overstatement of their real increase. The amount of profit is illusory for two reasons. First, it includes a large element of appreciation in inventory. This is a transitory element which is not present when prices are stable and which reduces profits when prices decline. Second, depreciation charges are based on the original cost of fixed capital by traditional accounting procedure. This means that the company will have charged as expense only one-half of replacement cost if construction costs have doubled. Similarly, the rise in profit on net worth is based on original cost values. This percentage would not rise so rapidly if replacement cost values were used in determining the amount of net worth.

¹ Profits after taxes but before inventory valuation adjustment, U.S. Department of Commerce.

² U.S. Department of Commerce estimates.

³ *The National City Bank of New York Monthly Letter*, April, 1948, pp. 44-46; April, 1949, p. 40.

Furthermore, just as money wages must be deflated by a consumers' price index to determine real wages, so net profit must be deflated to measure real profits. The rise in dollar profits is thus much greater than that of real profits.

Profits during Declining Prices. If business profits show a marked increase during periods of rising prices, they shrink as rapidly when prices fall. The money scale of operations is lower, physical volume contracts, fixed costs remain high, inventories depreciate, and the net profit margin per physical unit is reduced. Moreover, the usual measures of net profit overstate the decline in real profit just as they overstate the increase during rising prices.

Profits are by far the most widely fluctuating share of the national income. In prosperous years they become substantial, but in depression periods they shrink quickly and may turn into heavy losses. For example, net profits of corporations in the United States dropped from \$7.9 billion in 1929 to a loss of \$4.4 billion in 1932.¹ Wide variations of course exist in different industries and enterprises. Some companies and industries show profits in the worst years, and many companies suffer losses in the years of greatest general prosperity.

The exceptional situation of public service corporations requires separate comment at this point, since their profits often move counter to those of other business firms during periods of rapid price change. This is a result of the fact that their selling prices (rates) are set by state or Federal commissions which have shown great inertia in recognizing new conditions. When prices rise, labor, fuel, supplies, and other costs increase, but the commissions permit higher rates, if at all, only after a considerable delay. As a consequence profits are limited and sometimes decline while business profits generally are expanding. On the other hand, when prices decline, their costs likewise fall but reductions in rates may be delayed. This usually causes profits to rise in the early stages of a cyclical downturn of general prices after profits of other concerns have started downward. But if the general price decline is severe, profits of public utilities also move downward as the demand for their services declines and as rates are finally lowered.

EFFECTS ON THE CREDITOR CLASS

When prices rise, the creditor class suffers an injustice in proportion to whatever rise takes place. This may well be illustrated by the case of Mr. A who bought a United States savings bond for \$75 in June, 1939. According to contract the Treasury redeemed it at face value

¹ U.S. Department of Commerce estimates.

(\$100) in June, 1949. But in the interval prices of consumers' goods rose about 70 per cent, so that the \$100 was worth only $100/170$ as much (\$58.82) in terms of 1939 dollars. Thus, he realized no interest on the investment and in addition he lost \$16.18 of the principal. The "safest investment in the world" turned out under these conditions to be one of the poorest and most speculative.

The majority of citizens, being owners of savings bonds or other fixed-money claims, suffered injustice along with Mr. A during this period. All owners of government or corporate obligations, time and savings bank deposits, demand deposits, currency, annuities, long-term rental contracts, pension claims, and life insurance claims were adversely affected. Some appreciation of the extent of this problem is given by the approximate amounts of these claims at midyear, 1949: (1) Federal securities outstanding, \$252 billion; (2) obligations of states and other political subdivisions, \$24 billion; (3) private debt of individuals and nonfinancial businesses, \$235 billion; (4) time and savings deposits, \$58 billion, represented by more than 30 million accounts; (6) demand deposits and currency, \$110 billion; (7) and life insurance in force, \$220 billion, represented by more than 200 million policies. The profound need of public policies to prevent wide changes in the value of the dollar becomes evident when one contemplates this vast structure of money claims.

The question may now be raised: If creditors undergo such serious injustice during rising prices, do they gain correspondingly during a period of falling prices. The answer depends on the rate at which the decline takes place. If it is a gradual downtrend that does not create serious maladjustments, the creditor enjoys the increased purchasing power of both income and principal. In the early stage of a cyclical price decline, he also benefits for the same reason. But if the decline is sharp and prolonged, creditors as a class suffer along with others. The decline in national income and net profits then results in widespread defaults of both interest and principal.

EFFECTS ON DEBTORS

The position of debtors is in general antithetical to that of creditors during periods of rapid price changes. The copper mining concern that borrows \$10 million to construct a new smelting plant can pay interest and principal with only half as many tons when the price of copper doubles. On the other hand, if the price of copper is halved it will require twice as many tons. Moreover, the lag in costs may result in such heavy losses that the company may fail and the owners may lose their entire equity.

It should be noted, however, that the interests of debtors and creditors are not wholly in opposition. Both are basically better off when the whole economy under which they live is in a healthy condition. A rapid rise of prices may temporarily be favorable to debtors, but if it generates maladjustments that bring on a depression, they eventually lose through defaults on obligations more than they originally gained. Thus the long-range interest of both debtors and creditors is in a relatively stable price level which promotes the greatest welfare for all.

Financial corporations, being debtors and creditors at the same time, are hedged against the effects of price changes. Commercial banks, savings banks, life insurance companies, and other similarly situated institutions have both assets and liabilities in the form of claims to dollars. Hence, they are relatively free from concern over changes in the value of the dollar. Those who hold the fixed money claims against them are the ones who lose or gain. Of course, such corporations cannot be completely hedged. Rising and falling prices affect their income, expenses, and in some degree the value of their assets. Like all other groups in the community, their basic interests are best served by a relatively stable price level.

Review Questions

1. How do periods of rising prices affect people whose incomes are derived from commodities that have a wide range of price fluctuation?
2. If all prices changed at the same rate, would economic disturbances arising from the change be eliminated? Explain.
3. Over periods of cyclical price increase does labor as a group gain or lose in real income? What are the reasons for this gain or loss?
4. Would your answer to question three have been the same if you had been considering the various sectors of labor instead of labor as a group? Explain.
5. Discuss the reasons for the marked increase in the net profits of business when prices are rising.
6. Do net profits in real terms rise as rapidly as money profits during periods of cyclical increase in commodity prices? Explain.
7. Contrast the decline in dollar profits with the decline in real profits of business when prices are falling.
8. Why do the profits of public service corporations often move counter to those of other business firms during periods of rapid price change?
9. "When prices rise, the creditor class suffers an injustice in proportion to whatever rise takes place." Explain.
10. Describe the position of the creditor class during a period of falling prices.
11. With regard to price-level changes, are the interests of debtors and creditors wholly in opposition?
12. In what way do debtors lose during a period of falling prices?
13. Compare the effects of price-level changes on financial corporations with the effects on industrial enterprises.

Advanced Questions

1. Why is it that all prices do not rise and fall at the same rate?
2. What measures can be taken by the government to foster reasonable stability of the price level? Explain.
3. What measures to moderate fluctuations in the price level can be taken by (a) business management, (b) organized labor, (c) the farm bloc, and (d) consumers? Explain and appraise their effectiveness.
4. The cost of living in 1949 was about 70 per cent above the 1935-1939 level. Should government policy in 1949 have been designed to bring prices down to the prewar level? Discuss the issues.

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CHAPTER V

MONETARY STANDARDS

No generation since the beginning of the nineteenth century has escaped sharp controversy over the question of the monetary standard. In fact, the issue has been a fundamental one arising from time to time since the first emergence of markets and a price system. And now again in the postwar period the nations of the world find themselves groping for a monetary standard that promises to serve best their economic and national interests.

This naturally raises the question: What are the criteria of a good monetary standard? The basis for an answer is found in our final economic objectives. In terms of these, we may start with the following proposition: A good standard is one that produces a price system which promotes high-level production, stable employment, equitable distribution of the national income, and a rising standard of living. But these criteria are very general; more concrete guides are needed in practice. More specifically, the standard should (1) promote a relatively stable price level, (2) encourage steady foreign exchange rates, (3) be susceptible to international adoption, and (4) command a large degree of public confidence. This still leaves, however, a wide field for difference of opinion as to what standard in practice best meets the requirements of the particular time and place. Many believe in the gold standard, others in bimetallism, and still others in some variety of the managed paper standard.

MONOMETALLISM: THE GOLD STANDARD

Although the precious metals were used as money many centuries before the Christian Era, the gold standard as such has had legal recognition only since its adoption by Great Britain in 1816. For the preceding century, however, Britain had been effectively on a gold basis because silver, being undervalued, was scarcely coined at all. In the United States the legal basis for gold dates back only to 1879, when specie payments were resumed after the greenback (paper standard) period. But the effective gold basis began in 1834, when the gold-silver ratio in the bimetallic standard was changed so as to undervalue silver. Con-

gress apparently intended to keep both gold and silver in circulation at that time but failed to estimate accurately the market ratio between them. The new German Empire adopted the gold standard in 1871; the Scandinavian countries in 1872; Holland in 1873; France, Italy, and Belgium about 1874; Russia and Austria in 1892; and Japan in 1897. Thus, as the world's history goes, the formal gold basis is distinctly a modern institution.

The general features of a gold standard may be summarized as follows: First, the value of the currency dollar (monetary unit) must be exactly equated to the ultimate standard which is a fixed weight of gold bullion as defined by law. The usual method of achieving this equality at all times and places in the country is that of providing adequate facilities for the two-way conversion of domestic currency and gold. Given these facilities, the bankers and bullion dealers can be depended on to maintain this desired equality by their constant search for profits.

Second, no important restrictions may be placed on gold as a commercial raw material or on its flow back and forth between monetary and commercial uses. To do so is to interfere with the purchasing power of gold and with the value-equating process between currency and gold.

Third, no important restrictions may be imposed on the export of gold to other countries or on its import from them. This is essential in order to equate the domestic value of gold to its world value. A corollary to this point is that the international values (exchange rates) of the monetary units of all gold-standard countries will be fixed within a very narrow range of fluctuations.

Fourth, relatively free movements of goods, services, and investments among nations is a condition to the success of the gold standard. These movements are recorded in what is called the international balance of payments, and they are part and parcel of the adjustment processes governing world gold prices and the distribution of gold among nations.

Last, no permanent interference by a nation with the effect of gold imports or exports on its price system is consistent with the international gold standard. To the extent that this is done a natural adjusting process is defeated; a serious interference may eventually drive the country from its gold basis.

The foregoing features make clear the fact that the gold standard fits into a larger scheme of friendly cooperation among nations. It is a more or less automatic device tending to produce a closely integrated system of world prices, stable foreign exchange rates, and a high degree of economic internationalism. Under conditions of excessive nationalism and extensive government management in the international sphere, it is an incongruity with small chance of success.

There are three varieties of the gold standard, *viz.*, the gold-coin, the gold-bullion, and the gold-exchange types.

The Gold-coin Type. Before the First World War the practice of unlimited and usually gratuitous coinage of gold was universal in gold-standard countries. That is, the government stood ready to buy and coin all gold that was offered (unlimited or free coinage), usually without charge (gratuitous coinage) except for all or part of the actual coinage cost (brassage). The inconsistency of a government profit on coinage, known as seigniorage, was recognized and for the most part was respected. Also, as a rule no restrictions were imposed on melting coins into bullion. It was understood that this feature was necessary in order to prevent the value of coined gold pieces from falling below that of their gold-bullion content—a situation which actually developed in Great Britain during the First World War when free melting of coins was prohibited by law. On the other hand, unlimited coinage was essential to prevent the value of coined gold from rising above the bullion content—a thing which happened in Sweden during the First World War when gold coinage was suspended.

In the United States, for example, coined gold was made full legal tender and was recognized as standard money. Other types of currency, aside from gold certificates, usually were given only partial legal-tender power. As an example, the national bank notes were made receivable at par by all national banks and by the Treasury for all taxes and other public dues, except duties on imports. In the payment of other debts they were not a legal tender. Other types of currency, however, were made readily convertible into gold coin, either directly or indirectly. This was to ensure that the purchasing power of one type of dollar would be the same at all times and places as every other dollar. Hard experience had driven home an appreciation of the great inconvenience in trade of currencies at varying discounts from standard money. Deposit money was not made legal tender but was kept at par with standard money by requiring that the banks stand ready to redeem it on demand in lawful money.

The Gold-bullion Type. When the leading nations returned to gold after the First World War, most of them established the gold-bullion arrangement. That is, gold was no longer coined, but was held by the central bank or treasury in the form of bars as a reserve against credit moneys in circulation. The central bank agreed to buy and sell gold at a fixed price in terms of domestic paper currency. The Gold Standard Act of 1925 in Great Britain, for example, required the Bank of England to sell gold bars on demand at £3 17s. 10½*d.* per ounce and to buy gold at £3 17s. 9*d.* per ounce. However, since the minimum-size bar that

was to be sold contained about 400 ounces, the gold withdrawals from the bank were actually restricted to export and industrial purposes. The general public could not get gold for their Bank of England notes in small amounts.

The point should be emphasized that, in essentials, the gold-bullion standard is not different from the gold-coin basis; one may be as truly a gold standard as the other. The all-important requirement is a close coupling of the value of domestic currency to the world value of gold. This may be achieved without coining gold and without redeeming small amounts of the local currency. It is enough that the central bank buy gold freely at a fixed price and sell it at the same price in amounts convenient for the bankers and bullion dealers.

The Gold-exchange Type. The third variety of gold standard is the gold-exchange type which has been utilized mainly by nations whose economies are satellites of a major country which is on the gold standard proper. In the case of this standard there is no need for gold in the country. Instead, the gold stock of the major country may be utilized by fixing the price of foreign exchange on it. The central bank or treasury of the small country may then be directed to buy and sell claims on the foreign currency at a fixed price. As long as the local currency of the satellite is freely convertible into foreign exchange at the fixed price and foreign exchange is freely convertible into local currency at the same price, the value of the satellite's monetary unit is firmly tied to that of the major country. Thus, it is a gold standard once removed, or an indirect gold standard.

In order for the gold-exchange standard to work, the satellite must maintain a deposit balance of adequate size in banks of the major country, just as the latter must itself own a gold stock of adequate size for the ultimate monetary reserve. Also, the satellite must observe the basic rules of the gold standard. That is, it must follow domestic and international policies which permit the maintenance of its gold-money deposit account. This means that its imports of goods and services must not for a long period exceed its exports, since the foreign deposit account would thereby be depleted in settlement of the unfavorable balance. Such a situation might arise, for example, as a consequence of inflationary expansion of the local money with a resultant rise of prices.

Russia adopted the gold-exchange standard in 1892 when the government agreed to purchase and sell German marks at a fixed price in terms of rubles. Austria-Hungary set up a similar arrangement in the same year. In 1893, India linked the rupee to the British pound sterling, and in 1903 the Philippines tied their peso to the dollar. During the

period of monetary reconstruction following the First World War, a considerable extension of the gold-exchange standard occurred. Countries that adopted some form of it included Austria, Poland, Germany, Chile, Ecuador, Colombia, and Bolivia. But most countries were forced to give it up during the depression of the 1930's. Drifting or managed paper standards took its place.

The most important advantage of a gold-exchange standard is the stabilization of the price of gold-standard moneys in the smaller nations that would otherwise have to resort to a silver or paper standard. Such standards are associated with uncertain fluctuations of gold-exchange rates which constitute a serious obstacle to foreign trade.

A second advantage is the economy of such an arrangement. A small country may not be able to afford a sufficient gold stock to support a gold-bullion standard, but it may enjoy practically all the advantages of gold by keeping instead a reserve of foreign exchange. Most of this reserve can be invested in interest-bearing assets so that the cost of the system is held to a minimum. Thus, by this device the world's stock of monetary gold may be used with great economy, and the gold-standard area may be extended without increasing the need for monetary gold.

Another possible advantage of the gold-exchange basis is that it may reduce price fluctuations of certain small countries. This does not necessarily follow since the record of the gold standard has been far from satisfactory in this respect. In any event, their price levels are by this means tied to world gold prices which are likely to show greater stability than silver prices. Whether gold prices are more stable than a managed price level depends upon the quality of the management.

The main drawback of the gold-exchange basis is that it represents a refinement of the use of credit which at times becomes impracticable. When the world is torn apart by war or depression, losses may be suffered alike by the financial centers that hold the reserves and the gold-exchange-standard countries.

A part of the danger from war may be avoided by the selection of a friendly financial center for lodgment of reserve balances. For example, some of the South American countries link their currencies to the dollar and keep balances in New York City banks. But even then the economic disturbance from a war may lead to an embarrassing withdrawal of balances.

The best illustration of the hazards of such a standard during depressions is furnished by the world-wide monetary breakdown during the period 1931-1933. More than £400,000,000 of short-term balances were lodged in London in 1931, a large part of which represented gold-

exchange reserves of other countries. It was the panicky withdrawal of these balances that forced Great Britain to suspend the gold standard in September, 1931. At the same time, France and several other countries lost heavily from the depreciation of their remaining sterling balances.

The fact should also be emphasized that, even though a financial center holding these reserves is able to meet such a drain and thereby rebuild foreign confidence, the money market is seriously disturbed. Our loss of more than \$700 million of gold during September and October, 1931, is a case in point. The commercial banks had to fall back upon the Federal Reserve banks for more than \$1 billion of reserve credit. Money rates rose and the fire of depression was fanned by enforced liquidation.

It thus becomes clear that the practical application of the gold-exchange standard is subject to definite limitations under existing world conditions. These limits are largely set by the inability of mankind to settle disputes without resort to war or to prevent the recurrence of business depressions. Until real progress can be made along these basic lines, international cooperation in every field, including credit refinements, is lamentably restricted. Despite all this, there remains a definite field of usefulness for the gold-exchange standard. Its success is most likely when the smaller country is a political as well as an economic satellite of the country where the final gold reserve is maintained.

Automatic Corrective Forces. Under the traditional gold standard the price of a foreign gold-standard currency (the foreign exchange rate) in terms of domestic currency was limited in its fluctuations within a narrow band defined by the costs of importing and exporting gold. For example, under the old parity with Great Britain of £1 = \$4.866, the actual rate in New York could not rise above about \$4.882, or fall below \$4.841. A rate of \$4.882 covered the cost (including a small profit) of shipping a gold pound to London. Therefore, the offerings of sterling exchange by bankers at this rate would become practically unlimited. If their foreign balance became depleted, it could be rebuilt by shipping gold. At the same time, no banks with facilities for gold export would pay more than this figure for bills to replenish their foreign balances. Thus the combined influence of a nearly unlimited supply and a sharply reduced demand at the gold-export rate fixed a definite ceiling of fluctuation. On the other hand, a rate of \$4.841 covered the cost (including a small profit) of shipping a gold pound from London to New York City. Foreign exchange dealers in New York would buy all the sterling exchange offered at this rate since they could profitably import the gold to which it entitled them. This unlimited demand, combined with a mark-

edly reduced offering of bills at any lower rate, effectively set the lower limit.

With exchange rates relatively fixed under gold, international adjustments took place largely through the effect of gold movements on prices. As an example, assume that the gold standard prevails and that a more rapid expansion of money in Great Britain causes prices to rise somewhat relative to prices in other gold-standard countries. This would make Great Britain an expensive place in which to buy and an attractive place in which to sell, with the result that imports would exceed exports. The enlarged demand for foreign exchange would then drive rates up to the gold-export point where it would become profitable to ship gold. The loss of gold would deplete the cash reserves of British banks and as a result they would sooner or later contract the amount of their earning assets and deposits and raise their interest rates. The higher rates would in turn have a restraining influence on demands for credit. Faced with the high cost of credit and with curtailed money purchasing power, British consumers and business firms would then be unable or unwilling to buy the current output at existing high prices. Stocks of commodities would pile up and prices would fall, first in the sensitive raw material fields and later in other less sensitive sectors. At the same time the exported gold would have entered the bank reserves of other countries and for opposite reasons would have tended to create higher prices abroad. Thus, as a consequence of these developments, Great Britain would become a better place in which to buy and a poorer one in which to sell. Her exports would rise in relation to imports until the foreign exchange rate would drop below the point at which gold could profitably be shipped. With world price levels again in balance following the adjustment, equilibrium would prevail until new developments created another disturbance.

As a matter of fact, under the conditions that obtained in the century before the First World War, especially after about 1875, these automatic correctives operated with a surprising degree of effectiveness. But after the First World War the heritage of economic maladjustments, the rise of nationalism, the increase in government regulation of business, and the more active role of central banks—all combined to make the traditional gold standard unworkable. The automatic corrective forces were so generally subjected to interference that they no longer were able to bring about international economic equilibrium.

The Managed Gold Standard. The gold basis adopted after the First World War may well be designated a “managed gold standard” of the gold-bullion and gold-exchange types. There existed during this

period a far greater degree of international, central bank cooperation than in any previous era. Large loans were arranged on occasion, and agreements were reached in regard to discount-rate policy and open-market operations. To a large extent this vigorous and active new role of central bankers determined the direction of gold flows, and it also offset the operation of the automatic correctives making for international equilibrium. That is, the country losing gold often tried to insulate itself against the deflationary effects therefrom by having the central bank extend its reserve credit in an amount roughly equivalent to the gold loss, while the country receiving gold attempted by the opposite process to nullify the price effects of inflowing gold.

Many proposals for management of the gold standard have been made, among which should be mentioned that of the Genoa Monetary Conference of 1922. Very briefly summarized, this plan called for central bank cooperation with a view to stabilizing the world value of gold. If prices should start to rise, a restrictive credit policy would be followed; conversely, if prices should begin to fall, credit expansion would be encouraged. Thus, instead of currency units being tied to the value of gold, the latter would be tied to currency units of relatively steady purchasing power. The great advantage held out for the scheme was that it promised both stable prices and stable foreign exchanges. Its practical drawback was the fact that such a large measure of international cooperation was politically beyond attainment. In addition, the scheme was subject to the theoretical criticism that the expressed aim of price stability might at times be pursued at the sacrifice of the more basic goals of high-level production and business stability.

Appraisal of the Gold Standard. The chief merit of the gold standard lies in its encouragement to international economic cooperation. It is important that the world be on a common monetary basis with stable foreign exchanges. Otherwise, foreign trade and investment are seriously hindered, and there is always present a threat of one nation attempting to gain selfish trade advantage over the others through depreciation of its currency. This in turn necessarily leads to retaliatory steps by the other countries—competitive monetary depreciation, tariffs, quotas, exchange controls, and embargoes. Events since 1931 furnish an unfortunately large number of illustrations. Accentuated nationalism, intensified world poverty, and threats to peace are the inevitable consequences.

The gold standard unquestionably represents the simplest common monetary basis. The need for conscious international economic coopera-

tion is held to a minimum, and it commands widespread public confidence. This in turn makes adoption by all leading nations politically feasible.

An important drawback of the gold standard is to be found in the disturbingly wide swings of the price level that may take place under its operation. In the past, large changes in the value of gold have been caused by the variations of monetary demand more than by any other single influence. New discoveries and improved methods of mining have also caused material changes at times. The demand in the industrial arts has remained relatively steady.

This all suggests that the permanency of the gold-standard area, in order to minimize variations of the monetary demand for gold, is a first condition of stability of the value of gold. Such permanency would likely be realized in greater degree if all nations would enter into the arrangement. It also suggests that extreme fluctuations in gold value are more liable to occur if only one or a few nations comprise the gold area. That is to say, the feasibility of the gold standard is in direct proportion to the extent of its adoption. Hence, the abandonment of the gold basis by all other countries would provide an excellent reason for similar action by the United States; conversely, general adoption of the gold standard would furnish more plausible grounds for a like step on our part.

The only sensible argument for our maintenance of a qualified gold standard since 1934 has been to keep the gold torch burning with the hope that the flame might encourage sounder monetary policies abroad, greater freedom in international trade, and an eventual return to gold by the rest of the world. But the fuel for this torch has been costly indeed. Since January 30, 1934, when the dollar was devalued, the gold stock of the United States has risen from \$7 billion to \$24.3 billion in April, 1949. The bulk of this increase has been purchased with valuable American products at the higher mint price of \$35 per ounce. It has thus in a sense represented another form of lend-lease. Moreover, it has brought so large a part of the world's gold to the United States that the difficulties of a return to gold facing other countries may now well be unsurmountable. The marked expansion of government regulation in both the domestic and international fields raises grave doubts concerning the feasibility of gold as a monetary basis. Certainly the world in which we live is not in harmony with the automatic gold standard of the century preceding the First World War. Only the future can reveal whether under the auspices of the United Nations and the International Monetary Fund a general return to some form of managed gold standard will eventually take place.

Another serious objection to the gold standard is its undesirable rigidity. This feature has at times in the past thwarted realization of the more basic aims of maximum and stable production and of reasonable economic progress.

BIMETALLISM

Traditional bimetallism called for the definition of the monetary unit in terms of both gold and silver. By the Act of 1834, a dollar was defined as 23.22 grains of fine gold and as 371.25 grains of fine silver. This was a ratio of about 16 to 1 between the metals. A second essential was that the mint buy and coin all the silver and gold offered at the stated mint prices. It was also necessary that melting of coins for industrial purposes be freely allowed and that redemption of all currency in gold or silver coin be readily possible. A further requirement was that both gold and silver money be made full legal tender in payment of debts. While both gold and silver were traditionally coined, the essentials of the system do not actually require coinage of bullion any more than does a monometallic basis. It is sufficient for the central bank or treasury to buy and sell both metals freely at fixed prices in terms of paper currency.

Pros and Cons. The principal theoretical advantage urged for bimetallism is that it promises greater stability of the price level than does the gold standard. This expectation is based upon two assumptions: (1) that the average value of both metals is likely to fluctuate less than that of gold alone and (2) that the so-called "compensatory action" of the double standard will keep the market values of the two metals the same as the mint prices. The first assumption may perhaps be granted on the basis of the law of averages, although it should be noticed that on many occasions the fluctuations of the combined values would be wider than those of gold alone. This would be true whenever the values of the two metals were moving in the same direction with silver showing the greater rise or fall. In fact, since silver has shown less stability than gold in the past, one is led to question whether its net influence would actually make for greater stability.

With respect to the "compensatory action," the argument runs as follows: A departure of the world-market values of the two metals from the mint prices would be impossible because of a compensating adjustment of monetary demand. For example, if the mint ratio is 16 to 1, and if because of silver discoveries the market ratio becomes 17 to 1, the latter would automatically be forced back to the mint ratio of 16 to 1. This would tend to take place since no newly mined gold would be

sold to the mint and since an increased proportion of newly mined silver would flow to the mint. In addition, part of the monetary gold stock would be melted, and nonmonetary and foreign silver would be drawn into the monetary system. Thus, the simultaneous fall in the monetary demand for gold and the intensified demand for silver as money would soon drive the world-market ratio back to the mint-price ratio of 16 to 1.

But the force of this compensatory action would be sufficient to keep the market prices in line with the mint prices only under a condition of international adoption of bimetallism on a common basis, and if the change in the market relation of the two metals were not of a violent nature. In this, we find the telling catch regarding the practicability of bimetallism: It will not work in one country alone or in a few countries, and universal adoption on a common basis is beyond the realm of probability.

The explanation of why bimetallism will not work in one country alone rests upon the failure of the compensatory force to keep the market ratio identical with the mint ratio and upon the operation of the monetary principle known as "Gresham's law." The weakness of the compensatory force results from the relatively small part of world demand for the metals represented by the monetary system of one country. Thus, in the preceding example, the world-market ratio would probably not have been brought back to 16 to 1 by the displacement of gold by silver in this one country's monetary system. Perhaps after the export of all the country's monetary gold the world-market ratio might find equilibrium at, say, 16.5 to 1. Every bimetallic experiment in history has broken down shortly after its establishment as a consequence of a discrepancy between the world-market and domestic mint ratios of the metals.

As soon as such a discrepancy appears, Gresham's law is brought into play. Whenever one metal becomes more valuable in the market than at the mint, it tends to be displaced in the monetary system by the other metal which is overvalued by the Treasury. The latter metal alone is sold to the mint, and it soon becomes the effective standard, *i.e.*, monometallism results and bimetallism exists only as a legal myth.

The point should be emphasized that not only does legal bimetallism become monometallism in practice but the standard metal becomes the one showing the greater depreciation in the world bullion market. Such depreciation is most likely to result from a withdrawal of world monetary demand for one of the metals. Thus, the general adoption of the gold basis after 1871 was mainly responsible for a decline of the market-value ratio between silver and gold from 15.6 to 1 in 1870 to 34.7 to 1 in 1900. Under

such circumstances a lone bimetallic country absorbs the cast off and depreciated metal of the rest of the world. This in effect establishes monometallism of the least desirable sort, *i.e.*, upon the basis of the less stable metal, and the one rejected by the rest of the world. The chief advantage of international monometallism—stable foreign exchange rates—is therefore not realized.

Bimetallism was frequently urged as a remedy for a shortage of monetary gold in the periods 1873–1896 and 1931–1934. But if a real shortage does develop in the gold-standard area with an undesirable downward pressure on prices, a more feasible remedy is reduction of the weight of the gold unit by an appropriate amount. Or if monometallism is rejected, a well-managed paper standard is preferable to the erratic bimetallic basis.

Historical Development. The use of both gold and silver for monetary purposes dates back several centuries before the Christian Era. Coins were struck as early as 700 B.C. Silver, however, was used more extensively as money until the early part of the eighteenth century, when the leading nations adopted legal bimetallism. In Great Britain, Spain, and Portugal the mints overvalued gold and undervalued silver, so that the coinage was composed mostly of gold. France, on the other hand, overvalued silver with the result that silver money predominated.

Great Britain formally established the gold standard in 1816 but legal bimetallism prevailed elsewhere in Europe until 1871–1875, when the leading countries adopted gold. As late as 1865, France, Italy, Switzerland, and Belgium formed the Latin Monetary Union which provided for a common basis of bimetallism. This Union broke down in 1874 when silver fell in value owing largely to its demonetization elsewhere. The first monetary system of the United States, established in 1792, was bimetallic with a mint ratio of 15 to 1. Silver was overvalued and, therefore, became the effective standard. But in 1834, the mint ratio was changed to 16 to 1. This overvalued gold, so that gold became the real standard, and silver ceased to be taken to the mint. The law that ended the legal bimetallic era in the United States was passed in 1873, later dubbed by the silver interests as the “crime of ’73.”

A powerful agitation for reestablishment of bimetallism continued, however, until the silver interests were defeated in the presidential election of 1896. William Jennings Bryan, the leading proponent, was beaten by William McKinley who upheld gold. Little more was heard of the silver issue until the depression of the 1930's, when bimetallism was again strongly urged as a means of raising prices. Under the inflation Act of May, 1933, it became a legal possibility. President Roose-

vult was granted discretionary power to establish bimetallism, but he relied upon other inflationary methods and did not exercise this prerogative. Large purchases of silver were made by the Treasury as directed by the Silver Purchase Act of 1934. This Act, however, did not establish a legal basis for bimetallism in the traditional sense.

NONMETALLIC STANDARDS

Some form of metallism is not, however, the only possible monetary standard. Several nonmetallic standards have been urged from time to time, and at least two of them have been tried. A country may muddle along on a drifting paper basis, or it may set up some variety of the price-index standard in which price stability is made the objective. In addition, it is conceivable that a country may manage its money with certain other aims in mind, such as stable wage rates, stable business, or maximum output of industry.

The Drifting Paper Basis. Practically all actual experience with nonmetallic standards has been with the drifting paper basis. This standard, if it may be called such, has usually emerged from the monetary expansion of war finance. It has then been cast aside during the period of postwar reconstruction by a return to a metallic standard. The drifting standard might well be called a "government expenditures" basis. When it exists, monetary objectives are largely disregarded because of a great national emergency. The value of money is cut away from its metal mooring and *drifts* with the volume of the treasury deficit, which becomes the main determinant of the quantity of money.

One may find as many examples of the drifting paper standard as there have been major wars. The outstanding recent illustrations are the First and Second World Wars, in both of which the gold standard became a war casualty. During the First World War the currencies of Germany, Austria, and Russia depreciated until they were worthless. The note issue of the German Reichsbank rose from 5 billion marks at the end of 1914 to 496,507,424,772,000,000 marks at the end of 1923.¹ In 1924, the old notes were made convertible into new marks on the basis of one trillion to one. Italy and France were able to check the depreciation of their currencies, so that they finally returned to gold with the lira at about one-fourth and the franc at about one-fifth of their former gold value.

There was only a short interval between the wars—1925 to 1931—when the gold basis prevailed. Great Britain and the sterling area

¹ J. P. Young, *European Currency and Finance* (Washington, Government Printing Office, 1925), Vol. I, pp. 526-529.

returned to it in the former year but were forced to abandon gold again in September, 1931, as the great depression deepened. Since that time the drifting paper basis has prevailed (to early 1949) with only the United States and Switzerland standing as islands of gold surrounded by oceans of paper. The Second World War only magnified manyfold the monetary chaos which existed at the time of its outbreak in 1939. Generally speaking, the inflationary events of the First World War repeated themselves, although on a wider scale. The worst inflation occurred in Eastern Europe and in China. As illustrations, the money stock of Rumania rose from 62 billion lei in 1939 to 43,749 billion in July, 1947, just prior to the exchange of new currency for old, and consumers' prices rose 4,819-fold; and wholesale prices in China rose 6,560,747-fold between 1939 and October, 1948.¹

Other good illustrations in the United States may be drawn from both the Revolutionary War and the Civil War. The notes issued by the Continental Congress were overissued so greatly that they became worthless; this gave rise to the classic phrase, "not worth a continental." The Confederate currency issued during the Civil War likewise lost all its value. In the North the irredeemable greenbacks depreciated about 65 per cent in terms of gold in 1864 but they were later made redeemable in gold at par in 1879.

There is an unfortunate popular tendency to identify all nonmetallic standards with the drifting paper basis. All the untold hardships of extreme currency depreciation are laid upon the nonmetallic doorstep. It is assumed that an inevitable consequence of a nonmetallic basis is violent inflation. Stated somewhat differently, the paper standard is often charged with much of the economic loss and injustice that should actually be attributed to the excesses of war finance and the ravages of war in general. Propaganda of this kind only serves to becloud monetary issues and to retard monetary progress. It leads to an undeserved glorification of the metallic basis and to unjustified fears of a nonmetallic standard.

As a matter of fact, a nonmetallic standard is much better adapted to intelligent management than is a metallic standard. Indeed, when the time for substantial monetary refinements arrives, some form of non-metallic standard is likely to prevail. Nor does the latter basis inevitably lead to inflation, as several experiences of history attest. For

¹ *United Nations Monthly Bulletin of Statistics*, June, 1948; January, February, 1949; old lei were partly exchanged for new lei at the rate of 20,000 to 1 beginning in August, 1947.

example, during the irredeemable greenback period, prices fell 36 per cent between 1864 and 1875, when the Resumption Act was passed.¹ Again, wholesale commodity prices in Italy declined 37 per cent between 1925 and the end of 1927, when the gold standard was resumed. And similarly, prices in France declined 27 per cent between 1926 and the date of return to gold early in 1928.² In all three of these cases, the drop in prices was chiefly a consequence of deflationary monetary and fiscal policies of the government. Thus, not only is the inevitability of inflation on a nonmetallic basis a popular fallacy, but deflation is readily possible, and has occurred on that basis. What occurs becomes a question of monetary policy and management. This leads to a consideration of those nonmetallic standards which, unlike the drifting basis, pursue some definite objective.

The Stable-price-level Standard. The stable-price-level standard refers to those plans for monetary reform which have as their objective the stabilization of the commodity price level, or, what is the same thing, the prevention of variations in the purchasing power of money over goods. While such plans differ in details and methods, all rely on an index of prices to guide monetary policy. For this reason it may also be called a "price-index" standard. If the index should rise above the base-period level of 100, various deflationary steps would be taken to bring it back. Such steps would include direct reduction in the volume of ultimate monetary reserves; reduction in the reserves of commercial banks through sales of securities by the central bank and by higher central bank rediscount rates, increased legal reserve requirements for commercial banks, and contraction of deposits by retirement of bank-held government securities. Thus, they all have the common aim of producing lower prices by a contraction in the stock of money or in its velocity.

On the other hand, if the guiding price index should fall below the base-period level of 100, the foregoing steps would be reversed in order to expand the money stock, or its velocity, and thereby encourage higher prices.

Selection of a Price Index. A difficult problem in setting up a stable-price-level standard is the selection of a price index that accurately reflects changes in the value of money. If the purpose is to stabilize

¹ Measured by the Index of the General Price Level of the Federal Reserve Bank of New York.

² The price declines in Italy and France are calculated from the wholesale price indexes for those countries published in the *Federal Reserve Bulletin*.

the general price level, an index such as was published for many years by the Federal Reserve Bank of New York would be appropriate.¹ If it is desired to stabilize wholesale commodity prices, the official index of the U.S. Bureau of Labor Statistics would be indicated (see Chart 1, page 30). Or if the object is to secure stability of retail prices, the consumers' price index of the U.S. Bureau of Labor Statistics would doubtless be the best available (see Chart 3, page 33).

The difficulty of this problem, it should be observed, has two phases. The first phase involves a logical analysis of the value of money in its various senses and the selection of the concept that is basic from the standpoint of price stabilization. In other words, is it desirable to stabilize the general price level, the wholesale-commodity price level, the retail price level, or some other segment of the price structure? When this question is satisfactorily answered, one is faced with the second phase of the problem, accurate measurement. This is so important that a new price index may have to be designed for the purpose.

Inspection of the movements of leading price indexes reveals substantial differences. This precludes a "grab-bag" selection of a guiding index on the ground that they all move together. For example, between 1939 and March, 1949, the wholesale price index (BLS) rose 105 per cent and the consumers' price index rose 70 per cent.

Moreover, if it is concluded that retail prices should be stabilized, special difficulties of measurement arise. Finished goods bought by consumers undergo continuous changes in quality and make-up. The modern automobile, radio, refrigerator, and airplane—to mention a few examples—are only second cousins of products that bore the same names a few years ago. For this reason, unless a most careful adjustment is made, a retail price index is liable to reflect an inseparable combination of quality and price changes. Since there is no way to measure quality changes, save by intelligent estimates, it may be practicable to include in the index only the more standardized articles. But such a restriction of the sample makes it less representative of the family budget of expenditures. In addition to quality changes, the make-up of consumer purchases does not remain the same. New products are added and old products are dropped or bought in different proportions.

Appraisal of the Stable-price-level Standard. The principal argument for the stable-price-level standard is that it may eliminate the wide

¹ This index was based on a broad sample of all kinds of prices, including commodities at wholesale, retail prices, real estate values, security prices, and wages. It was discontinued just before the Second World War.

swings in prices that have occurred on a metallic basis. There is no doubt that the value of money has often been violently disturbed by the vagaries of monetary demand, new metal discoveries, and new methods of mining. In so far as these disturbances can be eliminated, this standard holds out an advantage over the traditional gold basis. But at the same time new disturbances may be created.

An attempt to stabilize the price level may go beyond such monetary factors, and it may seek as well to influence the production and demand for goods. Here it seems more likely that the effects would be injurious rather than constructive. If, for example, prices decline because increased productive efficiency has lowered costs, a good case can be made for allowing the decline to stand. A larger volume of consumption is made possible, and in addition a desirable equilibrium between costs and prices is left undisturbed. It may also be urged that the cause of economic justice is served by enabling the creditors and other fixed-income groups to receive their fair share of an enlarged national income.

On the other hand, if offsetting inflationary steps are taken, price relationships which were previously in balance may be disturbed. A larger share of the national income may be shunted to profits of enterprise which may in turn encourage overinvestment, speculation, and unsound boom conditions in general. Such conditions may then be followed by depression and unemployment. To put the matter differently, the expressed aim of price stability would in this case be pursued at the expense of the far more basic goal of business stability at a high level.

As with bimetallism, the price-index standard has the drawback of not lending itself readily to international adoption. Without wide adoption on a common basis, there are likely to be fluctuating foreign exchange rates which hamper international economic cooperation. There is also greater danger on this basis of competitive currency depreciation among nations than in the case of the international gold standard.

A final feature of this standard that weakens its case is the fact that in practice a stable price level is very difficult to attain in a free competitive economy. There is some reason to believe that a rise of prices may be checked with a fair degree of success. Powerful influences of restraint can be brought to bear by central banks and treasuries although their timely application is extremely difficult in a democracy. But a sharp cyclical decline of prices is less susceptible to control. The lessons of the depression of the 1930's indicate that no very immediate response can be expected from enlargement of bank reserves

and artificially low discount rates. When a major depression occurs, the downward pressure on prices is so great that offsetting monetary steps are likely to be swept before it. Moreover, if the depression and the accompanying lower level of prices persist for several years, it may in the end be unwise to return to the former price level. This is true if the price system reaches a balanced position at a lower level. Under these circumstances, further inflationary steps only make for the twin evils of price maladjustment and business instability.

The proponents of price stabilization answer that their program would eliminate business booms and depressions and that hence the criticism is irrelevant. But serious students of the business cycle find the causes of depressions to be far more complex and deep-seated. In their view such a simple remedy would be naïve indeed, and would be likely to create more problems than it would solve.

For the foregoing reasons, the conclusion seems clear that pursuit of the price-stability objective alone is unwise because it would frequently conflict with the more basic aims of the economy cited at the beginning of this chapter. Nevertheless, in so far as price stability serves these ends, it should be regarded as a legitimate goal. It should be one of the guiding factors, but by no means the only criterion, of monetary policy.

The Labor Standard. Another possible standard which economists have suggested from time to time since the early nineteenth century is the labor standard. While no country has ever expressly adopted this basis, an understanding of its general nature is desirable. The guiding principle is the stabilization of money wage rates, *i.e.*, the purchasing power of the dollar over labor services, or the price of labor. In practice, an official wage-rate index would become the monetary guide, just as an official commodity price index would show the way under the stable-price-level standard. Such an index would measure the money price (wage rate) of a composite unit of labor, including all grades of labor throughout the country.

The advantage urged for this basis is that the pain-cost of labor itself is a fundamental factor which remains relatively more constant from generation to generation than the products of labor. Hence, the constancy of the real purchasing power of the monetary unit can best be ensured by equating it to a unit of labor. But nevertheless, there are grounds for grave doubts concerning the practicability of this proposal. First, accurate measurement by means of an index would present many problems, some of which would have to be settled arbitrarily. For instance, would the hourly, daily, weekly, monthly, or annual money-

wage rates be selected? A substantial difference in results would emerge as the hours of labor change over periods of time. Second, such a standard would probably crowd aside the more basic objectives of the economy just as would the price-index basis. As an illustration, this standard would necessarily mean a declining commodity price level in a progressive economy in which the productivity of labor increases. A decline of prices at this rate might well prove to be a serious obstacle to enterprise with the result that the real income (standard of living) would be sacrificed. Third, the wage level would be equally as difficult to stabilize in practice as the price level. Last, this standard would have little chance of international adoption on a common basis. As a consequence, fluctuating foreign exchange rates would be an ever-present obstacle to international trade and cooperation.

THE BASIC OBJECTIVES

The foregoing canvass of metallic and nonmetallic standards brings us back again to the basic criteria, *viz.*, high-level production, stable employment, equitable distribution of the national income, and a rising standard of living. Taken together with proper blending these form an amalgam which may be called "maximum economic welfare." This means the highest possible welfare for the greatest number over a long-term period, a goal which should stand as the ultimate guide in all monetary questions as well as in other economic policies. Whatever specific standard is adopted, the accompanying price system should be consistent with maximum economic welfare. Otherwise, the standard fails of its final purpose and should be discarded in favor of one that promises a more acceptable performance. The standard should not be regarded as the hub around which the economic system revolves, even though it be recognized as one of the key spokes in the wheel.

If the traditional gold standard permits disturbingly wide swings in the price system, or produces a too-rapid downtrend or uptrend, it may defeat economic welfare to such an extent that a major change is called for. Such a change may take the form of central bank and treasury management, or it may mean the rejection of gold and adoption of a more promising basis. Similarly, if a price-index standard proves in practice to promote unhealthy boom conditions, or disturbing fluctuations in foreign exchange rates, a modification or change in the standard should be undertaken.

When the great complexity of the economic system and the several objectives which it should serve are recognized, the question of what monetary standard is best for a country in a given period is a very dif-

ficult one. The ideal, as already indicated, appears to be unmistakable. Monetary management should be such that the basic economic goals which reduce to maximum economic welfare are realized as nearly as is possible. This rules out the traditional gold basis because on occasion gold may become the master instead of the servant. It rules out stabilization of the price level because this is only one of several elements which are significant to the problem. A proper monetary policy can be evolved only by a continuing analysis of the whole economy. This analysis should include among other things the national income and its distribution, the level of production in relation to productive capacity, the stage of the business cycle, the price system, existing financial institutions, and international economic problems. This is a large order but nothing less can meet the requirement.

On the assumption of an able monetary authority, held in high regard alike by informed citizens and the political administration, the best criterion for monetary policy would be maximum economic welfare. Gold might well be assigned a subsidiary position as a tangible basis for international cooperation and the promotion of relatively stable foreign exchange rates, but it should definitely be held subordinate to the main purpose. The authority would keep the public informed by publishing its analyses and conclusions with respect to proper monetary policies. Congress would be fully informed by hearings, consultations, and recommendations. There is good reason to believe that this approach promises the best legislative and administrative action in the monetary field that can practically be attained in a political democracy. The imperative need for a thorough study of the proper organization of the Federal government with a view to realization of wise fiscal and monetary policies is discussed in Chapter XXXV.

Review Questions

1. Discuss the criteria by which the various possible monetary standards may be tested and judged.
2. Summarize the main features of a gold standard.
3. What are the distinguishing characteristics of (a) the gold-coin type of standard, (b) the gold-bullion type, and (c) the gold-exchange type?
4. Why is it essential under the gold-bullion standard that the central bank or treasury stand ready to buy and sell gold freely at a fixed price in terms of domestic payment money?
5. Explain why foreign exchange rates between gold-standard countries are stabilized within a narrow range of variation.
6. What is meant by a managed gold standard?
7. Discuss the merits and drawbacks of the gold standard.
8. Why is the feasibility of the gold standard closely related to the extent of its adoption by the nations of the world?

9. Describe the essential features of traditional bimetallism.
10. Explain the compensatory action of the bimetallic standard. Does this feature of bimetallism ensure greater stability of the price level than can be realized under the gold standard?
11. What is meant by the term "drifting paper standard"?
12. "A rise of prices is the inevitable result of departure from a gold or other commodity standard for the monetary system." Discuss this statement.
13. Define the stable-price-level standard. Why is it also called the price-index standard?
14. Discuss the problems involved in accurate measurement of changes in the price level, *i.e.*, in the development of an official price index.
15. Appraise the stable-price-level standard from the standpoint of its practicability as a basis for the monetary system of the United States.
16. What is meant by a labor standard for the monetary system?
17. Appraise the labor standard.

Advanced Questions

1. Develop the similarities of purpose between (a) free melting and free coinage under the gold-coin standard, (b) purchase and sale of gold by the government at a fixed price under the gold-bullion standard, and (c) purchase and sale of gold foreign exchange by the government at a fixed price under the gold-exchange standard.
2. Explain why the price of the British pound sterling could not fall below about \$4.84 under the former gold parity of £1 = \$4.866, which obtained before the First World War and between 1925 and 1931.
3. "The marked expansion of government regulation in both the domestic and international fields raises grave doubts concerning the feasibility of the old automatic gold standard." Develop and discuss this statement.
4. What would happen to wage rates in a progressive economy under a stable-price-level monetary standard? Explain.
5. What would happen to the price level in a progressive economy under a labor standard for the monetary system? Explain.
6. Discuss the need for subservience of specific types of monetary standard to the basic objectives of the economy.

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CHAPTER VI

THE FIELD OF BANKING

ORIGINS

Banking services are almost as old as trade itself. The need for them has grown apace with specialization of occupations, the extension of markets and the rise of large-scale enterprise. Of course, there would be no call for such services in a Crusoe economy—not even for a medium of exchange. But just as soon as men began to specialize and to trade, the need arose for a medium of payment and a measure of values. With further commercial development, there arose shortly a need for specialized financial services. Collections from distant buyers became necessary, and the great hazards of transporting the precious metals called for other means of effecting payment. Sellers of goods, moreover, desired to receive immediate payment, and the purchasing merchants frequently wanted to defer payment until resale was possible. There was also an early need for safekeeping the precious metals, and for changing one form of coin into another. To meet these various requirements, a class of money changers and primitive bankers emerged.

Loans upon notes of merchants and upon property date back to the beginnings of recorded history. As early as the ninth century B.C., bills of exchange baked in clay were used in Babylonia. Loans upon silver at interest and loans secured by mortgages on land were recorded in the reign of Nebuchadnezzar (625 B.C.). Early banking attained its highest development in ancient Greece. Athenian bankers exchanged foreign and local coins, received deposits, made loans with the deposits entrusted to them, and transferred deposit credits. These advanced practices were carried by the Greeks to Rome where further refinement in technique developed. The *Argentarii* (Roman bankers) made a wider use of deposit transfers and bills of exchange. This was partly a result of the added validity given to prevalent commercial practices by Roman law. In the Dark Ages that followed the fall of Rome a marked retrogression in banking occurred along with all the arts of civilization. Probably this lost ground was not regained until the fourteenth century when trade began to flourish in Venice and Florence. The private bankers of Venice prospered and grew to a position of power, even lending

to the King of England. But, like many modern bankers, they finally overextended their ability to loan and create deposits. Numerous failures in the last quarter of the sixteenth century led to the prohibition of private banking and to the establishment of a public bank (Bank of Venice) in 1587. This bank confined its operations with the public to receiving, paying, and transferring deposits of bullion and coins. At first the deposits were held in uninvested form. Subsequently, however, the fiscal demands of war led to government loans and to the issue of inconvertible paper. At the time of its liquidation by Napoleon in 1806 the deposits were some three times larger than reserves.

Shortly after the establishment of the Bank of Venice, the growing financial needs of commerce led to the formation of public banks in Amsterdam (1609) and Hamburg (1619). The primary purpose of these banks was to create a stable standard of values in a market where great confusion existed because of the variety of circulating coins—foreign and domestic, gold and silver, clipped and full weight. Coins and bullion were received on deposit, and credit was given in the amount of the standard money equivalent. These deposits, known as “bank money,” furnished a common medium in which to make domestic and foreign payments. They were transferred only upon a personally presented order. Both institutions were supposed to hold intact all specie deposits entrusted to them; *i.e.*, not to lend nor invest them. The Bank of Hamburg lived up to this standard but the Bank of Amsterdam failed to do so. When the latter failed in 1791, it was disclosed that loans had been made to the East India Company, to the city, and to individuals and that its reserves were but one-third of its deposits.

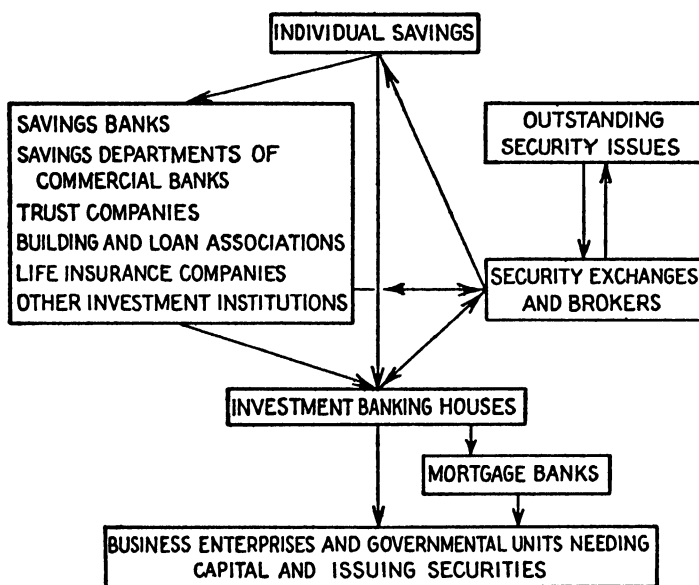
Banking development in England lagged somewhat behind that of Amsterdam but by the middle of the seventeenth century the goldsmiths of London were performing all the essential banking functions. On the basis of deposits left with them, loans were made and new deposits were thus created. Payments were made by orders, similar to the modern check, directing the transfer of deposits. In addition, the goldsmiths issued notes payable to bearer which circulated as money. These were the first bank notes. The Bank of England, the leading central bank of the world, was established in 1694. It differed from the earlier public banks in that it was a privately owned corporation granted the additional powers of issue and discount. In a sense, modern banking may be said to begin with the founding of this great institution.¹

¹ For a full treatment of early banking development, see J. L. Laughlin, *Money Credit and Prices* (Chicago, University of Chicago Press, 1931), Vol. II, Chs. II, III; and C. A. Conant, *The Principles of Banking* (New York, Harper & Brothers, 1908), Book V, Ch. I.

INVESTMENT BANKING

A useful distinction is usually drawn between commercial banking and investment banking. The former refers to the financial services performed in connection with the most liquid part of the wealth of the community. By "most liquid part" is meant those goods rather immediately approaching a market with final consumption or use a nearby prospect. These services include the holding, transfer, and creation of demand deposits as well as the extension of short-term loans to business for working capital purposes. Investment banking, on the

CHART 4. THE INVESTMENT BANKING SYSTEM



other hand, is concerned with the flow and commitment of savings, *i.e.*, the financing of permanent capital requirements. Its origin dates back to the Middle Ages when wealthy private bankers made long-term loans to certain sovereigns. When government credit became sufficiently stabilized, houses of issue were formed which underwrote and sold government obligations to the public. By thus holding the purse strings, the Rothschilds, Fuggers, and others rose to a position of great power. But the field of investment banking was comparatively narrow until the growth of large-scale enterprise after the industrial revolution. In order to amass sufficient capital under one management, it became necessary to adopt the corporate form of organization and to sell securi-

ties to the public. This called for highly specialized banking machinery, including security exchanges to provide ready marketability.

An Over-all View. The accompanying chart should aid in understanding the structure and functions of the investment banking system. Individual savings (in the top rectangle) accrue in millions of small increments. Their final utilization is mainly by business corporations and governments (in the bottom rectangle) that raise large aggregates of capital by issuing stocks and bonds. All investment banking institutions, no matter what their special field, are or should be engaged in facilitating the flow of savings to corporations and governments that promise to utilize them most economically. The several institutions grouped in the square at the left converge the countless rivulets of individual savings into larger pools which are invested in securities offered by investment banking houses. They thus perform a specialized service, not in competition with, but complementary to, that of the so-called houses of issue. The latter (in the center rectangle) buy issues of securities from corporations requiring new capital and resell them to investing institutions and individuals. It should now be apparent that all of these investment institutions are middlemen in the capital-raising process. Brief consideration must next be given to the services and operations performed by each type.

Investment Banking Houses. As indicated above, investment houses occupy the pivotal position in bringing together long-term lenders and borrowers. They receive proposals from corporations and governments to issue various types of new securities. These proposals must be exhaustively studied before acceptance or rejection. If, for example, a railroad is seeking \$100 million through an issue of bonds, it is necessary for the house to consider among other things: the record of past earnings; the physical condition of the property; the financial position; the prospect for earnings in the future; and the current state of the investment market. Moreover, in order to develop an adequate basis for passing judgment upon the most important of these, future earning power, the inquiry must cover many broad and complicated questions. Some of these are production trends in the country and in the territory of the road; development of competitive means of transport; probable course of government regulation; relevant international factors; the position of the business cycle; and the prospect of interest rates and bond prices.

Should the decision be a favorable one, the investment house¹ buys the issue and, on the date and under the conditions agreed upon, turns

¹ Usually a group of houses, called a "syndicate," underwrites all large issues. In this way the risk is spread and each one is enabled to maintain a better balanced position.

the proceeds over to the railroad. It is usual that the bulk of the money immediately advanced is raised by a commercial bank loan, with the unsold securities as collateral security. As the bonds are sold, the loan is repaid. The job of selling the issue falls upon the sales department of the investment house. Trained salesmen, operating out of the head office and branches in other cities, contact prospective buyers. It is also usual that numerous small, independent dealers as well as other large houses participate in the selling campaign. The customers are largely institutional investors—savings banks, commercial banks, trust companies, life insurance companies, and others. Wealthy individuals may likewise take a substantial amount. Should the venture turn out favorably, the issue is sold to investors at a price sufficiently above the amount paid the railroad to cover selling expenses and leave a margin of profit. For a high-grade bond the gross margin covers about 2 per cent of par for underwriting and 1 per cent for selling. Of course, an untoward change in the investment market or in the affairs of the railroad may make the sale of the bonds impossible except at a loss. It is chiefly for the assumption of this risk that the underwriting house receives a commission.

In addition to these almost indispensable services to borrowing corporations, investment houses are charged with a large social responsibility. In a world of limited resources, the most important economic problem is that of achieving an efficient utilization of resources so that the standard of life may be as high as possible. Stated differently, it is essential that output be properly balanced in relation to the socially important wants. Otherwise, a waste of valuable productive power results. To a large extent, this problem is left to the decisions of the investment banker, assuming that his interests and those of society coincide. In an important sense, he holds the purse strings of industry by directing the flow of new capital. He may encourage some business concerns and stifle others; he may encourage some industries, even governments, and obstruct others.

A few corporations have tried to cut the cost of raising capital by selling their securities directly to investors. Ordinarily, however, the services of an investment house are found to be worth the cost. Most business concerns need new capital only at intervals and are, therefore, in no position to maintain an investing clientele. Moreover, before undertaking an expensive program of capital outlays, the assurance is needed that a definite amount of money will be available at a specified time. Otherwise, the program may be held up by costly delays owing to the lack of funds.

In recent years, investment banks have lost a very substantial volume of new financing owing to the rise of direct placement of securities with insurance companies and other large institutional investors. The large insurance companies maintain their own departments for investigation of prospective new issues. If the issue is a large one, it is usually apportioned among a group of interested institutions. In this way, the direct commission of investment bankers is eliminated as well as part of the costs of preparing a prospectus and of registration with the Securities and Exchange Commission. It should be pointed out, however, that this direct method is still in the experimental stage and that part or all of the apparent savings may prove to be illusory. It may be found that the services of an investment banking specialist are worth the money just as the services of other middlemen are worth the money throughout the economy. That is, the banker's commission and the registration expenses may be more than offset by the direct costs of investigation, errors in judgment arising from inexperience and lack of expert guidance, and the absence of a market for the new issues.

Savings Banks. Savings banks exist primarily for the benefit of the masses in the lower income brackets. It is highly important from both the individual and social points of view that adequate facilities be available to encourage thrift. Millions of small deposits are gathered together by savings banks and made available for productive purposes. These deposits are the chief source of funds—accounting for about nine-tenths—while the other one-tenth comes from capital. Before the 1930's the main outlet for these funds was real estate mortgage loans, but since that time bond investments—largely United States securities—have become the dominant type of asset. At midyear 1949, investments constituted 70 per cent and loans were 30 per cent of total earning assets. Cash assets were about 4 per cent of deposits.

The advantage to the small saver lies in the opportunity to invest as little as a few dollars with a high degree of safety in relation to yield and availability. This is possible mainly because of the enlistment of the services of investment experts and the greater diversification of risk achieved. To some extent, also, the legal restrictions upon investments of savings banks are responsible. The average person lacks the time, the technical knowledge, and the experience to make good investments. In addition, his savings are too small to permit a balanced investment program. Should he have enough to buy one bond, which is unlikely, he would not have a sufficient amount to spread his risks by buying several bonds. The smallest deposit in a savings bank represents a proportionate claim on the safety and yield of the whole portfolio. The

opportunity to purchase such a claim is obviously advantageous to the small saver.

Savings banks proper in the United States are organized mainly on a mutual basis although stock companies are important in the Middle West and in California. In a mutual bank the depositors are themselves the owners. They receive all net earnings in dividends apart from the amount set aside for surplus or special reserves which of course contribute to safety and future dividends. The stock companies, on the other hand, agree to pay the depositor a definite rate of interest. Net profits after meeting this and other expenses belong to private stock holders who supply the bank's capital.

By far the largest fund of savings and time deposits, however, is held by the commercial banks. At the end of the first quarter of 1949 they held \$36.1 billion and the mutual savings banks held \$18.7 billion, making a grand total in the United States of \$54.8 billion.¹

Savings and Loan Associations. Savings (building) and loan associations are essentially a specialized type of savings bank. They pool the funds of small savers by the sale of capital stock in shares of low par value. These funds are then loaned largely to members in the community for the purpose of building homes. Real estate mortgages or contracts and stock in the association are taken as security for the loans. Since the first association was organized more than a century ago,² these institutions have come to occupy an important position in financing residential construction. At the end of March, 1949, there were about 6,100 such associations with total assets of \$13 billion. More than two-fifths (2,648) of the associations with assets of \$10 billion were insured with the Federal Savings and Loan Insurance Corporation.³ This Corporation insures the investment of a saver (stockholder) in each association to the amount of \$5,000; it is under supervision of the Federal Home Loan Bank Board in Washington, D.C. While savings and loan associations are located in every state of the Union they are most important in California, Illinois, Ohio, and Pennsylvania.

Life Insurance Companies. The tremendous growth of insurance in the United States since the First World War has made the life insurance companies our greatest savings institutions—with more than \$200 billion of insurance in force and with assets of more than \$55 billion at the beginning of 1949. United States government securities were the largest component of these assets (39 per cent), corporate securities

¹ *Federal Reserve Bulletin*, May, 1949, p. 540.

² In Philadelphia, 1831.

³ *Savings and Loans News*, June, 1949, p. 39.

—mainly bonds—were next (30 per cent), followed by mortgages (17 per cent).¹ A large element of savings is present in premiums except in the case of term insurance, and the assets constitute a reserve fund to meet future obligations to policyholders and beneficiaries.

Trust Companies. Trust companies and the trust departments of commercial banks are important in the investment field because of the wide range of fiduciary services which they perform. They execute different kinds of individual trusts, such as executor or administrator of the estates of decedents, manager of trust funds for the living, and guardian of the estates of minors, the mentally incompetent, and others not legally qualified to look after their affairs. In the exercise, also, of their corporate trust powers, they perform vital investment services. These include trustee in corporate bond issues, fiscal agent, registrar and transfer agent for securities, and receiver for insolvent and embarrassed corporations.

Investment Companies. Investment companies are designed to afford the investor, especially the small investor, the advantages of expert management and diversification of securities. They sell their own securities, issued in convenient denominations, to investors and use the proceeds for the purchase of a portfolio of stocks and bonds (mainly the former in the United States). The holder of a share of the investment company thus has a proportionate claim upon the earning power and appreciation prospects of the entire portfolio. While such companies have occupied an important place in Great Britain since the 1860's, American experience with them has been brief. Before 1920, they were almost unknown in the United States. During the 1920's, however, a mushroom growth occurred mainly as an incident to the stock market boom, and at the end of 1929 there were about 675 such companies with assets of \$7 billion. During the depression which followed, the number was greatly reduced owing to liquidations and mergers. After the worst of the depression was over, there began a new stage of growth which is still under way (1949). This expansion was on a much sounder basis than that of the 1920's, owing partly to lessons of experience and partly to the searching regulation imposed by the Investment Company Act of 1940.

There are two main types of investment companies. The closed-end type has a stated capitalization with infrequent changes in the number of shares outstanding. These shares are traded on the security exchanges and in the over-the-counter market just as the shares of other corporations. The open-end companies differ from the closed-end companies in that they may change the number of shares outstanding

¹ Institute of Life Insurance, *1948 Life Insurance Fact Book*, pp. 8, 48.

from day to day, and also in that there is no general market for the shares. Instead, the issuing company undertakes at all times to redeem its shares at the net asset value less a discount of about 3 per cent. New shares are sold at net asset value plus a premium (loading charge) of 5 to 9 per cent. This type of company has been growing more rapidly in recent years than the closed-end type. At the beginning of 1948, there were over 350 investment companies registered with the Securities and Exchange Commission with assets of approximately \$3.3 billion.¹

TABLE 4. LOANS OF GOVERNMENT CORPORATIONS AND CREDIT AGENCIES,
SEPTEMBER 30, 1948
(In millions of dollars)

Government corporations and credit agencies	To aid agri- cul- ture	To aid home- own- ers	To aid indus- try	To aid finan- cial insti- tu- tions	For- eign loans	Other loans	Total
Federal Farm Mortgage Cor- poration.....	80	...	...	...	...	...	80
Federal Intermediate Credit Banks.....	426	...	...	...	...	...	426
Banks for cooperatives	305	...	...	...	...	...	305
Commodity Credit Corporation.....	1,293	...	...	...	...	...	1,293
Rural Electrification Adminis- tration.....	999	...	...	...	...	...	999
Farmers' Home Administration.....	523	...	...	...	...	...	523
Home Owners' Loan Corpora- tion.....	...	369	...	...	...	...	369
Public Housing Administration.....	...	295	...	...	...	...	295
Federal Home Loan Banks	...	...	...	515	...	...	515
Reconstruction Finance Corpo- ration.....	...	177	410	211	190	100	1,088
Export-Import Bank.....	...	...	...	...	2,145	...	2,145
All other.....	6	221	40	4	3,750	100	4,121
Total.....	3,632	1,062	450	730	6,085	200	12,159

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 708

Government Banking. A marked increase in the size and scope of banking functions of the Federal government has taken place since the early 1930's. The details of this area of finance would fill a large

¹ Standard & Poor's Corporation, *Industry Surveys, Investment Companies*, Oct. 8, 1948, p. 12-2.

book, but a general notion may be gained from the summary presented in Table 4.

It will be noted that government corporations and credit agencies had loans outstanding of \$12.2 billion at the end of September, 1948. Foreign loans accounted for half the total, and agriculture for almost one-third. The remaining one-sixth was distributed among homeowners, industry, finance, and others.

Security Exchanges and Brokers. An essential accompaniment of the growth of business corporations and large-scale enterprise has been the development of machinery to facilitate the ready transfer of outstanding stocks and bonds. Buyers and sellers are brought together by security brokers who are members of one or more of the organized exchanges. A security exchange is an organization of security brokers and dealers designed to provide a market for all listed issues. The New York Stock Exchange overshadows all others in the United States. At the end of April, 1949, this great institution listed 2,350 issues of stocks and bonds with a market value of about \$200 billion.¹ In addition, the New York Curb Exchange and more than twenty other exchanges in leading cities list the less widely traded securities of local concerns. There is also a large over-the-counter business done by brokers in municipal bonds and other unlisted securities.

COMMERCIAL BANKING

Principal Functions. Commercial banks are frequently referred to as institutions of "deposit and discount." This descriptive title is particularly apt since it places emphasis upon their two main functions. More fully stated, these are (1) to provide the greater part of the money stock in the form of deposits subject to check, and (2) to make economically justified loans to business enterprises, individuals, and governments.

In practice, so-called commercial banks perform many other related services. No institution, however, should be designated a commercial bank unless it both holds demand deposits and makes working-capital loans.

The first function is strictly monetary in character. Business firms, individuals, and governments follow the practice of keeping the bulk of their cash funds in the form of demand deposits with the banks. The amount of this deposit money was 77 per cent of the total stock of money in March, 1949. Deposits are transferred by the ordinary bank check which is the means of effecting between 80 and 90 per cent of all payments made in the United States. The use of the check, however, has not always been so important. Prior to the Civil War

¹ *The Exchange*, May, 1949, cover page.

currency exceeded deposits. But since the 1860's, the greater convenience and safety of the check has resulted in a gradual displacement of currency, the use of which is now largely confined to retail trade and wage payments. The widespread use of checks necessarily gives rise to a subsidiary banking service, check collections. Most deposits are made in the form of checks drawn upon other banks. These checks must be presented to, and paid by, the drawee banks before the funds actually become available. The tremendous physical task of collecting and accounting for many billions of such items every year is one of the major banking operations, engaging a large part of the working force.

Although the second principal function has an important monetary aspect, it is more definitely a part of the capital-raising process. In addition to plant and equipment—fixed capital—business enterprises must make adequate provision for cash, inventories, and receivables. These items, which are normally turned over one or more times during the year are classified as working capital. Fixed capital is raised largely by the sale of stocks and bonds in the capital market, and by retained earnings. Working capital, on the other hand, is raised by the sale of securities, the retention of earnings, and by borrowing at banks. The method varies greatly among different types of concerns and within the same concerns, as conditions in the money markets change. A simple example will, perhaps, serve to make clearer the nature of working-capital loans.

Consider the case of a department store. The big selling season comes in the last quarter of the year, reaching a peak in December with the rush of Christmas trade. In preparation for this season, shelves must be stocked with new merchandise in September, and further additions to inventory must be made during October and November. Bank loans are accordingly arranged in these months to carry the merchandise, pending sale and the receipt of payment. Part of the goods are sold for cash, the rest on credit. The cash sales permit some reduction of the loans by December, and the collection of receivables enables the store to pay off the remainder during January and February. Borrowing is again necessary to finance the spring buying season, and, if all goes well, these loans are cleaned up by June or July.

Similar examples might be drawn from any field of business—manufacturing, mining, farming, or public service industries. All have a need for working capital and regularly or intermittently seek accommodation from the banks. Loans of this type have the common characteristic of financing an operation the completion of which is shortly expected from the normal flow of current individual and business ex-

penditures. In this sense they are self-liquidating in a short time in contrast with fixed-capital loans which are self-liquidating only over a considerable number of years. Neither type, however, can be quickly liquidated as a whole without precipitating widespread business failures, price deflation, and depression.

In this process of redistributing the community's pool of liquid resources through business loans, the commercial banks discharge a large social responsibility. Their decisions in granting or withholding accommodation are influential in determining the members and location of each industry. With a view to making these important decisions wisely, large banks maintain a specialized credit department which gathers and analyzes all information bearing upon the credit standing of actual and potential borrowers. It should also be observed that the credit policy pursued by bankers has much to do with the course of the business cycle. By pursuance of wise or unwise policies during the various phases of the cycle, business fluctuations may be minimized or accentuated.

Although the monetary aspect of the loan function cannot be fully explained at this point, a brief introduction to the subject is necessary. When the banks expand their loans and investments, new deposits are thereby *created*. In fact, most of the existing demand deposits originated in just this way. When a textile manufacturer borrows \$500,000 to finance the purchase of raw materials, the bank credits the amount to the concern's checking account. Total deposit money is thereby increased unless offsetting reductions in deposits take place. Later, when the loan is repaid, a contraction in deposit money occurs. In summary, then, it may be said that commercial banks *create*, *hold*, and *transfer* by check the largest element of the money stock—deposit money.

Other Services. In addition to the two essential functions of commercial banking just discussed, several other financial services are performed by the modern bank. This effort of one institution to offer a complete financial service is usually referred to as "department-store banking."

1. The banks serve as paying and receiving stations for currency. Their facilities enable the business community to adjust conveniently the amount and denominations of currency. Until recently, also, commercial banks issued currency in the form of bank notes. But, since the redemption of the national bank notes in 1935, such issuance has been confined to the U.S. Treasury and the Federal Reserve banks.

2. Facilities are provided for both domestic and foreign remittances. By maintaining balances with correspondents, the banks are able to

sell checks (drafts) on such balances acceptable anywhere in the civilized world. Several other specialized services are also afforded by the foreign department of a large bank, such as travelers' and commercial letters of credit, acceptance credits, and purchase and sale of foreign exchange futures.

3. The collection for customers of drafts, promissory notes, and other obligations constitutes an important service.

4. Most so-called "commercial banks" also maintain a savings department. These funds are employed chiefly for fixed-capital purposes by making real estate loans and purchasing bonds.

5. An increasing number of banks have entered the trust field. Most of the large institutions perform both individual and corporate fiduciary services.

6. Facilities are furnished for the safekeeping of securities and other valuables.

7. Until recently many of the largest banks were important underwriters of securities. But the Banking Act of 1933 restricted such operations to the securities of cities, states, and other governmental units of the United States. This act also prevented the purchase and sale of securities except for the account of the bank. In the previous decade even many small banks established bond departments for the purpose of selling securities to customers.

Institutions. As Table 5 indicates, commercial banking in the United States is carried on by several classes of institutions. Part of the fourteen-thousand-odd banks are chartered by the Federal government and are called "national banks." The rest hold state charters and are referred to as "state banks." The national banks hold about three-fifths of commercial bank deposits but represent only one-third of the total number.

Practically all the banks have their deposits insured by the Federal Deposit Insurance Corporation. This insurance covers a customer's deposit up to \$5,000 but does not insure accounts beyond that amount.

The member banks of the Federal Reserve System hold the bulk (85 per cent) of deposits but represent less than half the number of banks. All national banks are required by law to be members and state banks may join provided they are able to meet certain standards set up by the Federal Reserve System. Nonmember banks are for the most part small institutions, the average amount of deposits being less than \$3 million.

Other institutions engaged in specialized phases of commercial banking include commercial-paper houses, finance companies, acceptance dealers,

cattle loan companies, and factors. All stand in the position of middlemen between the lending bank and the borrower. Their function is chiefly that of furnishing specialized facilities and experience in making and supervising loans to a particular class of borrowers.

Central banking functions are performed in the United States by the Federal Reserve System. This consists of twelve regional Reserve banks owned by the member banks of the district and supervised by the Board of Governors in Washington, D.C.

TABLE 5. COMMERCIAL BANKS IN THE UNITED STATES,
DECEMBER 31, 1948

Banks	Total deposits, billions of dollars	Number
Classification I:		
National Banks (Federal charter)	81.4	4,991
State banks (state charter)	61.4	9,180
All commercial banks	142.8	14,171
Classification II:		
Insured commercial banks	140.6	13,413
Noninsured commercial banks	2.2	758
All commercial banks	142.8	14,171
Classification III:		
Member banks (Federal Reserve System)	121.4	6,914
Nonmember banks	21.4	7,257
All commercial banks	142.8	14,171

SOURCE: *Federal Reserve Bulletin*, June, 1949, pp. 692-693.

Review Questions

1. Summarize the historical development of banking.
2. Outline the relations of the institutions which comprise the investment banking system.
3. Give an illustration of underwriting and distribution of an issue of securities by investment banking houses.
4. Discuss the large social responsibilities of investment houses.
5. Describe the methods employed in recent years to by-pass the services of investment banks.
6. What are the functions of savings banks? Why may these functions be

viewed as complementary rather than competitive with those of investment banks?

7. Distinguish between mutual and stock savings banks.

8. Compare the organization and functions of savings banks and savings and loan associations.

9. Explain the fact that life insurance companies are the largest class of savings institution in the United States in terms of the nature of life insurance.

10. Point out the services performed for business and individuals by trust companies and the trust departments of commercial banks.

11. Describe the organization and functions of investment companies. What advantages do they offer investors?

12. Summarize the size and scope of banking functions performed by government corporations and credit agencies.

13. Why has the development of stock exchanges accompanied the growth of business corporations?

14. Summarize the principal functions of commercial banks. What other services do they perform for individuals and business?

15. Distinguish between (1) national banks and state banks, (2) insured banks and noninsured banks, and (3) member banks and nonmember banks.

Advanced Questions and Problems

1. Obtain the prospectus (prepared for the Securities and Exchange Commission) of a recent issue of securities, and make a summary of the information contained therein.

2. Interview an officer of the local savings bank and of the local savings and loan association. On the basis of these interviews and other available information, prepare a report comparing the relative merits of the two institutions from the standpoint of savers.

3. Obtain the annual reports of two investment companies and compare them from the viewpoint of (a) yields, (b) management fees, and (c) investment policies.

4. Interview an officer of the trust department of a local bank. On the basis of the interview, prepare a report on the fiduciary services which the trust department performs in the community.

5. Interview a local life insurance agent for information concerning the different types of insurance sold and the purposes of each type.

6. Obtain the annual report of a life insurance company and analyze it from the standpoints of (a) margin of protection afforded policyholders by equity capital and (b) investment position and policy.

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CHAPTER VII

COMMERCIAL BANKING OPERATIONS

In order to gain a fuller understanding of commercial banking functions, described generally in the preceding chapter, it is necessary to examine the actual operations of the individual bank. These operations are first explained in a general way and are then illustrated in terms of their effect on the bank statement.

The nature of the commercial banking business can best be described by answering two questions: (1) What are the sources of the funds with which a bank operates? (2) What are the uses to which these funds are committed? At this point we shall be concerned only with the principal commercial banking functions—not with the savings department or with other financial services actually performed in most banks.

SOURCES OF FUNDS

As in any other business enterprise, there are but two main sources of a bank's funds, *viz.*, the contribution of the owners (shareholders), and that of the creditors. Despite this general similarity, however, the peculiar methods of raising bank funds require further explanation.

Proprietorship. The contribution of owners is represented on a bank balance sheet by capital stock, surplus, undivided profits, and equity reserves. In most banks these items, taken together, constitute between 5 and 10 per cent of total assets. From the standpoint of depositors the function of the proprietorship equity is to provide a buffer of safety in the event of losses sustained by the bank. There is thus a certain conflict of interest between shareholders and depositors. The former are anxious for liberal earnings and dividends upon their invested capital. This purpose is served by a low ratio of proprietorship to deposits. Depositors, on the other hand, seek a high degree of safety—an object which is furthered by a large ownership interest. But there is actually little conflict of interest between the two groups in the long run since reasonable earnings contribute to the safety of the bank.

Capital stock, which is the most permanent element, is divided into shares, each with a fixed par value. Although the original amount is paid in by shareholders, changes may subsequently be made as a result

of operations. A growth of earnings and deposits may lead to an increase of capital stock. On the other hand, losses and a contraction of deposits may call for a reduction of capital stock.

Current earnings are first carried to the undivided profits account and are subsequently paid out as dividends or transferred to the more permanent surplus account. The undivided profits item thus represents a small transitory reservoir through which earnings flow to their destination. If the flow to surplus is large and steady, this item may grow until it exceeds the amount of capital stock. Such is the case in many of the country's old and successful banks. But if the bank sustains losses, either from current operations or declining investment values, a corresponding write-down of surplus may become necessary. If the losses are sufficiently severe, a part or all the capital stock may also be wiped out. In that event the banking authorities are liable to close the bank.

Deposits. By far the most important source of a bank's funds is the deposits of customers. This item is usually between 8 and 16 times larger than proprietorship. As stated previously, these deposits consist principally of the checking accounts and time deposits. In another sense, they may be thought of as borrowed money. When a customer deposits \$1,000, he actually *lends* this amount to his bank. The banks thus operate largely with borrowed funds, a practice which is generally called "trading on the equity." Although most types of concerns trade on the equity in greater or less degree, the banks furnish an extreme example of the practice. When carried too far, the margin of safety for deposits becomes too thin. While it is difficult to lay down a general rule, this point is reached in most banks when risk assets become more than five or six times larger than proprietorship.

Bills Payable and Rediscounts. In addition to operating with money borrowed from depositors, the banks borrow intermittently from other sources when their cash reserves run low. The items "bills payable" or "rediscounts" represent such borrowing on the bank statement. Prior to the Federal Reserve System the large city banks performed the service of lending to the smaller banks. Now, however, member banks in need of reserves usually turn to the Federal Reserve banks for accommodation. But nonmember banks still depend largely upon their city correspondents for advances, and members continue to use this channel when necessity or profit dictates.

USES OF FUNDS

It still remains to answer the second main question: What are the principal uses to which a bank puts its funds? Disregarding the fact

that an outlay for physical equipment is necessary, these uses may conveniently be classified under three headings: loans, investments, and cash reserves.

Loans. The item appearing on a bank statement, "loans and discounts," harbors a varied collection of obligations. Prior to the 1930's the total amount considerably exceeded open-market investments but since that time the latter have been more important. The largest subdivision represents commercial loans made to business concerns that keep checking accounts with the bank. More than one-half the amount of these loans is unsecured. For the most part, these are made to large, established firms. The remainder, representing about two-thirds of the number, is made largely to smaller and less well-established businesses, and is secured by some form of specific collateral. Other important classes of loans are real estate mortgage loans, loans on securities, agricultural loans, and consumer loans. The first three of these are usually secured by the pledge of property of some sort, while consumer loans are ordinarily secured by endorsement. The portfolio may also include a variety of noncustomer loans, including open-market commercial paper, bankers' acceptances, and stock exchange loans to brokers.

Investments. The distinction between loans and investments is a rather arbitrary one since any advance of funds may, in a broad sense, be labeled either a loan or an investment. It does, however, serve a useful purpose. The investment item on the statement includes bonds of all types and also stocks in so far as banks are permitted and disposed to hold them. Securities of the United States government constitute the largest element, although railroad, public utility, state and municipal, industrial, and foreign bonds are likewise held.

The most liquid part of open-market investments is called the "secondary reserve." To qualify for this reserve, a security must be readily marketable at any time without appreciable loss. The bulk of the secondary reserve consists of short-term United States securities.

Since it is the usual practice of banks to meet the legitimate loan requirements of their customers first and to invest only residual funds, the relative amount of loans and investments varies considerably in the course of the business cycle. In order to meet the increased demand for loans during the prosperity phase, the banks are usually forced to sell a part of their investments. Such a shift occurred in 1929. On the other hand, when the credit needs of business decline during a depression, the banks attempt to keep their funds employed by enlarging the investment portfolio. The year 1930 affords a good illustration of this tendency.

Taken together, loans and investments are known as the "earning assets" of a bank. The other asset items, such as fixtures, equipment, and cash reserves, do not yield a direct return even though they may be absolutely essential to operations. A major problem of bank management is to keep the yield and amount of earning assets as large as is consistent with safety.

Primary or Cash Reserves. The principal limitation upon the expansion of the proportion of earning assets is the necessity of maintaining an adequate fund of primary reserves. For a national bank, the balance sheet items which make up this fund are "cash in vault," "legal reserve with the Federal Reserve bank," "demand deposits" maintained with correspondent banks, and "cash items in process of collection." In view of the fact that a commercial bank must stand ready to meet deposit withdrawals at a moment's notice, the management can ill afford to sacrifice liquidity too greatly for the sake of immediate income. The very life of the bank is at stake since failure to meet any withdrawal with acceptable funds would mean a loss of the community's confidence, and hence failure.

This does not mean, however, that the cash reserve against deposits needs to be 100 per cent. Except in a severe financial panic, not all depositors seek to draw their funds at the same time. Instead, the stream of inflowing deposits largely balances withdrawals. The function of working cash reserves is to meet any probable excess of the latter over the former from day to day. In normal times, the two flows are sufficiently synchronized, so that a cash reserve (excluding legal reserve) of between 6 and 12 per cent of total deposits is adequate for most banks. It should be noted, however, that requirements vary widely between banks and within the same bank at different times. The management should, therefore, devote constant study to the forces that may either retard the inflow or increase the outflow. In the United States the practice of prescribing certain reserve minima by law has been followed. The original purpose of such legal requirements was to exert some restraint upon speculatively inclined banks, but in recent years there has developed an additional aim of controlling the quantity and velocity of deposit money.

EFFECT ON THE BALANCE SHEET

A firmer foundation for understanding the nature of banking operations can be laid by considering each one of them in terms of the bank statement. For this reason, it is proposed to consider a series of simple illustrations of the principal banking transactions. Assume that a new

bank, the Alpha National, has just opened for business in a small city, that the 10,000 shares of capital stock (par value \$100) have been subscribed and paid for at \$120 per share, that the founders have made original deposits of \$1,500,000, and that an outlay of \$100,000 has been made for fixtures and equipment. We may also suppose that the proper amount of stock in the Federal Reserve bank has been subscribed and that the legal reserve has been deposited with the Federal Reserve bank.¹ The statement on the opening day, then, would appear as follows:

ALPHA NATIONAL BANK			
Resources		Liabilities and Net Worth	
Cash items	\$2,414,000	Deposits	\$1,500,000
Reserve with Federal Reserve bank	150,000	Capital stock	1,000,000
Fixtures and equipment	100,000	Surplus	200,000
Stock of Federal Reserve bank	36,000		
	<u>\$2,700,000</u>		<u>\$2,700,000</u>

Next, the components of Cash Items may be separated by depositing \$200,000 with correspondent banks and sending all cash above \$50,000 to the Federal Reserve bank. These steps would change the above statement (1) by decreasing Cash \$200,000 and increasing a new asset account Due from Banks by the same amount; and (2) by decreasing Cash by \$2,164,000 and increasing the account Reserve with Federal Reserve bank by a like amount.

HANOVER, N.H. July 14 1949 No 101

THE DARTMOUTH NATIONAL BANK OF HANOVER 54-116

PAY TO THE ORDER OF Economic Recovery Program \$6,000,000.00

Only six billion and 00/100 DOLLARS

THIS CHECK IS IN PAYMENT OF THE FOLLOWING

U. Sam

¹ The required subscription to Federal Reserve bank stock is 6 per cent of capital and surplus of which one-half must be paid in; the basic legal reserve requirement for the Alpha National is 10 per cent of net demand deposits.

Now suppose that \$1,000,000 of new deposits are received—\$100,000 in cash, \$600,000 in checks¹ drawn upon local clearing-house banks, and \$300,000 in checks drawn upon out-of-town banks. This transaction would require the opening of two new asset accounts—Exchanges for Clearing, and Federal Reserve Collection Account—which would be increased, respectively, by \$600,000 and \$300,000. Cash would also be increased by \$100,000 and Deposits by \$1,000,000. By way of explanation it may be noted that practically all deposited checks drawn upon local banks are exchanged and collected through an association of local banks called the “clearing house,” while most out-of-town checks are sent to the Federal Reserve bank for collection. At this stage the revised statement of the Alpha National would be as follows:

ALPHA NATIONAL BANK

Resources	Liabilities and Net Worth
Reserve with Federal Reserve bank \$2,314,000 Federal Reserve collection account 300,000 Due from banks 200,000 Exchanges for clearing 600,000 Cash in vault 150,000 Fixtures and equipment 100,000 Stock of Federal Reserve bank 36,000	Deposits \$2,500,000 Capital stock 1,000,000 Surplus 200,000
<u>\$3,700,000</u>	<u>\$3,700,000</u>

Hanover, N. H., <u>July 1</u> 19 <u>49</u>		Due <u>Sept. 1, 1949</u>
<u>Ninety days</u> after date, for value received, I promise to pay		No. <u>43</u>
to the order of <u>The Dartmouth National Bank</u>		
<u>One thousand</u> Dollars		\$ <u>1,000</u>
Payable at The Dartmouth National Bank of Hanover, N. H.	Waiving demand, notice and protest With interest after maturity <u>at</u>	<u>4%</u>
Address <u>School St.</u>	Signature <u>J. Doe</u>	
<u>Hanover, N. H.</u>		

¹ Note the specimen of the ordinary bank check on page 88.

By this time many requests for loans¹ would have been made by customers. Suppose that out of those investigated, advances of \$1,000,000 (\$800,000 in discounts and \$200,000 in straight loans) are granted on a 90-day, 5 per cent basis and that the proceeds are credited to the borrowers' checking accounts. The balance sheet changes effected thereby would be:

Loans and discounts . . .	+\$1,000,000	Deposits	+\$990,000
		Unearned discount	+ 10,000

This draws attention to the technical distinction between a discount and a straight loan. If the advance takes the form of a discount, the interest is deducted immediately. In the above case, the borrowers whose notes were discounted were given deposit credit of \$990,000 and the interest of \$10,000 deducted in advance was credited to a new liability account Unearned Discount. In a sense, this account represents an offset on the liability side to an overstatement of the present value of the discounts since they are entered on the books at face value (\$800,000). In the case of the straight loan, the borrower receives deposit credit for the full amount and is obliged to pay the face value plus interest at maturity. It should be obvious that the actual rate on the discount basis is slightly higher than the nominal rate.

On first view one might conclude that the bank has discovered in this process of making loans a magical device by which its *own* deposits can be expanded to more than \$23,000,000—limited only by the 10 per cent legal reserve. Such a conclusion, however, would be quite erroneous, even though the banks as a group can do this very thing.² Referring to the example, businessmen who watch costs closely would not have borrowed the \$1,000,000 at 5 per cent interest unless they needed the funds to make payments. For this reason, the Alpha National would expect to lose all, or nearly all, of the \$990,000 within a few days. Part of the new deposits might be withdrawn in currency but most of it would be transferred by check. These checks would, for the most part, be deposited in other banks and be presented for payment through clearing and collection channels. Assuming the loss in this manner of all these loan-created deposits, the statement of the Alpha National would very shortly change as follows:

Reserve with Federal Reserve bank	-\$990,000	Deposits	-\$990,000
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¹ Note the specimen of a promissory note on page 89.

² This point is explained in Chapter XVII.

The net effect of the advances to customers would be, therefore,

Loans and discounts	+\$1,000,000	Unearned discount	+\$10,000
Reserve with Federal Reserve bank	-990,000		

The bank still holds large excess cash reserves which the management would be anxious to convert into earning assets. Assume then that \$1,000,000 of bonds (U.S. government, \$500,000; municipals, \$200,000; railroads, \$150,000; public utilities, \$75,000; and industrials, \$75,000) are purchased in the open market and that payment is made by check upon the reserve balance. This transaction would involve a simple exchange of assets as follows:

U.S. government bonds	+\$500,000
Other bonds	+500,000
Reserve with Federal Reserve bank	-1,000,000

At this point the complete revised statement would be:

ALPHA NATIONAL BANK			
Resources		Liabilities and Net Worth	
Reserve with Federal Reserve bank	\$ 324,000	Deposits	\$2,500,000
Federal Reserve collection account	300,000	Unearned discount	10,000
Due from banks	200,000	Capital stock	\$1,000,000
Exchange for clearing	600,000	Surplus	200,000
Cash in vault	150,000		
Loans and discounts	1,000,000		
U.S. government bonds	500,000		
Other bonds	500,000		
Fixtures and equipment	100,000		
Stock of Federal Reserve bank	36,000		
	<u>\$3,710,000</u>		<u>\$3,710,000</u>

Next, the effect of the clearing operation may well be considered. Every morning a city bank takes all the checks drawn on other local banks to the clearing house and exchanges them for the checks, drawn upon itself, which all the other clearing banks have received. If the items taken exceed the items received, the other banks must settle the difference with acceptable funds. But if the checks received exceed those taken, the bank is obliged to pay the difference to the others. Although several methods of settlement have been used, the prevailing one at present is the transfer of reserve deposit credit at the Federal

Reserve bank. This is a simple matter when all the banks have balances at the Reserve bank. The amount of the settlement is ordinarily only a fractional part of total clearings owing to the offsetting process. Now suppose that the Alpha National takes its local items to the clearing house and receives checks drawn upon itself to the amount of \$700,000. In this event, the statement changes would be:

Exchanges for clearing ...	-\$600,000	Deposits.....	-\$700,000
Reserve with Federal Reserve bank.....	- 100,000		

Had the clearing-house balance been favorable, rather than unfavorable, the Reserve balance would have been increased.

In addition to the foregoing illustrations, it is well to consider a series of others. Suppose that the Alpha National Bank proceeds with operations as follows:¹

1. Receives reserve credit for the collection items sent to the Federal Reserve bank.

Reserve with Federal Reserve bank	... ..	+\$300,000
Federal Reserve collection account		-300,000

2. Pays out \$100,000 of currency to depositors who present their checks at the teller's window.

Cash in vault.....	-\$100,000	Deposits.	-\$100,000
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3. Sells a \$10,000 bank draft drawn upon a New York City correspondent to a customer who is remitting funds to an exacting creditor; also sells a \$1,000 draft to a noncustomer for cash (commissions disregarded).

Due from banks	.....	-\$10,000	Deposits.....	-\$10,000
Due from banks	.. . . .	-\$1,000		
Cash.....	.....	+1,000		

4. Gives recognition to the interest that has accrued on its straight loans.

Interest accrued.....	+\$5,000	Undivided profits.....	+\$5,000
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5. Enters the amount of unearned discount that has become earned.²

¹ In order to obviate repetition of transactions, no attempt is made to preserve a realistically balanced position in this final series of operations.

² In a sizable bank, entries similar to operations 4 and 5 are made daily. Each day another increment of interest *accrues* on the straight loans and another increment of unearned discount becomes *earned*. These interest accounts thus flow steadily into gross operating income. For the sake of simplicity, the balance sheet item, undivided profits, is credited in the illustration.

Unearned discount	-\$8,000
Undivided profits	+\$8,000

6. Accepts repayment of a straight loan (\$10,000, 90-day, 5 per cent) which has matured. The customer pays by check.

Loans and discounts	-\$10,000	Deposits	-\$10,125
Accrued interest	-125		

7. Accepts repayment of a \$20,000 discount.

Loans and discounts	-\$20,000	Deposits	-\$20,000
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8. Borrows \$100,000 from the Federal Reserve bank on its own note secured by eligible securities. One-fourth of the proceeds is taken in currency.

Reserve with Federal Reserve bank	+\$75,000	Bills Payable	+\$100,000
Cash in vault	+25,000		

9. Purchases business machines at a cost of \$5,000. Payment is made by cashier's check.¹

Fixtures and equipment	+\$5,000	Cashier's checks	+\$5,000
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10. Certifies a customer check for \$20,000.²

Deposits	-\$20,000
Certified checks	+\$20,000

11. Writes off losses of \$10,000 on loans and \$15,000 on railroad bonds.

Loans and discounts	-\$10,000	Surplus	-\$25,000
Other bonds	-15,000		

12. Declares a 10 per cent dividend and carries \$20,000 to surplus.

Surplus	+\$ 20,000
Undivided profits	-120,000
Dividend payable	+100,000

Finally, in order to bring out typical relationships among the balance sheet items, the following statement of the Alpha National is presented.

¹ A cashier's (or treasurer's) check is an order drawn upon the bank itself by the cashier directing it to pay a definite sum of money to the payee. When issued such a check is a liability that usually returns for collection within a few days. Payments for bank supplies and equipment are frequently made by this method and customers sometimes use such checks for distant remittances.

² For certain payments, the ordinary check is unacceptable because the creditor insists on definite assurance that the check is good. This assurance may be given by the bank's certification, *i.e.*, by one of the officers stamping CERTIFIED across the face and attesting the fact by his signature.

This statement shows its position at the end of 1948 after it has become a typical established national bank.

ALPHA NATIONAL BANK—STATEMENT OF CONDITION ON DECEMBER 31, 1948
(In thousands of dollars)

Assets		Liabilities and Net Worth	
Currency and coin.	1,025	Demand deposits (business and personal)	46,931
Reserve with Federal Reserve bank	13,357	Certified and officers' checks	1,233
Due from banks	4,342	U.S. government deposits.. . . .	1,381
Cash items being collected.	4,250	State and municipal deposits.	4,475
Total cash reserves.	22,974	Due to banks	7,794
		Total demand deposits.....	61,814
U.S. government securities.	34,852	Time deposits	19,553
State and municipal bonds	3,186	Total deposits	81,367
Corporate bonds	1,896		
Corporate stocks	31	Miscellaneous liabilities.. . . .	816
Stock of Federal Reserve bank	129	Total liabilities.. . . .	82,173
Total investments.	40,093		
Commercial loans	12,988	Capital stock.....	1,824
Loans secured by stocks and bonds	1,037	Surplus	2,506
Real estate loans	5,537	Undivided profits...	1,057
Consumer loans.....	3,784	Net worth reserves.....	320
Other loans	639	Total net worth.....	5,707
Total loans	23,985		
Bank premises and other real estate	625		
Miscellaneous assets	436	Total liabilities and net worth.....	87,880
Total assets.....	87,880		

The outstanding features of the statement are (1) cash reserves are about 25 per cent of assets, and the legal reserve balance with the Federal Reserve bank is over one-half of cash reserves; (2) total loans and investments (earning assets) are 73 per cent of assets, and investments are nearly twice as large as loans; (3) United States securities represent the bulk of the investment account; (4) commercial loans, mainly for working capital, constitute over one-half of loans; (5) demand deposits are about three-fourths of total deposits, and time deposits one-fourth; (6) the bulk of demand deposits belongs to business firms and individuals; and (7) net worth is 6.5 per cent of total assets. These ratios are over-all averages and vary considerably among banks. The balance sheet

relationships were changed markedly by war finance; the main changes were (1) the larger proportion of investments to loans, (2) the larger ratio of demand deposits to time deposits, and (3) the smaller ratio of capital funds (net worth) to total assets.

BANK EARNINGS AND EXPENSES

Like other business enterprises, a bank makes a profit for stockholders only if total income exceeds the various operating and overhead ex-

TABLE 6. EARNINGS AND EXPENSES OF MEMBER BANKS OF THE FEDERAL RESERVE SYSTEM, 1929, 1939, AND 1948

(In millions of dollars)

	1929	1939	1948
Earnings:			
On U.S. securities.....	473	444	855
On other securities.....			158
On loans.....	1,563	560	1,308
Service charges on deposit accounts.....	363	54	141
Other earnings.....		237	367
Total current earnings.....	2,399	1,296	2,828
Expenses:			
Salaries and wages.....	464	388	876
Interest on time deposits.....	445	159	250
Interest on demand deposits.....	314		
Taxes (nonincome)*.....	112	85	90
Other expenses.....	348	262	579
Total current expenses.....	1,684	895	1,795
Net current earnings.....	715	401	1,033
Profits and recoveries on assets.....	137	327	190
Losses and charge-offs on assets.....	295	380	195
Net addition to valuation reserves.....	†	†	173
Net profits before income taxes ..			854
Taxes on net income.....	*	*	234
Net profits.....	557	347	621
Cash dividends declared.....	387	207	294

SOURCE: *Federal Reserve Bulletin*, May, 1949, p. 494.

* Taxes on net income were included with other taxes in 1929 and 1939.

† Not reported separately.

penses. This likeness, however, cannot profitably be developed further because of the wide difference that exists in the principal income and expense items. Table 6 throws considerable light upon the nature of banking operations by showing the recent trends and relationships among these items.

The main features of operations in 1948 are the following: First, current earnings came chiefly from interest on investments and loans, the latter of which contributed the larger amount. Second, salaries and wages were the largest single expense. Third, net profits were 22 per cent of gross current earnings and 7.2 per cent of total capital funds (net worth). Fourth, gross earnings on securities were at the rate of 1.67 per cent per annum and on loans were 3.83 per cent. Last, cash dividends declared were 47 per cent of net profits, and the remainder of net profits was added to net worth.

It should also be noticed that very considerable changes in earnings and expenses have taken place since 1929. At that time interest on loans was the dominant source of gross income, and service charges on deposit accounts were of minor importance. Also, interest on demand deposits was a large item of expense,¹ and income taxes were a relatively small item. The effects of the depression are reflected in the figures for 1939, notably in the sharp decline of interest on loans and in the small net profit.

Before leaving this topic, a word of caution should be given lest the income and expense relationships given in Table 6 be accepted as representative of all banks in the country. Actually, considerable variation exists, depending upon the character of their business, size, location, and other factors. For example, the percentages for a large New York City bank would differ from those of a small country bank in upstate New York. Likewise, those for a bank whose deposits are principally savings would be quite different.

NATURE OF BANKING OPERATIONS

Banking operations may now be viewed with a more general perspective. In the first place, banks deal almost entirely with claims upon wealth rather than with tangible wealth itself, and they are concerned principally with claims upon the liquid wealth of the community. These mostly take the forms of currency, bank checks, promissory notes, bank acceptances, trade acceptances, foreign bills of exchange, book credits, bills of lading, warehouse receipts, and relatively short-term invest-

¹ The payment of interest on demand deposits was prohibited by the Banking Act of 1933.

ments. The liquid wealth underlying such claims consists of goods quite immediately approaching sale in the market—finished goods or raw materials in storage or shipment, goods in process of production, and products sold to a buyer who has made only partial payment. The fixed-wealth claims, which are usually long-term instruments, are represented mainly by stocks, bonds, and mortgage loans.

In the second place, the principal banking operations have the common feature of being exchanges of these claims upon wealth. When a depositor brings currency to the bank, he exchanges this claim for a demand deposit which is an immediate right to legal-tender money. This transaction is simply a conversion of one form of money into another. Again, when a loan is made, the customer receives a demand claim against the bank (deposit credit) and the bank receives a future claim (promissory note) against the customer for a somewhat larger amount—principal plus interest. Similarly, purchases and sales of securities, transfers of deposits, settling clearing-house balances, borrowing from correspondent banks, receiving loan repayments, buying and selling bills of exchange, and meeting currency withdrawals, all resolve themselves into simple exchanges of claims upon wealth.

NATURE AND MEASUREMENT OF BANK CREDIT

The concept of bank credit is a most pliable and indefinite one among both practical bankers and theorists. The term is applied by different writers to any one of the following: total loans and investments, total loans, total deposits, and demand deposits. To complicate the matter further, each of the above items is likely to be further adjusted to conform with the problem at hand. The concept employed here is based upon the monetary function performed by banks. The volume of bank credit is measured by the contribution of the banks to the country's stock of money. That is to say, the amount of checking accounts (adjusted) plus the amount of bank notes in circulation. As far as this country's commercial banks are concerned, this actually means only the former, since bank notes are now issued only by the Federal Reserve banks.

The amount of deposit money in the United States can readily be computed from available banking statistics. Calculate the total of demand deposits (excluding bankers' deposits but including U.S. government deposits) cashiers' checks, certified checks, and travelers' letters of credit. Then deduct the amounts of exchanges for clearing and other checks in process of collection. This deduction must be made to avoid an overstatement, since deposit credit has already been given by the

collecting banks and the drawee banks have not yet charged their customers' accounts. The result is the amount of deposit money.

The bulk of bank-credit money has been created by the expansion of loans and investments of commercial banks. When a loan is granted, the proceeds are usually credited to the customer's checking account. Likewise, new investments directly or indirectly give rise to new deposits. In both of these processes the banks transform nonmoney claims to wealth into money. In the case of a loan, the less widely known credit of the borrower, represented by his promissory note, is converted into deposit money. In a sense, the bank is merely validating, or placing its guarantee upon, the borrower's credit. The same transformation process occurs with respect to bank investments in so far as they represent demand deposits.

Review Questions

1. Discuss the proprietorship equity as a source of funds in a commercial bank. Of what elements is this equity composed?
2. To what extent is there a conflict of interest between shareholders and depositors?
3. How important are deposits as a source of funds in a commercial bank? Bills payable and rediscounts?
4. Compare loans and investments as uses of the funds of commercial banks. What are the subdivisions of loans? Of investments?
5. Define "secondary reserves" of commercial banks.
6. Discuss the function of primary or cash reserves of commercial banks. Of what elements are they composed?
7. Analyze carefully the legal and economic aspects of an ordinary bank check.
8. How are deposited checks drawn on other banks in the same city usually collected? Checks drawn on out-of-town banks?
9. Distinguish between discounts and straight loans. What difference is there between the cost of credit on a discount of \$1,000 at 5 per cent for one year and a straight loan of \$1,000 at 5 per cent for the same period?
10. Analyze the nature of a promissory note from both an economic and legal point of view.
11. Describe the procedure in the daily clearing of local checks at the clearing house.
12. What is the difference between a cashier's check and a certified check? For what purposes are these instruments used?
13. Summarize the outstanding features of the statement of the Alpha National Bank at the end of 1948.
14. Analyze the summary of earnings and expenses of member banks in 1929, 1939, and 1948 given in Table 6.
15. Demonstrate that most banking operations are exchanges of claims on wealth.

16. Discuss the concept of bank credit.
17. How can the amount of bank credit be measured?

Advanced Questions and Problems

1. What factors limit the extent to which an individual bank can expand its loans? Why would a practical banker not loan several times the amount of his surplus primary reserve?
2. Discuss the changes in the statement of condition of commercial banks brought about by financing the war.
3. Obtain the latest available statement of earnings and expenses of member banks, and prepare a report analyzing the changes since 1948 as given in Table 6. (SOURCE: *Federal Reserve Bulletin*.)
4. Illustrate the proposition that the bulk of deposit money has been created by the expansion of loans and investments of commercial banks.

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CHAPTER VIII

FINANCIAL DEVELOPMENTS: A SKETCH

The outstanding feature of financial developments in the United States has been the great variety of experiments undertaken under the authority of both Federal and state governments. In the early days the experience of foreign countries, especially of Great Britain, served as a pattern for many of our financial institutions. Later on, many new experiments were undertaken, particularly by the several states. While costly at the time, these experiments were exceedingly fruitful over the years. Faulty systems and bad practices emerged in their true colors, and the worst of them were eliminated. Good systems and methods came to be recognized as such, and were gradually adopted over wider areas. In addition to learning for itself, the Federal government profited from the experience of the states; the latter in turn often adopted successful Federal practice.

Thus, the existing financial structure was not built in a few short years according to the blueprint of a master architect. Instead, it is the end product of a long evolution, reaching back not only to the Colonial period of this country but beyond it to the development of civilization throughout the world. For this reason it is necessary to have in mind, at least in broad outline, the background of financial history.

For the present summary, financial developments in the United States may be divided into six periods, as follows:

1. Silver bimetallism, 1792–1834
2. Gold bimetallism, 1834–1862
3. Treasury-note standard, 1862–1879
4. Gold standard, 1879–1933
5. Quasi gold standard, 1933–1949

SILVER BIMETALLISM, 1792–1834

The First Monetary System. The Federal Constitution granted Congress the power to “coin money, regulate the Value thereof, and of foreign coin.” It also denied the states the right to issue money with the intent of creating the conditions for a uniform national currency.

The Mint Act of 1792 designated the dollar as the monetary unit and defined it as 24.75 grains of pure gold, and also as 371.25 grains of pure silver. The government was to purchase and coin all the gold and all the silver offered at these fixed prices without charge, except for brassage. Melting and export of the coins were unrestricted. Coins of both metals were made legal tender. Thus, a bimetallic monetary standard with a ratio of 15 to 1 by weight between silver and gold was established.

Soon after the Mint Act was passed silver began to decline in value in relation to gold in the world market. By 1803, the ratio was about 15.5 to 1, the basis on which France adopted bimetallism in that year. This situation brought Gresham's law into play with the result that silver, being overvalued by the Treasury, became the effective monetary standard until 1834. Only small amounts of gold flowed into the monetary system since it was more valuable for export and domestic industrial uses.

The mint coined a substantial amount of silver during this period but a large part of it was exported to the West Indies with the result that domestic trade was seriously inconvenienced by the lack of currency. The currency was composed of domestic and foreign coins, notes of the First and Second Banks of the United States, and notes of the state-chartered commercial banks—the largest element of all.

The First Central Banks. This period also witnessed the first experiment with central banking in the country. The First Bank of the United States was established in Philadelphia in 1791. Branches were subsequently opened in eight other cities. It was modeled rather closely after the Bank of England. The scope of its business was nearly the same and similar provisions applied to the restriction on loans to the Treasury, the limitation of debts in relation to capital, the redemption of notes in specie, and the assurance of private control. The First Bank issued currency notes, received deposits, and made loans to individuals, businesses, and the Federal government. In addition to loans, it acted as a fiscal agency for the Treasury. One-fifth of its shares was owned by the Treasury and the remaining four-fifths by private interests. Congress refused to renew the Bank's charter in 1811 and liquidation was begun in that year. Alexander Hamilton, the Secretary of the Treasury, was father of the plans for both the first monetary system and the First Bank.

Financial conditions after the closing of the First Bank became chaotic, partly as a result of the War of 1812 and partly because of the speculative overissuance of notes by state-chartered banks. Such issues

rose more than fourfold between 1811 and 1816, and many of them became badly depreciated. After an interim of five years, the Second Bank of the United States was established in 1816, also in Philadelphia. Branches were soon opened in 25 other cities. The organization and functions of the Second Bank were the same as those of the First Bank in all important respects.

Despite the fact that the Second Bank made a real contribution to the efficiency of the financial system, its charter was not renewed in 1836. Its chief contribution was provision of essential central banking services. These included loans to commercial banks and the government, depository for other banks and the government, and the issue of notes. The latter provided a uniform element of the currency at a time when it would otherwise have been chaotic, owing to the heterogeneous note issues of state-chartered banks. This, ironically, became one of the reasons for the downfall of the Second Bank. It tried to prevent the overissue of state bank notes by constantly returning them for redemption in specie. This aroused opposition among all speculatively disposed banks. Other political opposition developed, based in part on the popular antipathy toward the so-called moneyed interests. President Jackson became a bitter opponent, and he made its existence an issue of the presidential campaign of 1832. His veto of a charter-renewal bill passed by Congress in 1833 was the sentence of execution. He began immediately to remove government deposits from the Second Bank, and the charter expired in 1836.

Thus ended the first constructive attempts at central banking in the United States. The country was destined to pay a heavy penalty for the lack of such facilities for more than three-fourths of a century—until the Federal Reserve System was established in 1914.¹

GOLD BIMETALLISM, 1834-1862

A New Bimetallic Ratio. The lack of metallic currency in the preceding period led to a change in the bimetallic ratio in the Acts of 1834 and 1837 designed to bring gold back into the monetary system. The gold content of the dollar was reduced from 24.75 to 23.22 grains which changed the bimetallic ratio to 15.988 to 1, popularly known as 16 to 1. This new ratio overvalued gold and undervalued silver at the mint since the commercial ratio was about 15.5 to 1. Gresham's law was again

¹ See J. T. Holdsworth, *The First Bank of the United States* (Publications of the National Monetary Commission, Vol. IV, Washington, D.C., 1911); D. R. Dewey, *The Second Bank of the United States*, *ibid.*; and R. C. H. Catteral, *The Second Bank of the United States* (Chicago, University of Chicago Press, 1903).

brought into action in a different setting: gold moved into the monetary system and silver began to disappear. It was more valuable for export and domestic industrial uses. This situation became more acute after the gold discoveries in California around 1850 which resulted in a still larger undervaluation of silver by the Treasury. Subsidiary silver coins became so scarce that Congressional action was required. This came in the Act of 1853 which reduced the pure silver content of subsidiary silver coins enough to keep them in circulation—about 7 per cent.

Speculative Banking. This period witnessed a rapid and speculative growth of state-chartered banks. Approximately a fourfold increase in both the number of banks and the amount of note issues took place. The upward course, however, was not a smooth one. In the years following the panic of 1837, bank failures were widespread, especially in the West and South. For example, between 1839 and 1843 the number of operating banks in Michigan dropped from 28 to 2; and between 1840 and 1851 the number in Mississippi fell from 30 to 1.¹ Bank-note currency totaled \$149 million in 1837, but by 1843 it had shrunk to \$59 million.

Effect on the Currency. Without in the least minimizing the direct losses suffered by holders of notes of defunct banks, it is likely that the greatest loss to the whole country arose from the obstacle to trade presented by a chaotic currency. Much the largest part of the currency consisted of the inconvertible notes of 1,000 or more banks, operating under the diverse conditions and charters of the several states. The remainder consisted of specie, the notes of specie-paying banks, unauthorized notes of individuals and companies, and a disturbing amount of counterfeit money. There was a strong tendency for the specie and the good notes to pass out of circulation, leaving the field for the depreciated issues. Moreover, the circulation in one city or state was largely made up of notes issued by banks located at distant points. This resulted from the systematic efforts of the banks to avoid redemption by placing their notes in circulation as far away as possible—hoping, of course, that they might never get back.

It is difficult to picture in a few words the extreme difficulties of carrying on business with such a heterogeneous currency. All the hundreds of note issues circulated, with varying degrees of depreciation, from place to place and from day to day. In order to avoid accepting notes at more than their actual value, merchants subscribed to *Bank-note Detectors* which gave up-to-date information about current rates of depre-

¹ *Annual Report of the Secretary of the Treasury*, 1876, pp. 204-205.

ciation and about counterfeits. Before a payment could be received the *Detector* had to be consulted; and even then, owing to the constantly changing quotations, one party to the transaction usually suffered loss. There were two reasons for the discount that applied to most of the notes in circulation. The first was a lack of adequate redemption facilities. Even the notes of specie-paying banks often circulated below par at distant points, the discount corresponding to the cost of redemption. In addition to this factor, the notes of nonspecie banks exhibited varying discounts, depending on estimates of their soundness.

Money and Banking Experiments. Certain financial experiments of this period deserve mention in view of their subsequent influence on monetary and banking developments, *viz.*, (1) the Suffolk system, (2) the safety-fund system, (3) the free banking system, and (4) the Louisiana system.

The Suffolk System. Throughout this period of currency confusion New England enjoyed the advantages of a currency at par with standard money. This was a result of the Suffolk system of bank-note redemption established in Boston about 1825. The Boston banks appointed the Suffolk Bank to act as their agent to redeem at par the notes of New England country banks that would maintain an adequate deposit balance for the purpose. Most country banks joined the system rather than face the continuing redemption of their notes in coin. The Suffolk system not only contributed the advantages of a par currency at the time but it also taught the necessity of adequate redemption facilities. This feature was later incorporated in the National Bank Act of 1864.

The Safety-fund System. The safety-fund system, adopted in the State of New York in 1829, was the first experiment with insurance of bank notes and deposits. Each bank was requested to contribute annually $\frac{1}{2}$ per cent of capital stock to a common fund in custody of the state comptroller. The fund was to be used to guarantee the debts of all safety-fund banks. Losses were to be minimized by restrictions on capital, note issue, and loans; provision was also made for supervision by the state bank commission.

The fund was exhausted during the wave of failures, 1840–1842, but was supported by a bond issue of the State of New York. Eventually the State of New York was repaid in full, and the fund passed out of existence in 1866.

The main weaknesses of this early plan were (1) an inadequate assessment based on capital stock rather than on the amount of insured liabil-

ities and (2) the lack of thorough bank regulation as a means of minimizing losses.

The safety-fund system was a forerunner of programs of other states to insure bank notes and deposits, and also of the present Federal Deposit Insurance Corporation.

The Free Banking Law in New York State. In less than a decade after the safety-fund system was set up, important changes were again made in the banking laws of New York. The free banking law of 1838 embodied two reform features. The first opened the field of banking to any individual or association that met a few minimum conditions. Charters were to be granted under a general bank incorporation law instead of by a special act of the legislature. This change was designed to eliminate the political corruption often involved in securing bank charters, and the abuses of banking monopoly.

The second reform feature provided for a bond-secured note issue. Banks could issue notes on the basis of eligible securities to be deposited with the state comptroller. In case of failure, the securities were to be sold for the benefit of noteholders.

Both of these features made a mark on banking in the years to come. All the states eventually adopted the principle of free banking, and some of them utilized a bond-secured note issue. Also, some 25 years later these features were embodied in the National Bank Act.

The Louisiana System. Louisiana was one of the states that suffered most severely from bank failures in the years following the panic of 1837. It is not surprising, therefore, that the banking law passed in 1842 was an exceedingly stringent one. The administration of the law was placed in the hands of a banking board which was directed to examine each bank at least four times a year and to make an annual report to the legislature.

A number of restrictions were also placed on the banks. Loans were separated into two classes—those from capital and those from deposits. The former type could be made on mortgages, personal security, and other investments, while the latter was restricted to 90-day, nonrenewable loans. “Cash responsibilities” were to be backed by a specie reserve of at least one-third, with the remainder represented by short-term, nonrenewable commercial paper. This was the first legal reserve requirement against deposits imposed by any of the states. Directors voting for loans when these conditions were not observed were personally liable. To prevent speculative fever, the banks were not allowed to deal in sugar, cotton, produce, and stocks. Specie settlements were required weekly and exchanges of notes daily. A constant test of liquid-

ity was provided by the requirement that no bank could pay out the notes of another. Some of these regulations were unnecessarily harsh, but their enforcement soon developed an almost impregnable degree of banking strength. In the panic of 1857, Louisiana banks kept their doors open in spite of a country-wide suspension of specie payments. This achievement naturally drew attention, and some of the features of the Louisiana law were incorporated in the National Bank Act.

The Independent Treasury System. With the demise of the Second Bank of the United States in 1836, the deposits of the Federal government had to be kept in state-chartered banks which came to be known as "pet" banks. In 1837, the banks suspended specie payments, and in the long depression that followed, the Treasury suffered losses and inconveniences from bank failures. This situation led to the establishment of an Independent Treasury with subtreasuries in leading cities by the Acts of 1840 and 1846. Under the new system the Federal government could receive taxes and other payments only in specie and Treasury notes, and all public funds had to be kept in its own treasuries, mints, and customhouses.

In view of the lack of a central bank and the chaotic state of commercial banking, this system provided a necessary service at the time. But it was far from an ideal system because of the alternating inflow and outflow of bank reserve money. This continuous disturbance of the money market was reflected in widely fluctuating interest rates. The Independent Treasury system remained in operation until 1921, when it was abolished.

The Price Level. A glance at the course of prices during the first two periods is now in order. Wholesale prices remained quite stable between 1797 and 1811, but the War of 1812 produced a sharp increase of 58 per cent between the end of 1811 and 1814. This was followed by a long downtrend of 62 per cent until the first quarter of 1843. A rise of 29 per cent occurred between 1843 and midyear 1862, in large part a result of the increased gold output after 1848 (see Chart 1, page) 30.

TREASURY-NOTE (GREENBACK) STANDARD, 1862-1879

Greenback Issues. One of the means of financing the Civil War was the issue of legal-tender Treasury notes (greenbacks) which were not convertible into specie. In all, \$450 million were authorized; the maximum amount outstanding reached \$431 million at midyear 1864. Specie redemption was suspended by the banks and the government at the end of 1861. With this step the country left the bimetallic monetary standard, and the ultimate standard became the legal-tender Treasury notes.

After the Civil War the amount was reduced from time to time, and it was finally fixed by Congress in 1878 at \$347 million, where it remains today (1949).

As in all major wars, commodity prices rose sharply—170 per cent between midyear 1861 and the peak in the autumn of 1864. The price of gold in terms of greenbacks rose somewhat more than commodity prices—185 per cent in July, 1864. After that time the prices of commodities and gold followed a declining course until both were at approximately the prewar level at the time of resumption of gold payments in 1879.¹

The Specie Resumption Act which was passed in 1875 fixed the date of resumption on January 1, 1879. Secretary John Sherman sold nearly \$100 million of bonds in order to build up a gold reserve of about 40 per cent. A couple of weeks before the awaited date, the greenbacks rose to par in terms of gold, and resumption was actually achieved without many requests for payment in gold. This placed the country on the gold standard, since the free coinage of silver had been discontinued in the Coinage Act of 1873.

The National Banking System. The national banking system was created during the Civil War by the Acts of February, 1863, and June, 1864, partly as a method of selling Federal bonds. Other more basic aims that actuated Secretary Salmon P. Chase, the leading proponent, were the creation of a safe and uniform currency and the establishment of a sound banking system for the benefit of all, including the Treasury.

Organization and Powers. The new law embodied the principle of free banking, following the pattern set by New York State in 1838. Five or more persons were permitted to organize a national banking association upon meeting minimum capital requirements and complying with certain routine formalities. Capital requirements ranged from \$50,000 to \$200,000, depending on the size of city. At least one-half of the capital stock had to be paid in before beginning operations; the remainder in not more than five monthly installments. Shareholders were made subject to double liability as a safeguard to depositors.

Subject to some restrictions, a national bank was permitted to engage in a wide range of banking operations. These included note issue, the receipt and transfer of deposits, loans, investments, and foreign exchange.

National Bank Notes. Before commencing business, every national bank was required to deposit United States bonds with the U.S. Treas-

¹As measured by the wholesale price index of Professors G. F. Warren and F. A. Pearson available in Standard & Poor's Corporation, *Basic Statistics Section*, p. 71.

ury to an amount not less than \$30,000 nor less than one-third of paid-in capital stock. In return, the association was entitled to receive from the Comptroller of the Currency circulating notes up to 90 per cent of the market or par value of the bonds, whichever was lower. No bank, however, could issue notes in excess of its capital stock. General acceptance of the notes at a uniform value was ensured by requiring that each bank arrange for redemption in lawful money in one of seventeen leading cities as well as at its own counter. In addition, the notes were made receivable at par by all national banks and by the government for all dues except duties on imports. In these provisions, designed to ensure parity, the influence of the Suffolk system of New England is easily recognizable. Noteholders were safeguarded against loss by the government's obligation to redeem the notes of failed banks in lawful money. In turn, the government was protected by the deposited Federal bonds which were forfeited in case of failure, and which might either be canceled or sold at the Comptroller's discretion. Furthermore, if the pledged bonds should prove inadequate to reimburse the government, the deficiency was covered by a prior lien upon all assets of the failed bank. The principle of a bond-secured currency, it will be recalled, was first applied in this country in 1838 by the State of New York.

Legal Reserves. Definite minimum legal reserves, varying with location, were specified in the act. National banks in New York City were obliged to keep in their vaults a reserve of lawful money equal to 25 per cent of their deposits and notes in circulation. In a group of 16 other leading cities, later known as "reserve cities," the same percentage was applied but one-half of the reserve might be maintained as a deposit in an approved New York City national bank. For all other associations, subsequently called "country banks," the minimum reserve was fixed at 15 per cent, two-fifths of which was to be kept in the bank's own vault. The remaining three-fifths might be deposited in banks located in the specified leading cities.

The fact should especially be noticed that reserve regulation was applied to deposits as well as to notes. This reflected the growing use of checks and also public recognition of the essential similarity between deposit and note liabilities. The wave of bank failures that accompanied the panic of 1857 was fresh in mind, and many of them were known to have resulted from heavy deposit withdrawals. Before the Civil War only two states required reserves against deposits. Louisiana took the lead in 1842 by specifying that a reserve of one-third of all "cash responsibilities" be kept in the vault. And in 1858, Massachusetts applied a 15 per cent reserve to both notes and deposits.

A significant reduction in the legal reserve for national bank notes was made by the Act of June, 1874. The only required reserve became a 5 per cent redemption fund of lawful money with the Treasury. Since this fund counted as legal reserve against deposits, the net effect was to reduce legal reserves by an amount equal to the prescribed percentages applied to the amount of outstanding notes.

Loan and Investment Restrictions. National banks were required to purchase Federal bonds up to at least one-third of capital stock.¹ Apart from this, there was no regulation of investments in bonds and other obligations. The holding of corporate stocks was prohibited. Real estate holdings were restricted to the bank building and to such property as might come into the bank's possession in the process of debt collection. Mortgages upon real estate were prohibited except as a means of securing debts previously contracted. In addition, three restrictions were applied to loans: (1) loans to one person or firm were limited to 10 per cent of the capital stock of the bank; (2) loans secured by a bank's own shares, and the purchase or holding of such shares, were prohibited except in preventing loss upon previously contracted debts; (3) the rate of interest upon loans could not exceed that specified by law for state-chartered banks and, in the absence of state limitation, it could not exceed 7 per cent per annum.

Government Depositaries. The Secretary of the Treasury was authorized to designate any national bank as a depositary for Federal funds and as a financial agent. Associations so designated were required to furnish satisfactory security in the form of United States bonds, or otherwise, for the safekeeping of public money and the faithful performance of agency functions.

Government Supervision. Another notable feature of the National Bank Act was the extension of Federal supervision beyond that exercised by any of the states, with the possible exception of Louisiana. The execution of the law was to be effected by a bureau of the U.S. Treasury Department, headed by the Comptroller of the Currency. He was given a wide range of power in the administration of the Act. In order that he might have sufficient information concerning each bank, the associations were required to supply monthly and quarterly statements of condition. Furthermore, he was empowered to arrange

¹ This was modified in 1882 so that no bank was required to buy more than \$50,000 of Federal securities, and those with \$150,000 capital or less were required to purchase bonds to the amount of one-fourth of capital stock. This provision stood until the Federal Reserve Act of December, 1913, which removed the necessity for purchasing Federal securities except as security for national bank notes and Federal deposits.

for a thorough examination of every association as often as deemed necessary.

The force of publicity was utilized by requiring that each bank publish a detailed quarterly statement in a local newspaper and that the Comptroller publish the aggregate quarterly statement. In addition, the Comptroller was directed to make an annual report to Congress.

Growth of National Banks. The progress of the national banking system during the first two years was a source of great disappointment to its sponsors since the bulk of banking capital remained under state charter. It became evident that there was an insufficient inducement offered state banks and that the system would fail of its purpose unless new measures were taken to stimulate charter conversions. These measures were embodied in the Act of March, 1865. A tax of 10 per cent was imposed upon notes of state-chartered banks paid out after July 1, 1866. Owing to the large importance of circulation at the time, this prohibitive tax was effective in forcing most of the state banks into the system. In the year following January, 1865, the number of national banks increased from 638 to 1,582, mainly because of state-bank conversions. But with most conversions effected, growth in the decade that followed was much slower. On October 1, 1878, there were 2,053 national banks with resources of \$1.8 billion.¹ During this period national bank notes displaced the heterogeneous state bank issues, and the country came to enjoy for the first time the benefits of a currency at par with the monetary standard.

GOLD STANDARD, 1879-1933

Return to Gold. With the resumption of gold redemption of currency in 1879, the United States returned to the same monetary standard in effect that existed during the pre-Civil War period, 1834-1861. In this period it was designated gold bimetallism because gold was the only standard money metal even though the dollar was also defined in terms of silver. The latter metal, being undervalued by the Treasury, moved out of monetary uses. But with the omission of silver from free coinage in the Act of 1873, the silver dollar was no longer a legal ultimate standard. Consequently, on January 1, 1879, the standard dollar became legally and actually the value of 23.22 grains of pure gold. Except for short interruptions in the panics of 1893 and 1907, and during the First World War, this price of gold—equivalent to \$20.67 per ounce—served as the standard until the depression that culminated in 1933. This

¹ *Finance Reports of the U.S. Treasury*, 1876, pp. 271-272; 1878, p. 143.

statement may well be extended to the entire century, 1834–1933, if the Greenback period is also omitted.

The Silver Movement. The new gold basis which was launched so solidly in 1879 was destined to an uneasy existence for the first two decades. Powerful forces were back of the movement to restore bimetallism. One of the most important was the down trend of prices which persisted until 1896. This development lined up the debtor class, and especially the West, with the silver interests. Moreover, the latter were politically more aggressive owing to the decline in the value of silver. The chief reason for this decline was the reduction in world monetary demand as important countries demonetized silver and turned to gold. The German Empire adopted the gold standard in 1871; France and Italy in 1874; and other smaller countries shortly followed suit. A less important reason was the discovery of new silver mines with a resultant rise in production. It became profitable to coin silver at the old 16 to 1 ratio before gold redemption in 1879, and it became increasingly so year by year. The commercial ratio between the two metals reached 35 to 1 in 1898.

The silver agitation finally crystallized in the Bland-Allison Act of 1878 which required the Treasury to purchase between \$2 million and \$4 million of silver monthly. This Act remained in force until July, 1890, by which time \$378 million silver dollars had been added to the money stock.

The silver interests were not satisfied, however, with the Bland-Allison Act. They wanted nothing short of free coinage at the old 16 to 1 ratio. This eventuated in another compromise measure, the Sherman Act of July, 1890, which required the Treasury to increase silver purchases to 4.5 million ounces monthly. The silver was to be bought at the market price with Treasury notes which were redeemable in either gold or silver at the option of the Treasury. This law remained in operation until November, 1893, and silver purchases amounted to \$218 million at the mint price of \$1.29 per ounce.

The panic of 1893, combined with the silver purchases, seriously threatened the gold standard. President Cleveland summoned Congress to a special session in the emergency, and was able to secure repeal of the Sherman Act effective November 1, 1893. His monetary troubles were not solved by this, however, since doubts arose concerning the ability of the country to stay on gold. The gold reserve was drained down to only \$42 million in February, 1895, by the "endless chain" of presenting Treasury notes for redemption in gold. The Treasury then paid out the notes, and the process was repeated. The day was finally

saved by the sale of bonds to a banking syndicate, headed by J. P. Morgan & Company, which agreed to use its influence to prevent both the internal and external gold drain.

The silver issue was the dominant one in the presidential campaign of 1896. The defeat of William Jennings Bryan, the proponent of free silver, by William McKinley who stood for gold stilled the silver issue until 1933 when it was revived once again.

The monetary standard during the period 1878–1900 is sometimes called the “limping gold standard” on account of the strength of the silver movement. The silver dollar and the Treasury notes of 1890 were both legal tender, so that a continuation of silver purchases would have meant the displacement of the gold standard by silver.

The Gold Standard Act of 1900. The Gold Standard Act of March, 1900, ended the long “battle of the standards,” at least until 1933. The gold dollar of 23.22 grains of pure gold (25.8 grains of standard gold, 0.9 fine) was explicitly made the ultimate standard, and all other currency was to be maintained at parity with it. A gold fund of \$150 million was set aside for the redemption of United States notes and the Treasury notes of 1890. Provision was also made for retirement of the latter and the substitution therefor of silver certificates.

Monetary and Banking Reform. The suspension of gold payments by the banks in the panic of 1907 focused attention on financial weaknesses which had been responsible for a similar suspension in 1893 and for threatened suspensions in 1884 and 1890.

Monetary and Banking Weaknesses. There were three serious defects in the monetary system before the Federal Reserve System was established in 1914, *viz.*, (1) reserve money defects, (2) currency inelasticity, and (3) the lack of central monetary regulation. All these arose from the absence of a central bank in the country.

1. The worst reserve money defect was the lack of surplus bank reserves that could be utilized in emergencies. The system of redepositing legal reserves led to heavy concentration in reserve city banks, and especially in New York City. In 1907, three-fourths of all bankers' deposits was held by six banks in New York City. These banks, being profit-making institutions, loaned and invested these funds in normal years, and maintained only nominal amounts of reserve in excess of the 25 per cent legal requirement to be kept in vault. Worst of all, there was no way by which total bank reserves could be enlarged when such a need arose.

Legal reserve requirements were also too rigid. The National Bank Act prohibited a bank with deficient reserve from expanding loans and

paying dividends. The Comptroller of the Currency was also given power to liquidate a bank whose reserve was deficient for 30 days. This rigidity, combined with the lack of an adequate surplus reserve, led the banks to suspend gold payments before they had actually utilized much of the reserve on hand. They were also disposed to aggravate a panic situation by sharp credit contraction. In addition, there was no effective method of equalizing reserve money among the banks. Many banks had excess reserves when suspension occurred while others had reserve deficiencies.

2. The second serious defect of the monetary system was the inelasticity of the currency. No element of it possessed the features of expansibility and contractility to meet the changing currency needs of the country. When currency requirements increased in prosperous years the banks were likely to have their reserves drained for use as currency. This undermined their lending power, often compelled contraction in the face of legitimate credit needs, and sometimes brought about suspension of gold redemption—especially if currency hoarding occurred.

The national bank notes, which might have provided elasticity, actually had a tendency to change inversely with currency needs. The factors that mainly governed the total amount of notes were the supply of United States bonds eligible to serve as security, the price of these bonds, and the amount of capital stock of the banks. The last limit, however, was usually ineffective, being higher than the others. The Federal debt was usually retired in prosperous years and enlarged in lean years to cover Treasury deficits. Moreover, the debt-retirement program tended to raise the price of bonds and hence to make the issue of notes less profitable at the time when they were most needed.

3. The last main defect was the absence of a central monetary and banking authority with power to regulate the amount of money, the reserve position of the banks, and other aspects of the monetary situation. This lack of a coordinating body, combined with the two preceding defects, made the financial system peculiarly vulnerable to any unusual disturbance.

An urgent need for money-market control was also evident in connection with the operations of the U.S. Treasury. Beginning in 1865, the Treasury divided its funds between approved national banks and the subtreasuries, the proportion being determined by the Secretary of the Treasury. In practice, this arrangement produced undesirable disturbances in the money market often marked by sharp rate fluctuations. When tax receipts poured in and exceeded expenditures, reserve cash was withdrawn from the market. This usually led to sharply higher

rates. On the other hand, when expenditures exceeded receipts, reserves of the banks increased and rates fell. Similar effects were produced whenever the Secretary of the Treasury shifted funds from the banks to the subtreasuries, or from the latter to the banks. Since the Secretary was rarely well informed concerning Treasury relations with the money market, this power was often used with disturbing consequences.

The Aldrich-Vreeland Act. The immediate response of Congress to the sentiment for reform which arose after the financial panic of 1907 was the Aldrich-Vreeland Act of May, 1908. It was no more than a stopgap measure to serve until more comprehensive reforms could be undertaken. It provided for additional currency designed to give elasticity in an emergency. Under certain restrictions, national banks were permitted to secure notes from the Comptroller of the Currency on the security of approved assets other than United States bonds. During the first five years there was no occasion to use these notes, but nearly \$400 million were issued in 1914 after the outbreak of the First World War. With the passing of the crisis, they were retired rapidly. This process was speeded by the graduated tax that applied to them and by the availability of the new Federal Reserve notes.

More important than the note-issue provisions of this Act, was the creation of the National Monetary Commission, consisting of 18 members chosen equally from the two Houses of Congress. The Commission was directed "to inquire into and report to Congress at the earliest date practicable, what changes are necessary or desirable in the monetary system of the United States or in the laws relating to banking and currency." Under this mandate it enlisted the aid of a staff of experts, drawn from academic and practical banking circles, who made the most comprehensive study of banking that has ever been attempted. Some forty volumes were published covering the banking systems of all leading countries in addition to an exhaustive analysis of the financial system of the United States. With these studies as a basis, the Commission prepared a definite bill which embodied its reform proposal. This bill was reported to Congress in January, 1912, and was known as the Aldrich Plan after Senator Nelson W. Aldrich who was chairman.

In a very real sense, the Aldrich Plan was a forerunner of the Federal Reserve System. It provided for a central bank to be known as the National Reserve Association with power to perform the established functions of leading central banks in other countries, including note issue. The Aldrich bill was never reported out of the committees of Congress, however, owing to the loss of Republican control. Actual reform legis-

lation was postponed until the Democrats, led by President Wilson, came into power in 1913.

The Federal Reserve Act. The financial reform movement finally culminated in the passage of the Federal Reserve Act on December 23, 1913. This was one of the most significant pieces of financial legislation in the history of the country, and it marked a new epoch in monetary and banking developments. Its importance is such that Chapters X, XI, and XII are entirely devoted to the subject, as well as parts of other later chapters. Suffice it to say here that the new system largely remedied the main weaknesses of the old one, *viz.*, faulty organization of bank reserves, inelasticity of currency, and the absence of a central monetary authority. Instead of one central bank, twelve coordinate central banks were created. They were given powers sufficient to perform all essential central banking functions, including note issue. A central monetary and banking authority, the Federal Reserve Board, was created to supervise and coordinate the whole system and to provide a measure of over-all monetary management.

Financing the First World War. At midyear 1916 the interest-bearing Federal debt amounted to \$972 million; the previous peak was during the Civil War when it was \$2,322 million. By midyear 1919 the financing of the First World War expanded the debt to \$25.2 billion. Total Federal expenditures between April 6, 1917, and October 31, 1919, were \$35.4 billion. Taxes provided only about one-third—\$11.3 billion. The rest was provided by borrowing from the public and the banks. Two-thirds of the additional debt was represented by bonds, offered in four Liberty Loans. The rest was divided between Treasury notes, running from one to five years, and certificates of indebtedness, maturing in less than one year.

About \$10 billion of Federal expenditures was represented by credits to Great Britain, France, Italy, and other allies. These debts were subsequently canceled when it became impossible under postwar conditions for the debtor countries to pay.

The establishment of the Federal Reserve System in 1914 was especially fortunate from the standpoint of war finance, since the old system would have been wholly inadequate. The Federal Reserve banks not only loaned directly to the Treasury but they created new reserve money for the commercial banks. This placed the latter in position to buy Federal securities and to loan heavily to their customers for the purchase of the Liberty Loans. To be more specific, the Federal Reserve banks increased their holdings of United States securities between the end of 1916 and 1919 by \$245 million and their loans of reserve money to

commercial banks by \$2,187 million. All other banks increased United States securities between midyear 1916 and 1919 by \$5.1 billion, and their loans—largely to buy Federal securities—by \$6.7 billion.¹

Commodity prices, which had been in a slow uptrend since 1896, were greatly stimulated by the war. They doubled between 1914 and 1919, and then went on to a peak in May, 1920—an increase of 146 per cent over 1914 (see Chart 2, page 31).

The most important single factor responsible for the sharp rise of prices was the expansion of the stock of payment money (currency and demand deposits) which rose from \$11.7 billion at midyear 1914 to \$22.2 billion in 1919 and \$24 billion in 1920.² The main cause behind this was borrowing from the banks for war purposes.

The 1920's: The New Era. A sharp depression developed during the last part of 1920 and lasted until the last quarter of 1922. This was accompanied by a decline of 45 per cent in wholesale prices (see Chart 11, page 359). The remainder of the 1920's was marked by well-sustained business activity, a relatively stable level of prices, and a growing business optimism. In fact, the belief became general that the new monetary controls of the Federal Reserve System had solved the problem of depression. These controls were given much of the credit for heading off recessions in 1924 and 1927.

Another billion dollars was added to the gold stock in these years on top of the billion which had been gained during the war. This made for an abundant supply of bank credit.

Despite reduction in tax rates, the Federal budget showed a surplus. This permitted a reduction in the interest-bearing government debt from \$25.2 billion at midyear 1919 to \$15.9 billion in 1930.

During the last 3 years of the period, 1927–1929, the overoptimism culminated in the greatest stock market boom in history. Industrial stocks doubled and public utilities trebled in price. Many issues were bid up to a level of 30 to 40 times current earnings when 8 to 15 times earnings had been regarded as a fair price for quality stocks. Much of the unwarranted security speculation was financed by security loans of the banks.

With the hindsight of the sober 1930's, the previous decade was dubbed "the new era." This symbol pointed a cynical finger at the unbounded optimism which visualized everything as "bigger and better" in a depressionless upward trend.

¹ Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*, pp. 18, 337–338.

² *Ibid.*, p. 34.

The Great Depression. Few people were wise enough to realize in September, 1929, when stock prices reached the crest, that the world stood on the brink of an economic abyss. Time was destined to unfold the deepest and longest depression on record, much of it in retribution for the excesses of the late 1920's. Between 1929 and 1933 the national income declined 55 per cent; manufacturing employment by 44 per cent; manufacturing payrolls by 67 per cent; industrial production by 52 per cent; wholesale commodity prices by 37 per cent; and common stock prices by 81 per cent¹ (see Chart 11, page 359). A decline of this magnitude could not take place without very serious repercussions on the financial system.

One of the most crippling effects was the increased rate of commercial bank suspensions—9,096 with deposits of \$6.8 billion during the period 1930–1933. Nearly half of these occurred in 1933 when the crisis came to a head, and it was necessary to close all banks in the country for a week or more. The suspensions in this period represented 38 per cent of the number and 13 per cent of the commercial bank deposits in existence at the end of 1929.

The principal cause of this wave of failures was the fact that bankers were, like others, imbued with speculative overoptimism during the late 1920's. This led them to acquire loans and investments that were almost certain to default except under conditions of a rising national income. Bank failures and currency hoarding also interacted to undermine the liquidity of many banks. Between March, 1931, and 1933 currency in circulation rose from \$4.3 billion to \$6.7—about 60 per cent. This forced most banks to refuse credit that should have been granted, to call loans, and to sell securities in a declining market. These actions in turn unleashed succeeding layers of liquidation in the commodity and security markets. They also led to a sharp contraction in the amount of deposit money and in its velocity of circulation. The former declined from \$22.8 billion at the end of 1929 to \$14.4 billion at midyear 1933, or by 37 per cent; annual velocity declined even more—from 53.6 in 1929 to 26.8 in 1933, or by 50 per cent.² Thus, monetary contraction—both in amount and efficiency of use—was the most important single factor responsible for the steep decline in prices.

In order to retain perspective, it is desirable to see what was happening in other countries. A financial crisis developed in Europe beginning

¹ Standard & Poor's Corporation, *Basic Statistics Section*, 1948.

² The statistics utilized in this and the preceding paragraph are drawn from Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*, 1943.

in May, 1931, when the Credit Anstalt, the largest bank in Austria, failed. All banks in Germany were closed in July, after which doubts arose concerning the ability of Great Britain to honor the gold standard. Gold withdrawals during the next two months exceeded £200 million (about \$1 billion), and on September 21, 1931, Great Britain suspended gold payments. Sterling exchange declined in the next four days from \$4.85 to \$3.76. Before the end of the month the "sterling-bloc" countries—Norway, Sweden, Denmark, India, Egypt, and British Malaya—took similar action. Other countries followed until the United States and France were the only important nations on the gold standard during 1932. This depreciation of other currencies in terms of the dollar became an important cause of the deepening depression. The United States was an expensive place in which to buy as compared with the depreciated-currency countries, because their currencies declined without a corresponding rise of prices. This placed our export trade at a serious disadvantage.

In general, the Federal government followed a passive policy with regard to the depression until the spring of 1933, proceeding on the theory that natural forces would eventually come to the rescue and that intervention might do more harm than good. Two steps, however, of a remedial or rescue nature were taken.

The first of these was the establishment of the Reconstruction Finance Corporation in January, 1932. It was an agency through which government credit could be extended to financial institutions, business, and agriculture in order to prevent the failure of sound enterprises, and to promote recovery. By midyear 1932 more than \$1 billion of loans was authorized, three-fifths of which was to banks. The capital of the Reconstruction Finance Corporation was subscribed by the Treasury, and it was also authorized to issue government-guaranteed obligations. The size and scope of its activities were enlarged as the depression wore on.

The second positive step was taken by the Federal Reserve System in the shape of a program designed to enlarge the legal reserves of commercial banks and to lower interest rates. This was based on the theory that liquidation pressures arising from deficient bank reserves would be replaced by expansionary tendencies growing out of excess reserves. Banks would be encouraged to grant loans liberally at low rates and to buy investment securities. The availability of credit at low cost would encourage enterprise, and hence make for business recovery. More concretely, the program consisted of Reserve bank purchases of more than \$1 billion of United States securities between March and August, 1932. The Glass-Steagall Act, approved February 27, 1932, made this step possible.

These measures, however, were "too little and too late." Bank failures and currency hoarding gained momentum again during early 1933. During February bank moratoria were called first in Louisiana, then in Michigan, and later in several other states. By Inauguration Day practically all banks were closed. The first official act of President Roosevelt was the declaration of a national emergency, suspending all banking operations for a period of four days, and prohibiting the hoarding or export of gold and silver. The bank holiday was subsequently extended until March 13, when the "sound" banks were opened by successive stages.

Review Questions

1. What provisions with respect to money are included in the Federal Constitution?
2. Summarize the main features of the first period, 1792-1834, in the financial development of the United States.
3. Give the high lights of the second period, 1834-1862.
4. What effect did the change in the bimetallic ratio by the Acts of 1834 and 1837 have on the monetary system?
5. Describe the obstacles to trade which grew out of the era of speculative banking.
6. What features of the Suffolk system were later incorporated in the National Bank Act?
7. Support the statement that the safety-fund system may be regarded as a forerunner of the present Federal Deposit Insurance Corporation.
8. What reform features of the free banking law of 1838 in New York were later embodied in the National Bank Act?
9. Summarize the notable features of the Louisiana system.
10. Describe the Independent Treasury system. What were its advantages and drawbacks?
11. Study Chart 1, page 30, and indicate the course of commodity prices during the first two periods, 1792-1834 and 1834-1862.
12. Give a general characterization of the third period, 1862-1879.
13. Explain the use of Treasury notes (greenbacks) to finance the Civil War.
14. Summarize the main provisions of the National Bank Act.
15. What monetary standard prevailed in the United States during the fourth period, 1879-1933?
16. Discuss the silver movement, 1878-1896.
17. Give the principal provisions of the Gold Standard Act of 1900.
18. Point out the major defects in the monetary system of the United States before the Federal Reserve System was established in 1914.
19. Describe the methods by which the First World War was financed.
20. What were the main features of financial developments in the United States during the "new era" of the 1920's?
21. Summarize the events of the great depression, 1930-1933?

CHAPTER IX

FINANCIAL DEVELOPMENTS: A SKETCH (*Continued*)

QUASI GOLD STANDARD, 1933-1949

During this period the gold standard was either suspended for repairs or lacked some essential feature of the traditional gold basis. Until near the end, also, the President had the power to change the gold content of the dollar at any time, which made the basis a tentative one. For these reasons the period is labeled "quasi gold standard."

Gold Suspension and Devaluation. With President Roosevelt's proclamation on March 6, 1933, prohibiting the export of gold, the country formally left the gold standard. This step was not forced by necessity since the gold stock was as large as it had been at the end of 1929 when the business downturn began. Rather, it was a precautionary policy during a period of great uncertainty.

The Banks Reopen. With all banks closed, Congress rushed through the Emergency Banking Act, approved March 9. The principal provisions may be summarized as follows:

First, extensive power was granted the President to regulate operations of member banks, gold movements, and foreign exchange transactions during the national emergency. Also, the Secretary of the Treasury was permitted to call in all gold and gold certificates at his discretion.

Second, the Comptroller of the Currency was given emergency powers with respect to the liquidation, reorganization, and opening of national banks.

Third, provision was made for an emergency currency, Federal Reserve bank notes, which was not redeemable in gold and required no gold reserve. It was to be backed by United States securities and other earning assets of the Federal Reserve banks.

Last, Federal Reserve banks were authorized to lend reserve money to member banks and nonmember banks on the security of any acceptable assets.¹

In particular, it should be noticed that the Emergency Banking Act safeguarded the banks against a renewed public demand for currency

¹ Loans to nonmember banks were authorized by an amendment to the Act on March 23.

by opening wide the doors of the Federal Reserve banks for advances in the form of currency or reserves. The new machinery made possible a wholesale conversion of deposits into currency should the public so desire.

In accordance with a publicly announced plan, sound banks were granted licenses in successive stages beginning March 13. On the first day, banks located in Federal Reserve bank cities were opened; on the next day, banks located in some 250 cities having an organized clearing house association were opened; and on the third day, banks located elsewhere were opened. There were, however, many instances of delay for a few days owing to inadequate information and the tremendous amount of routine. By March 29 about 12,800 of the 18,000 banks operating before the holiday had licenses to operate on an unrestricted basis. Nearly \$5 billion of deposits were still tied up.

A rapid return flow of currency set in immediately. When the public became convinced that currency was available, they no longer desired to hoard it. By March 29 the amount outside the banks had fallen \$1.2 billion, and by midyear it was back to the amount of the previous year. Under these circumstances there was no real need to issue the emergency currency. But being available, it was issued by the Reserve banks to the amount of \$209 million by the end of 1933. After that, the notes were gradually retired as they became worn and unfit.

The Inflation Act, May, 1933. One of the oft-expressed aims of the new Administration was to bring about a rise in prices as part of the recovery program, and also as a means of relieving the enlarged burden on debtors. The Act of May 12, 1933, gave the President large inflationary powers to be used at his discretion, as follows:

1. Arrange for the purchase of \$3 billion additional U.S. government obligations by the Federal Reserve banks.
2. Direct the issuance of greenbacks (United States notes) up to \$3 billion for the purpose of meeting maturing Federal obligations.
3. Provide for bimetallism, *i.e.*, the unlimited coinage of gold and silver at a fixed mint ratio.
4. Reduce the gold content of the dollar by as much as 50 per cent.
5. The Federal Reserve Board (virtually controlled by the President) was authorized to change the reserve requirements against demand and time deposits.

In addition to the foregoing provisions, all coins and currency issued under the authority of the United States were made legal tender for private and public debts. Prior to this most forms of currency had only limited legal-tender power.

There is little doubt that a full use of these powers would have been capable of producing a substantial rise of prices. But such use as was made of them only served to enlarge bank reserves without much immediate effect on the volume of bank credit or prices. No greenbacks were issued, and bimetallism was not established, although important concessions were made to the silver interests. The first power to be utilized was that relating to the Federal Reserve banks. Beginning in the last half of May the Federal Reserve banks resumed their security-purchasing program which had been held in abeyance since August of the preceding year. By mid-November their holdings of United States securities were enlarged by \$600 million to the record total of \$2.4 billion. They remained at about that level until war finance once again dominated the scene. The Reserve banks also kept their discount rates low and followed other policies designed to encourage monetary expansion and business recovery, with the exception of midyear 1936 to midyear 1937 when legal reserve requirements were sharply increased.

Gold Policy. The policy of mobilizing all monetary gold in the hands of the Treasury and the Federal Reserve banks was pursued vigorously after the bank holiday. By a series of executive orders and Treasury regulations it became unlawful to hold gold bullion, gold coin, or gold certificates except under Treasury licenses, which were granted only for narrowly restricted purposes. The export of gold was virtually prohibited until devaluation of the dollar at the end of January, 1934. Little change occurred, therefore, in the monetary gold stock of the country up to that time.

As a preliminary to the gold devaluation which was to come, Congress passed a Joint Resolution on June 5, 1933, declaring that the gold clause in private and public debt contracts was annulled, that debts having the gold clause could be paid in legal-tender currency, and that this clause could not be included in future money contracts. The gold clause in question called for payment in gold dollars of the same weight and fineness as existed at the time the contract was made, or in equivalent value. It was included in most bond indentures after the uncertainties raised by the struggle for a cheaper silver standard beginning in the 1870's. Assuming a devaluation of 50 per cent, creditors holding gold-clause obligations would have been entitled to two currency dollars for each dollar of debt. In addition, they would have gained from the rise in the purchasing power of the dollar if the loan had been made at any time during the preceding 30 years. On a loan made during the 1920's their gain from this latter factor would have been about 50 per cent in 1933. Thus, assuming a national need for devaluation, the gold-clause

contracts were an obstruction to the accomplishment of a desirable public policy.

The creditors and others opposed to abrogation of the gold clause stressed the inviolate nature of a contract willingly agreed to by both parties. With regard to the Federal government, they protested the wisdom of undermining its credit by repudiation of obligations.

The constitutionality of the Joint Resolution was passed upon by the Supreme Court in February, 1935. It upheld the power of Congress to annul the gold clause in all obligations, except those of the Federal government. But it also held that the owner of a Federal gold obligation was entitled to payment only in legal-tender currency unless he could show damages. Since he could not do so unless the purchasing power of the dollar fell substantially, the gold clause was effectively annulled. A subsequent Joint Resolution of Congress in August, 1935 withdrew the consent of the United States to be sued with respect to its securities and currency.

Without attempting at this point to pass judgment on the policies of devaluation and abrogation of the gold clause in contracts already in existence, the wisdom of prohibiting such a clause in future loan contracts seems clear. Otherwise, the power of the government to manage its money in the best interests of the nation is unduly limited.

In October, 1933, the Administration announced a gold-buying program as part of the general program to raise commodity prices. The Reconstruction Finance Corporation started on October 25 to purchase gold at \$31.36 per ounce which was 52 per cent above the former price of \$20.67 per ounce and \$1.56 higher than the current market price. Then by a succession of steps the official price was raised to \$34.45 by January 16, 1934. This program was a prelude to the official devaluation of the gold dollar which shortly followed.

The legal basis for devaluation was provided by the Gold Reserve Act, approved January 30, 1934. The main provisions may be summarized as follows:

1. The gold dollar was to be reduced in weight between 40 and 50 per cent.
2. Title to all gold coin and bullion in the country was transferred to the Federal government in return for gold certificates to be issued at the old statutory price of \$20.67 per ounce of fine gold. Since practically all gold outside the Treasury was in the hands of the Federal Reserve banks, the chief immediate effect of this provision was the conversion of their gold reserves into gold-certificate reserves.
3. Any profit that should accrue from a devaluation of the dollar was

to be appropriated by the Treasury; likewise, the Treasury was to cover any losses entailed by increasing the weight of the dollar.

4. In the event of devaluation, a \$2 billion gold fund was established out of the devaluation profit to be administered by the Secretary of the Treasury to the end of stabilizing the foreign exchange value of the dollar. The fund might be expended at the Secretary's discretion for any purpose in connection with such stabilization, including the purchase of obligations of the United States, and he was empowered to deal in gold, foreign exchange, and other credit instruments.

5. The circulation or coinage of gold was henceforth prohibited and the existing stock of gold coins was to be converted into gold bars. Redemption of currency in gold was prohibited except by the Reserve banks under Treasury regulations.

With the legislative background thus prepared, the President immediately (January 31) issued a proclamation reducing the legal weight of the gold dollar from 25.8 to $15\frac{5}{21}$ grains of standard gold (from 23.22 to 13.714 grains of pure gold). The dollar was thus devalued to 59.06 per cent of its former weight which corresponded to a price of \$35 per ounce of pure gold. According to official computations, the dollar value of the monetary gold stock in the United States was thereby marked up from \$4,033 million to \$6,841 million, or by \$2,808 million. Although the proclamation was to remain in force until repealed or modified, the President specifically reserved the right to change the weight of the dollar should the interest of the United States require. The Treasury also announced its willingness to purchase pure gold at the rate of \$35 per ounce (less the usual mint charges and less 0.25 per cent for handling charges) and to sell gold at \$35 per ounce (plus a handling charge of 0.25 per cent).

Since the Secretary of the Treasury expressed his intention to issue licenses for the export of gold to the so-called gold countries, the steps taken marked the resumption of a qualified gold-bullion standard, but the possibility of a further devaluation remained to question its permanency.

Events, 1934-1940. *Gold Inflow.* The immediate effect of the devaluation was to induce an inrush of gold to the United States. On January 31, 1934, the gold franc was quoted on the exchanges at 6.26 cents as compared with the new parity of 6.63 cents, and international bankers were thus enabled to reap a windfall profit as long as the discrepancy remained. Dollar drafts on New York banks were sold for foreign money which was converted into gold. The gold was shipped to the United States and upon arrival was sold to the Treasury. Such

was the mad scramble that insurance for gold shipment rose in London from the normal rate of 1s. per £100 to as high as 50s. As much as \$45 million of gold was risked on a single ship. By mid-April, the franc rose to par and shipments were no longer profitable, but in the meantime the country's monetary gold stock had been augmented by more than \$700 million (new).

This marked rise in the official price of gold was the principal cause of the constantly flowing stream of gold to this country until the autumn of 1939. After the outbreak of the Second World War, the purchase of war materials became the dominant influence. Like a huge magnet, the Treasury attracted gold the world over—out of monetary stocks, hoards, industrial uses, and the mines. The wisdom of this policy is open to grave doubts. Valuable goods and services were traded for gold on unfavorable terms. Moreover, in the end the United States held the lion's share of the world's gold, so that a formidable obstacle was raised against the eventual return to a gold basis by other countries. We thus nearly eliminated the only real reason for staying on gold during such a period, *viz.*, the hope that a common gold basis might be reestablished in the future—and we paid handsomely for the privilege of doing so.

Silver Purchase Act of 1934. The silver issue lay quiescent between 1900 and 1933, but the Inflation Act of 1933 gave the President power to establish bimetallism at his discretion. While he did not do so, he was under constant pressure from the silver interests. This finally crystallized in the Silver Purchase Act, approved June 19, 1934. Its main provisions were as follows:

1. It was "declared to be the policy of the United States that the proportion of silver to gold in the monetary stocks of the United States should be increased, with the ultimate objective of having and maintaining, one-fourth of the monetary value of such stocks in silver."

2. The Secretary of the Treasury was "authorized and directed" to purchase silver, at home or abroad, in order to establish the above proportion but with price and time of accumulation left to his discretion, except that he should not pay more than the statutory price of \$1.29 per ounce.

3. The sale of silver by the Treasury was likewise authorized whenever the monetary value of the stock of silver exceeds the one-fourth proportion, or when the market price of silver exceeds the statutory price.

4. Silver certificates were to be issued and placed in circulation by the Treasury in an amount not less than the cost of all silver purchased. They were also made full legal tender and redeemable in standard silver dollars though not in gold.

Silver was purchased steadily in accordance with this Act until our full-scale entry in the war in 1942. During the war, silver was used for industrial purposes and was sold and loaned to some of our allies. This reduced the monetary stock from \$4.3 billion at the end of 1942 to \$3.6 billion in 1945, a level which has been maintained to midyear 1949. It is of interest that the ratio of silver to total gold and silver was 13 per cent on the latter date compared with the 25 per cent ratio expressed as a policy in the Act. Despite large silver purchases, gold has been acquired at an even faster rate.

If the accumulation of so much gold is a mistake, the silver purchases have even less justification. Silver has no logical place in the monetary system whether the standard is gold or managed paper—except perhaps for use in subsidiary coins. The silver purchase program, stripped of its shining raiment, is nothing more nor less than a subsidy to silver interests the world over.

Banking Acts of 1933 and 1935. Numerous weaknesses in the banking system were brought to light by the breakdown that culminated in the bank holiday in March, 1933. The results of Congressional hearings and study which began in 1930 were embodied in the Banking Acts of June, 1933, and of August, 1935. Nothing more than a general characterization of these Acts is undertaken at this point in view of the more complete discussion of them in the chapters that follow.

The main provisions of the Act of 1933 were concerned with the following:

1. The control of bank credit used for speculative purposes, and especially for speculation in securities. The Board of Governors was granted large additional powers in this field.

2. The separation of commercial banking and investment banking. It was believed that the dual role of investing depositors' money and at the same time underwriting and selling securities provided a temptation for duplicity and fraud.

3. The insurance of bank deposits by the Federal Deposit Insurance Corporation.

4. The regulation of bank holding companies and affiliates.

5. Various miscellaneous changes—closer regulation of bank loans and investments, prohibition of interest payments on demand deposits, regulation of the rate of interest to be paid on time deposits, and some extension of state-wide branch banking privileges to national banks.

The keynote of the Banking Act of 1935 was the strengthening of the hand of the Board of Governors in the over-all management of the monetary and banking system. It was given final power over changes in the rate at which the Reserve banks lend reserve money to member

banks; it was granted the power to change the legal reserve requirements of member banks within a specified range; and it was given a dominant place on the Federal Open Market Committee which in turn was given complete authority over purchases and sales of securities by the Federal Reserve banks. Other important provisions included permission for Federal Reserve banks to lend reserve money more freely to member banks, more freedom to national banks in making real estate loans, and a permanent program for insurance of bank deposits.

Government Fiscal Policy. One of the features of the depression of the 1930's was the fiscal policy of an unbalanced Federal budget. The interest-bearing debt of the United States rose in every fiscal year—from \$15.9 billion at midyear 1930 to \$42.2 billion in 1940. This unbalanced budget was in part an outgrowth of necessity: Expenditures rose because of relief payments to the unemployed, and revenues were sharply curtailed as a consequence of the decline in national income. To a larger extent, however, it was the result of a planned program of Federal spending on public works as a means of encouraging business recovery. This was the first time in our history that this method had been utilized. Previously, natural forces of recovery were relied upon, and the government's role was a passive one.

This is not the place to undertake an appraisal of the effectiveness of the deficit-spending program in bringing about recovery. Proponents of the method contend that it was instrumental in reviving business and bringing it to a higher level than would otherwise have been reached. The fact that only partial recovery was attained, they say, was because of an inadequate amount of Federal spending. Those who oppose the method claim that its net effect was to depress rather than to stimulate business—that its effect was more than offset by a contraction of private spending owing to fears of higher taxes, unorthodox experimentation, and government competition. To prove their point they show that a greater degree of recovery was attained in other countries that balanced their budgets and relied on natural forces.

Whichever view is correct, the facts are that business did recover from the depths of 1932–1933, but fell far short of attaining high-level employment and production. At the beginning of 1940 there remained more than 10 million unemployed persons in the labor force compared with less than 2 million in 1929. This gives justification to the common designation, “the depression of the 1930's.” A partial recovery of wholesale commodity prices took place between 1932 and 1940—from an index of 65 to 79, or of 21 per cent (see Chart 11, page 359).

War and Postwar Finance. In view of the more detailed discussion

of war and postwar finance in later chapters, only a few of the high points are mentioned here.

When the magnitude of Federal expenditures during the war is considered, it is small wonder that major financial derangements exist in the postwar years. Indeed, it is amazing that they have not been more serious. Between midyear 1940 and 1946 total expenditures were \$387.4 billion, of which \$330 billion, or 85 per cent, were for national defense. In the two peak years they were nearly \$100 billion.¹ Some notion of their size can be gained by remembering that the entire national income in 1939 was \$72.5 billion.

There are four possible sources of funds to meet war expenditures: (1) taxes, (2) borrowing current savings, (3) borrowing from the banks, and (4) issuing Treasury currency notes. The last two of these mean expansion of the stock of money with resultant dangers of price inflation. A well-conceived plan, therefore, calls for raising as much by taxation as public morale will stand and raising the remainder, if possible, by borrowing current savings. The last two methods, being inflationary, would be used only as a last resort.

In actual fact \$176.3 billion, or 45 per cent, was raised by taxation during the 6-year period and the remaining \$211.1 billion, or 55 per cent, was borrowed. The borrowed funds were raised from current savings to the extent of \$121.7 billion and from borrowing at commercial and Federal Reserve banks to the amount of \$89.4 billion.² Thus, since no Treasury currency notes were issued, the inflationary part of the program represented a scant one-fourth.

Since the purchase of United States securities by the banks was the dominant factor leading to an increase of the stock of money, it is of interest next to see what change took place in this field. The payment money stock (currency and demand deposits) was \$39.5 billion at midyear 1940 and \$119.4 billion at midyear 1946—an increase of \$79.9 billion. The discrepancy is accounted for by the shift of demand deposits to time deposits and by other minor influences.

Other liquid assets owned by individuals and businesses also underwent a marked expansion during the same period—from \$42.7 billion to \$141.2 billion.³

This enormous growth of money and other liquid assets combined

¹ *Annual Report of the Secretary of the Treasury*, 1947, p. 268.

² The commercial banks lent \$68.1 billion and the Federal Reserve banks \$21.3 billion.

³ *Federal Reserve Bulletin*, June, 1948, p. 658. Other liquid assets include time deposits, United States securities, and savings and loan shares.

with the shortages of war goods and consumer goods would have caused a precipitous rise of prices had it not been for the programs of price control, rationing, and allocations. As it was, the Office of Price Administration held the rise in the cost of living between 1939 and midyear 1946 to 33 per cent, and the rise in wholesale commodity prices to 46 per cent (see Chart 2, page 31, and Chart 3, page 33).

With the collapse of German opposition in the spring of 1945 and the surrender of Japan in August of that year, the vast problem of reconversion to peacetime production faced the country. The magnitude of this task can be better appreciated when it is recalled that war output represented about two-thirds of industrial production in the peak years and that many industries were wholly engaged in war output. The transition was actually made more quickly and with less unemployment than most people believed possible. A sharp decline in durable-goods production began in the last half of 1945 and persisted until the first quarter of 1946. After this, recovery was rapid and a near-capacity level was regained during the last half of the year. This high level was maintained without important interruption throughout 1947 and 1948, although a contraction was underway during the first half of 1949.

Expenditures on national defense fell abruptly while tax rates remained about the same until the moderate reduction in early 1948. National income rose after a small setback in 1946. The net result was a surplus of \$754 million in the Federal budget for the fiscal year ended June 30, 1947, and of \$8,419 million in fiscal 1948. These surpluses broke the long chain of deficits in each year since fiscal 1930. The interest-bearing Federal debt was reduced from its peak of \$278.4 billion at the end of February, 1946, to \$249.5 billion at the end of April, 1949. This reduction was in part made possible by the budget surpluses, but it was effected mainly by the use of over \$20 billion of unneeded funds raised in the Victory Loan near the end of 1945.

The budget surplus and the amount of debt reduction might have been materially larger had it not been for the necessity of relief and aid to foreign countries. During 1948 the program of the Economic Cooperation Administration (Marshall Plan) to aid in European reconstruction was launched. This called for substantial further expenditures over a period of years.

The stock of money declined moderately between midyear 1946 and 1949—from \$119.4 billion to \$110. The dominant reason was a reduction in the earning assets of commercial banks. Loan expansion was more than offset by the reduction in holdings of United States securities. Other liquid assets owned by individuals and businesses continued to

increase—from \$140.5 billion at midyear 1946 to \$149.5 billion at the end of 1948.¹

Nearly \$3 billion of gold was used during the war for economic warfare, but beginning in 1946 the gold stock resumed its upward march. Between the end of 1945 and midyear, 1949 it rose from about \$20 billion to \$24.4 billion. This was a consequence of the pressing need of the rest of the world for our products. Also, our price of \$35 per ounce was an attractive one, especially at a time when most countries were on a paper money basis.

In general, the monetary policies pursued by the government in the postwar period were passively inflationary to the present time (midyear, 1949). Certain actions of a deflationary nature were taken, such as reducing the amount of bank-held Federal debt and raising member bank reserve requirements, but these were nullified by inconsistent actions having the opposite effect. After the Federal surpluses during fiscal 1947 and 1948, Congress reduced taxes enough in early 1948 to prevent a surplus in fiscal 1949. The farm price-support and subsidy program was a strong inflationary influence. Increases in wages were actively encouraged in 1946, and were passively accepted as inevitable in the two following years. Federal Reserve policy was dominated by the inflationary aim of supporting the United States security market at artificially high prices. The checking of increases in commodity prices was regarded as of only secondary importance. An ample amount of excess legal reserves was provided for the commercial banks. This made for low interest rates and loan expansion.

With this setting, it is of interest to see what actually happened to prices after midyear 1946. The Federal price-control program under the Office of Price Administration became ineffective when the law expired on June 30. While another price-control law was approved within a few weeks, it was entirely inadequate. Prices rose very sharply during the last half of 1946, and continued to rise until August 1948, after which a decline occurred. More concretely, between midyear 1946 and August, 1948, wholesale prices rose 49 per cent and consumers' prices rose 30 per cent² (see Chart 2, page 31, and Chart 3, page 33).

The dominant reason for this marked increase in prices was the great expansion of money and other liquid purchasing power during the war. When free markets emerged, this purchasing power—which had previously been contained—was released. Confronted with a general scarcity of goods and with extreme scarcity of many things, competing

¹ *Federal Reserve Bulletin*, July, 1949, p. 794.

² Indexes of U.S. Bureau of Labor Statistics.

buyers bid prices up. A creeping rise in the velocity of circulation of money was also a factor of importance during 1947 and 1948.

Under the influence of both high-level production and rising prices the national income rose materially—from \$179.3 billion in 1946 to an annual rate of \$235.6 billion during the last quarter of 1948. This compares with \$72.5 billion in 1939.

Before concluding this section, two important developments in the field of international finance should be mentioned, *viz.*, the establishment of the International Monetary Fund and the International Bank for Reconstruction and Development. Both of these institutions came into existence at the end of 1945 when 35 governments signed the articles of agreements. Their establishment grew out of an earlier International Monetary and Financial Conference held at Bretton Woods, New Hampshire, in July, 1944.

Initial subscriptions of gold and local currencies to the International Monetary Fund amounted to \$7,398 million, of which the United States subscribed \$2,750 million, or 37 per cent. The principal function of the Fund was to promote international economic cooperation in so far as possible through monetary means. It was to use its influence to establish healthy international conditions, sound domestic currencies, and stable foreign exchange rates. Member countries were entitled to borrow foreign currencies from the Fund within stated limits to meet current deficits in their international balances of payments. Foreign exchange transactions of the Fund began March 1, 1947; between then and April 30, 1948, the aggregate of transactions at the request of 12 member countries was \$606 million. Membership on the latter date had grown to 46 countries.¹

The purpose of the International Bank for Reconstruction and Development was to promote the flow of *long-term* capital among countries during the postwar period. This was to be accomplished by direct loans and by guarantees of private loans for specific projects. Total capital subscriptions by the 38 member countries on March 30, 1946, were \$7,670 million, of which the United States subscribed \$3,175 million, or 41 per cent. Only 20 per cent of the subscriptions were called, and it was contemplated that borrowing would constitute the major source of funds.

At midyear 1948 the Bank had total assets of \$1.9 billion, had made loans of \$497 million, and had issued bonds to the amount of \$254 million. There were 47 member countries at the end of August, 1948.²

¹ *Annual Report of the International Monetary Fund*, 1948, pp. 45, 55.

² *Third Annual Report of the International Bank for Reconstruction and Development*, 1947–1948.

The Fund and the Bank hold out great promise of constructive developments in the field of postwar international finance. However, the size and complexity of the problems facing them are very great. With regard to the Fund in particular, the foundation on which it must build is largely beyond its control. Stable foreign exchange rates can be maintained only under conditions of healthy domestic economies with balanced international relationships, a large element of which is sound monetary policy. These conditions can be promoted in some degree by its own policies, by mild pressures tactfully applied, and by sound financial advice. Beyond this, the Fund cannot go. Its success therefore depends to a greater degree on a healthy rebuilding of the world economy in an atmosphere of peaceful cooperation than on its own actions, important as they may be.

Review Questions

1. Why is the final period in the financial development of the United States, 1933-1949, labeled "quasi gold standard"?
2. Describe the procedure and consequences of reopening the banks in March, 1933.
3. Summarize the provisions of the Inflation Act, May, 1933.
4. Discuss the wisdom of the Joint Resolution of Congress in June, 1933, declaring that the gold clause in private and public debt contracts was annulled and that this clause could not be included in future money contracts.
5. Outline the main provisions of the Gold Reserve Act of January, 1934.
6. Explain the devaluation of the gold dollar on January 31, 1934, and point out the immediate effects of this action.
7. Summarize the provisions of the Silver Purchase Act of 1934.
8. Outline the principal provisions of the Banking Acts of 1933 and 1935.
9. Explain the deficit-spending policy which was followed by the Federal government in order to promote business recovery after 1933. Do you agree or disagree with the wisdom of this policy?
10. Summarize the methods of financing the Second World War. Was the financial program a well-planned one in your opinion?
11. Explain the effect of war finance on the stock of payment money.
12. What change in the Federal debt has taken place since February, 1946? Explain.
13. Characterize the monetary policies of the government during the postwar period.
14. How do you account for the marked increase of commodity prices which occurred between midyear 1946 and August, 1948?
15. What purposes led to establishment of the International Monetary Fund at the end of 1945? The International Bank for Reconstruction and Development?

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CHAPTER X

THE FEDERAL RESERVE SYSTEM: ORGANIZATION

The establishment of the Federal Reserve System in 1914 marked a new epoch in the development of banking in the United States. For a half century the old national banking system had survived with only a few minor changes. But, with the recurrence of a financial breakdown in 1907, its weaknesses became generally recognized. There followed a strong movement for banking reform which, after a hard-fought struggle, culminated in the passage of the Federal Reserve Act in 1913.

Before entering upon a description of the new system, it is first necessary to provide the proper setting by giving brief consideration to central banking development in general.

CENTRAL BANKING DEVELOPMENT

Foreign Central Banking. A pressing need for central banking services arises as soon as a nation reaches an advanced stage of commercial and industrial development. In fact, without the support of a modern monetary system economic progress could never have emerged from a primitive stage. Every important country, therefore, has been forced to make provision in one way or another for the performance of what are now generally recognized as central banking functions. These include proper regulation of the stock of money, guardianship of the ultimate banking reserves, maintenance of liquidity through readiness to convert sound commercial bank assets into reserve money, note issuance, provision of efficient facilities for the clearing and collection of checks, performance of fiscal-agency services for the government, and the exercise of general guidance and leadership of the money market. In most countries the performance of these functions has been placed in the hands of a central bank closely associated with the state. A wide difference, however, has existed in the relationship between the bank and the state, ranging from a position of almost complete independence in normal times to that of a mere bureau of the treasury department.

While a few central banks trace their origin to an earlier period, the conception of central banking in the modern sense originated in Great Britain with Adam Smith, David Ricardo, and other members of the

early classical school of economists. Their influence is evident in the report of the Bullion Committee in 1810, and again in the testimony of the Governor of the Bank of England, Horsley Palmer, before the Parliamentary Committee of 1832. Governor Palmer showed a remarkably clear understanding of the relation of the bank's discount rate to prices, foreign exchange rates, and gold movements; and his testimony is recognized as a distinct contribution to central-banking theory. Since this early pronouncement, much has been learned from a century of accumulated experience with regard to both the theory and operating techniques of central banking.

The Bank of England, established in 1694, has occupied the premier position among foreign central banks. In its capacity as regulator of the London money market, its policies have exerted a world-wide, and often dominant, influence since the middle of the nineteenth century.

The two other central banks of greatest historical importance are the Bank of France and the Reichsbank of Germany. The former was founded by Napoleon Bonaparte in 1800, chiefly for the purpose of providing, through note issue, a uniform and stable currency. The Reichsbank had its origin in 1765 when Frederick the Great founded the Koenigliche Bank in Berlin as a purely State institution. Subsequently, in 1846, this bank was converted into the Preussische Bank which, in turn, became the Reichsbank in 1875.

Other early central banks which deserve mention include the Riksbank of Sweden, established 1668—although not truly a central bank until 1897; the Netherlands Bank, founded in 1814; the Norges Bank of Norway (1817); the National Bank of Copenhagen (1818); the National Bank of Belgium (1850); the State Bank of Russia (1860); the Bank of Japan (1883); and the Bank of Italy (1893).

A phenomenal growth in the number of central banks took place during the period of monetary reconstruction following the First World War. In this the League of Nations played an important part. Today (1949) almost all countries either have a central bank or plan to establish one in the near future.

In addition to the fifty-odd domestic central banks, three other institutions in the international field should be mentioned, *viz.*, the Bank for International Settlements at Basel, Switzerland, the International Monetary Fund, and the International Bank for Reconstruction and Development. The BIS was established by leading central banks in 1930 chiefly to facilitate the First World War reparations payments. While its functions in practice have been limited, it has stood since that time in the key position of a central bank for central banks. The Inter-

national Monetary Fund and the International Bank were established and began operations late in 1946. By 1948, membership in the Fund and the Bank totaled 46 nations, including all major countries except Russia and Germany. The functions of the former relate to current international monetary relationships, while those of the Bank have to do with long-term capital movements in the international sphere.¹

Central Banking in the United States: Origin. *The First and Second Banks.* With so much emphasis placed upon the fact that the Federal Reserve System ushered in a new regime of central banking in the United States, it is often forgotten that a central bank played an important role during the greater part of the first half century of the country's existence. Under the able direction of the first Secretary of the Treasury, Alexander Hamilton, the First Bank of the United States was established in 1791. It was modeled closely after the Bank of England which was the only important institution of the kind in existence at the time.

The First Bank performed the public functions of holding the funds of the Treasury, loaning money to the government, aiding in the sale of United States bonds, providing a national currency of uniform value by issuing its own notes and constantly testing the convertibility of state bank notes, aiding in the maintenance of the monetary standard by insisting on sound government fiscal policy, and contributing to the stability and reasonableness of both domestic exchange rates and interest rates. The charter of the First Bank, which expired in 1811, was not renewed owing mainly to the bitter opposition of the state-chartered banks.

After a short period of speculative banking during which monetary conditions became chaotic, a 20-year charter was granted to the Second Bank of the United States in 1816. The plan of organization and functions of the Second Bank were nearly identical with those of its predecessor. While its record was marred by mismanagement during the first few years, it subsequently became a public institution of great service to the country. But despite this fact President Jackson led a powerful political attack which succeeded in blocking a renewal of the charter in 1836. As a consequence, the financial system of the country, deprived of essential services and lacking guidance or leadership, was one of the least satisfactory in the world during the ensuing 78-year period.

Makeshift Central Banking. The outstanding feature of the period intervening between the demise of the Second Bank of the United

¹ For a more complete description of the International Monetary Fund and the International Bank, see pp. 433-437.

States and the establishment of the Federal Reserve System (1836-1914) was the attempt to provide badly needed central banking services without actually creating a central bank. The latter was virtually a political impossibility owing to the "fear of a centralized money power" which was crystallized by President Jackson and became thereafter a deeply rooted tradition of the West. But, as history has convincingly demonstrated, the object was not practically attainable by such indirect, piecemeal methods. These methods employed as agencies the U.S. Treasury, the national banking system, correspondent banking relationships, and clearing-house associations.

Shortly after the Second Bank was relieved of its public responsibilities the government was forced to make special provision for the safety of the public funds. The panic of 1837 and the depression that followed caused widespread bank failures, and very nearly swept several states clean of any banking facilities whatever. The state-chartered banks to which the government funds had been shifted from the Second Bank were unsafe and unfit as public depositories. Accordingly, the Independent Treasury system was established in 1846. Under this system subtreasuries, eventually nine in number, were created at convenient points in the country to receive, hold, and disburse the public funds in specie. But this apparently promising plan embodied a fatal drawback. Even in normal times the money market was badly disturbed as the Treasury alternately imprisoned or released part of the specie reserve of the banks. When the Civil War necessitated government borrowing on a vast scale, the system broke down entirely. From that time on a large part of the public funds was deposited with the national banks.

The Treasury also attempted in another way to make up for the absence of a central bank in the post-Civil War period. When for some reason the banks were short of cash reserves, the Treasury often attempted to furnish relief by shifting public deposits to a troubled area, either from other banks or from its store of cash. At times this practice was followed with beneficial effects, but it was doubtless more often a source of disturbance in the money market. With a constantly shifting political personnel, the Treasury gave only irregular attention to the problem, usually in response to emergency calls for help. Also, political considerations not infrequently determined the allotment of public funds among the banks. On the whole, therefore, the practice was at best a poor substitute for the continuous, nonpolitical, support of a central bank.

Further steps in furnishing the services expected from a central bank

were taken under the national banking system, founded in 1863. The most important of these was provision for a banknote currency of uniform appearance and value—the national bank note—to replace the hundreds of motley issues of state-chartered banks. Note issue by the latter was effectively curbed in 1866 by the imposition of a 10 per cent tax. A second step in this direction was the provision made for using selected national banks as depositaries for government funds upon the pledge of acceptable securities. No longer was it necessary for the Treasury to drain the banks of their reserves during tax-collection periods.

Still further progress was made with the development of the system of “correspondent banking” in the country. This was a joint outgrowth of legal reserve requirements, the prohibition of branch banking, and the lack of central banking facilities. Under this system a large part of the legal reserves of the smaller banks was maintained as deposits in leading city banks where they yielded a small interest return. A high degree of concentration of these reserve deposits in a few large New York City banks existed. These banks held about 60 per cent of total bankers’ balances in the country. In addition to paying interest on balances, they made loans to correspondents in need of reserves, gave investment advice, made collections, and performed various minor services. Had there been a greater degree of coordinated action among these big city banks as trustees of the ultimate banking reserves, it is conceivable that they might have furnished a workable substitute for normal central banking. But such was not the case.

Finally, the clearing-house associations, which were organized in every city, succeeded in some measure in performing central banking services. One of the important functions of a central bank is that of providing an efficient system for the clearance and collection of checks and other cash claims. The clearing houses became agencies not only for the offset of local items but also for the presentation of out-of-town claims against drawee banks. Also, in times of financial crisis the clearing houses met the need for central bank credit in a limited way by the issue of clearing-house certificates. These certificates were issued to member banks upon the pledge of acceptable assets and were receivable in settlement of debts to other banks. They were utilized in 1873, 1884, 1893, 1898, 1901, 1908, and 1913.

Thus, by various patchwork methods, some of the functions of a central bank were performed before the Federal Reserve System. But the methods were so inadequate and uncoordinated that at best they constituted no more than a makeshift solution.

Origin of the Federal Reserve Act. The progress of the banking-reform movement was traced in the preceding chapter down to the introduction of the National Monetary Commission bill into Congress in 1912. The Commission had, it will be recalled, made important contributions to the movement by awakening public interest to the vital need for reform, and by preparing a bill based upon a study of European central banking systems. This bill, however, owing to the changed political complexion of Congress, had small chance of passage, and received little further consideration.

But fortunately the reform movement did not die with the change of administrations. Immediately after his election President Wilson wrote to Hon. Carter Glass: "... the question of the revision of the currency is one of such capital importance that I wish to devote the most serious and immediate attention to it." Mr. Glass was at the time chairman of the subcommittee on legislation of the Banking and Currency Committee of the House. He was an able and ardent advocate of reform, and his committee had already prepared a tentative draft of a banking bill. With the assurance of support from the President, he put forth every effort to draft a thoroughgoing reform bill that would be acceptable to Congress.

Too much credit can scarcely be given to President Wilson and Chairman Glass for securing passage of the bill in the face of powerful opposition that time and again threatened either to block it entirely or to undermine its essentials. Most bankers fought the measure bitterly, using every known device to bring pressure upon Congress. The city banks feared particularly the loss of country bank deposits by the transfer of reserves, and control by a Government board. Country banks were most concerned about loss of revenue from exchange charges and compulsory subscriptions to Reserve bank stock. In addition, the bill faced the serious handicap of an almost solidly hostile press. But strangely enough, much of the opposition of both bankers and the press turned into warm support after the measure was passed. Many came to view the program more broadly and to realize that, while certain details were objectionable, the new system as a whole held great promise.

ORGANIZATION OF THE FEDERAL RESERVE SYSTEM

The Board of Governors. The central governing body of the Reserve System is officially designated as the "Board of Governors of the Federal Reserve System." It is composed of seven members, appointed by the President with the advice and consent of the Senate for a term of 14 years. In order to provide continuity of policy and to prevent "pack-

ing" by one administration, the terms are staggered so that not more than one expires in any 2-year period. Reappointment, after serving a full term, is illegal, presumably for the purpose of preventing domination over a long period by one interest or group of persons. The chief executive officer of the Board is the chairman, who is designated by the President to serve a term of 4 years. A vice-chairman, who presides in the absence of the chairman, is also designated for a similar term. Each member receives an annual salary of \$15,000, together with necessary traveling expenses, and is expected to devote his entire time to the job.

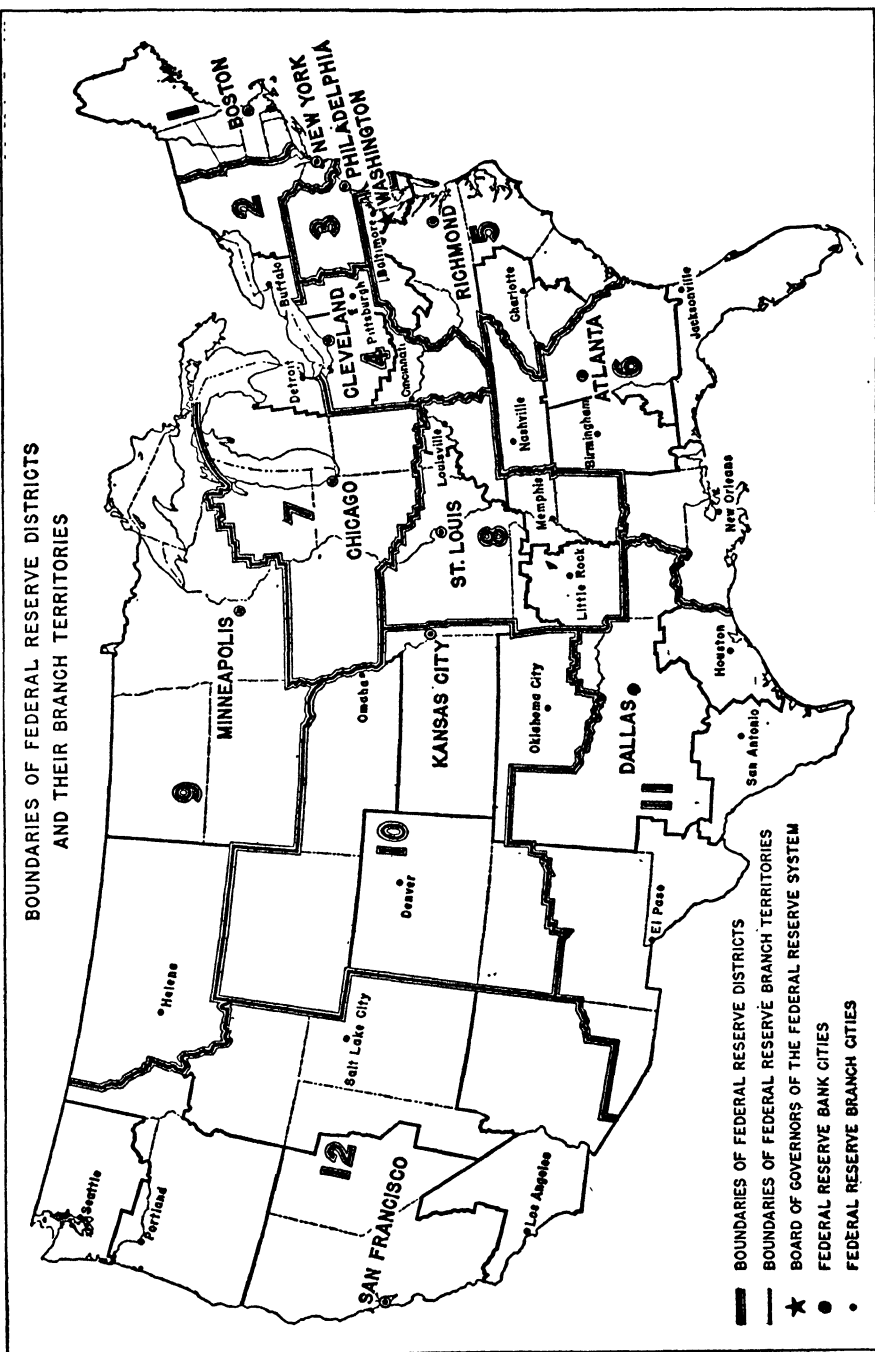
In selecting the members, the President is directed to "have due regard for a fair representation of the financial, agricultural, industrial, and commercial interests and geographical divisions of the country." Not more than one member may come from a single Federal Reserve district; and no member may be an officer, director, employee, or stockholder of any banking institution. The principal offices of the Board are located in Washington, D.C.

Federal Reserve Banks. In view of the strong prejudice of the country against "concentration of the money power" a single central bank with branches, following the European plan, was entirely out of the question. The framers of the Federal Reserve Act, therefore, wisely avoided criticism on this score by devising a decentralized system. Their plan contemplated a number of separate central banks, each serving an assigned district, and a central governing board to coordinate the separate units into a unified national system.

Federal Reserve Districts. The act provided that the country should be divided into not less than eight or more than twelve Federal Reserve districts, and that a Federal Reserve city should be designated in each district. This task, as well as much of the important initial work of organization, fell to the Organization Committee, composed of the Secretary of the Treasury, the Secretary of Agriculture, and the Comptroller of the Currency. After careful investigation, including public hearings of representatives from over 200 cities, the committee determined upon twelve districts and cities as headquarters for the Federal Reserve banks. In the order of districts, these were: Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco (see map). The main factors governing the committee's decision were (1) established commercial and banking relationships; (2) transportation and communication facilities between the Federal Reserve bank and all parts of the district; and (3) fair distribution of banking capital among districts.

CHART 5

BOUNDARIES OF FEDERAL RESERVE DISTRICTS AND THEIR BRANCH TERRITORIES



Unfortunately, also, politics played some part in shaping the final plan.

Although several adjustments of district lines have been made by the Board of Governors, the districts remain today substantially as outlined by the Organization Committee. No changes in Federal Reserve cities have occurred.

Table 7 gives a more definite impression of the distribution of banking power among the districts. The Federal Reserve Bank of New York

TABLE 7. RELATIVE IMPORTANCE OF FEDERAL RESERVE DISTRICTS, MAY 25, 1949

Federal Reserve district	Total assets of Federal Reserve banks, billions of dollars	Percentage distribution of Federal Reserve bank assets
1. Boston	2.4	5.2
2. New York.....	12.4	27.0
3. Philadelphia.....	2.7	5.9
4. Cleveland.....	3.8	8.3
5. Richmond.....	2.6	5.7
6. Atlanta	2.3	5.0
7. Chicago..	7.9	17.2
8. St. Louis	2.0	4.4
9. Minneapolis	1.2	2.6
10. Kansas City.....	2.0	4.4
11. Dallas	1.6	3.5
12. San Francisco	4.9	10.7
Total	45.9	100.0

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 680.

with 27 per cent of total resources overshadows the others in size. Taken together the Banks of New York, Chicago, and San Francisco represent 55 per cent of total resources.

Charter, Capital, and Earnings. Each one of the twelve Federal Reserve banks is a corporation chartered by the Federal government for an indeterminate period. The original charters were granted for twenty years, but Congress wisely provided indeterminate charters in 1927 and removed the hazard which ended the careers of both the First and Second Banks of the United States. Under existing law the charters can be annulled only by an act of Congress or for violation of law.

The capital stock (par value \$100) of each Federal Reserve bank is

entirely owned by the member banks of its district, although shares may be sold to the United States government or to the general public. A member bank is required to subscribe for such stock to the amount of 6 per cent of its capital and surplus. Only one-half of this subscription has been called, however, so that the item Federal Reserve bank stock, which appears on member bank statements, is always 3 per cent of capital and surplus. In case a member bank changes the amount of its capital or surplus, a corresponding adjustment must immediately be made in its subscription to Reserve bank stock. Similarly, in the event of liquidation of a member bank or withdrawal from membership, the Reserve bank must refund the amount of the cash-paid subscription plus accrued dividends.

The stockholders (member banks) are entitled to receive a cumulative dividend of 6 per cent per annum. Since the beginning of 1947, approximately 90 per cent of net earnings after dividends have been paid to the U.S. Treasury and the remaining 10 per cent has been carried to the surplus account. This is in accordance with a policy of the Board established in April, 1947, as a consequence of the facts that earnings were relatively high and that surplus was equal to, or in excess of, subscribed capital in every Federal Reserve bank. During 1948 the net earnings of the twelve Reserve banks were \$237.6 million of which \$166.7 million were paid to the Treasury, \$40.4 million were transferred to reserves for contingencies, \$11.9 million were paid in dividends, and \$18.5 million were carried to surplus.¹

Management. Each Federal Reserve bank is supervised by a board of directors of nine members, holding office for three years, and divided into three classes: A, B, and C. The three Class A directors represent the stockholding banks; the three Class B directors represent the business interests of the district; and the three Class C directors are representatives of the Board of Governors of the Federal Reserve System. Class B directors must be actively engaged in business or agriculture within the district and may not be officers, directors, or employees of any bank.

In order to ensure wide representation of business and banking inter-

¹ Until 1933 the Reserve banks were required by law to pay excess earnings, after dividends and after building up surplus to a stated amount, to the Treasury as a franchise tax. Over \$149 million were paid in franchise taxes during this period. The Banking Act of 1933 relieved the Reserve banks of the franchise tax but at the same time appropriated one-half of their surplus account (\$139 million) as a subscription to the stock of the Federal Deposit Insurance Corporation. This stock was retired in October, 1947, and the amount was paid to the Treasury.

ests on the board, a rather involved method of electing the Class A and B directors is indicated by the act. The member banks of each district are divided into three size-groups for voting purposes—large, intermediate, and small. Each group then elects one Class A and one Class B director.

The three Class C directors, who must be residents of the district, and who may not be officers, directors, employees or stockholders of any bank, are appointed by the Board of Governors. One of the Class C directors, who must be a person of tested banking experience, is designated as chairman of the board and also as "Federal Reserve Agent." In the latter capacity, he maintains a local office of the Board of Governors on the premises of the Federal Reserve bank, and acts as the Board's official representative. His special functions in connection with the issue of Federal Reserve notes are described fully in a subsequent section.

The chief executive officer of each Federal Reserve bank, to whom all other officers are directly responsible, is the president. He is appointed for a term of five years by the board of directors, with the approval of the Board of Governors.

Branches. With the object of making Federal Reserve facilities more readily available in all parts of the country, 24 branches of the parent banks have been established (see Chart 5, page 141). Provision for such branches is made by the Federal Reserve Act which empowers the Board of Governors to permit or require any Federal Reserve bank to establish or discontinue branch banks within its district.

The branches are allocated a definite territory, and most of them perform for their assigned members all the services that are made available by the parent institution. A few branches, however, are more restricted in their activities, particularly in the rediscount of commercial paper which must be forwarded to the main bank for inspection.

Membership. All national banks are required to be members of the Federal Reserve System, and state banks and trust companies—including mutual savings and Morris Plan banks—are permitted to join upon meeting certain specified conditions. Private banks, however, are denied membership. The conditions which a bank desiring membership must meet are in general the same as those applicable to national banks. The Board of Governors is directed to consider the financial condition of an applicant, the character of its management, and whether the corporate powers exercised are consistent with the act. In addition, the applying bank must meet the minimum capital requirements of a similarly located national bank, subscribe to the appropriate amount of

Federal Reserve bank stock, comply with reserve requirements, and conform to specified standards set by the National Bank Act. On the contrary, should a state bank wish to withdraw from membership, provision is made for the redemption of its Reserve bank stock and the return of its deposits. The membership of the System thus consists of a compulsory nucleus—the national banks—and a voluntary group of state institutions.

The status of membership in the Reserve System at the end of 1948 is shown in Table 8. Member banks held 85 per cent of total deposits

TABLE 8. ALL COMMERCIAL BANKS IN THE UNITED STATES, DECEMBER 31, 1948

Type of Bank	Total deposits, billions of dollars	Number
Members of Federal Reserve System:		
National	81.4	4,991
State	40.0	1,917
Total	121.4	6,918
Nonmembers of Federal Reserve System.	21.4	7,253
Total of all commercial banks	142.8	14,171

SOURCE: *Federal Reserve Bulletin*, June, 1949 pp. 687-689.

but accounted for just under half of the number of commercial banks. The large banks are in the System and those on the outside are small institutions. To be more exact, the average member bank held deposits of about \$18 million as compared with \$3 million for nonmembers. The latter typically have a high proportion of savings deposits and are most numerous in the agricultural sections of the country.

The Federal Open Market Committee. One of the most powerful weapons of the Reserve System for the purpose of making their credit policy effective is the purchase and sale of securities in the open market. These dealings are usually referred to as "open-market operations." It is the function of the Federal Open Market Committee to direct such operations for the System with a view to accommodating business and creating sound monetary conditions in the country. No Reserve bank may engage in open-market operations except under the direction and the regulations of the Committee. These provisions are designed to ensure complete coordination in the security dealings of the System so

that the different banks will not work at cross purposes on a matter of national scope.

~~The Committee is composed of the Board of Governors and five members selected annually by the Federal Reserve banks,~~ which for this purpose are cast into five groups. The Board thus holds the balance of power, but the Reserve banks have strong enough representation to ensure large influence. The actual buying and selling of securities is centralized at the Federal Reserve Bank of New York under an officer known as Manager of System Open Market Account.

Advisory Committees. Although purely an advisory body, the Federal Advisory Council should not be regarded as an unimportant part of the Reserve System. It is composed of one representative from each of the twelve Federal Reserve districts, selected annually by the respective Reserve banks. The Council must meet in Washington, D.C., at least four times a year. It may confer directly with the Board of Governors and make recommendations upon any matter relating to Reserve policy or practice.

The purpose of the Council is to make certain that the Board is regularly made familiar with Reserve System problems as seen from the point of view of the local districts. In practice, the members are usually prominent local bankers who often regard the short appointment more as an honor than a responsibility. Nevertheless, the Council has upon occasion brought considerable healthy influence to bear, and its existence provides a useful check upon the policies and operations of the System.

In addition to the Council there are other advisory committees that influence policy decisions. The most important of these is the Conference of Presidents of the Federal Reserve Banks which meets three or more times a year.

Comparison with Aldrich Plan. A comparison of the organization of the Federal Reserve System with the Aldrich Plan,¹ proposed by the National Monetary Commission, reveals that the pivotal difference was one of banking control. Both measures made provision for essential central banking services, and both were founded upon the basis of classical banking doctrine. But it will be recalled that the Aldrich Plan placed control of central banking with the bankers and particularly with the large city banks. In contrast, the Federal Reserve Act placed the control of broad banking policies in a government board and made careful provision for local and small-banker representation. Analysis of the Reserve System organization shows the following democratic and

¹ Described in the preceding chapter.

decentralized features: (1) qualifications of the Board of Governors; (2) creation of twelve central banks with coordinate authority, instead of a single bank with branches; (3) method of selection of the boards of directors of the Federal Reserve banks; (4) creation of the Federal Advisory Council; and (5) a large measure of government control.

Review Questions

1. Indicate the main central banking functions, and comment briefly on each one.
2. Summarize the public functions performed by the First Bank of the United States. How do these compare with the modern conception of central banking functions?
3. Outline the manner in which central banking functions were performed in the United States during the period 1836-1914.
4. Indicate the organizational features of the Board of Governors.
5. Compare the organization of the Federal Reserve System with the European plan of central banking.
6. Discuss the sources of capital funds of the Federal Reserve banks and the distribution of their net earnings since the beginning of 1947.
7. Describe the management organization of a Federal Reserve bank.
8. Summarize the requirements for membership in the Federal Reserve System.
9. Compare the importance of member and nonmember banks in terms of both total deposits and number of banks.
10. Comment on the membership and functions of the Federal Open Market Committee.
11. Point out the democratic features of the Federal Reserve System.

Advanced Questions

1. Do you believe that a single central bank with branches would be preferable to twelve separate Federal Reserve banks coordinated by the Board of Governors?
2. Is it logical in your opinion to place open-market operations under control of the Federal Open Market Committee rather than the Board of Governors?
3. "A pressing need for central banking services arises as soon as a nation begins to develop commercially and industrially." Support this statement.

CHAPTER XI

THE FEDERAL RESERVE SYSTEM: FUNCTIONS AND OPERATIONS

FUNCTIONS AND POWERS OF THE BOARD OF GOVERNORS

The ruling function of the Board of Governors is that of regulating the amount of money in such a manner as to promote a maximum of economic welfare, *i.e.*, high-level production, stable employment, equitable distribution, and a rising standard of living. All other functions are subsidiary to, and should be in harmony with, this over-all purpose. In general, the Board may be thought of as a sort of superboard of directors, determining broad monetary policies, and supervising the operations of the Federal Reserve banks. The actual duties of the Board, however, are very wide in scope and complex in detail. They may be outlined conveniently under the headings: (1) interpretation of the Federal Reserve Act; (2) monetary regulation; and (3) supervisory powers.

Interpretation of the Federal Reserve Act. Since the Federal Reserve Act in general sets forth only the outlines and broad principles upon which to build the Federal Reserve System, the exceedingly important task of interpreting the Act and giving effect to its provisions falls upon the Board. For example, the Act makes short-term commercial paper eligible for rediscount and declares that paper representing investment or security speculation is ineligible. But this leaves to the Board the difficult problem of defining these categories more specifically and passing upon particular cases.

Similarly, there is scarcely a provision of the Act that does not require regulations, more or less technical and complex, to guide the Reserve banks and member banks in their day-to-day operations. Bank reserves, rediscounts and advances, open-market operations, discount rates, loans and investments, deposits, collections and clearings, membership, reports of condition, examinations, acceptances, trust powers, interlocking directorates, affiliates, margin requirements, relations with security dealers—all these, and many other topics dealt with by the Act, require interpretative regulations and rulings by the Board.

Monetary Regulation. A preliminary survey of the credit control powers of the Board is desirable at this point. Credit control means

the exertion of influence over both the volume and the character of commercial bank credit. In order to exercise such control wisely, the first need is for a careful formulation of objectives and guiding criteria.¹ This done, the next step is that of giving actual effect to whatever credit policy best serves the basic objectives at the time. For this purpose a technique of control has gradually been developed from central bank experience. The various instruments of credit control may be listed and briefly discussed as follows:

1. The rate at which the Reserve banks stand ready to discount commercial paper for members may be changed. A high rate of discount, if made effective, raises the cost of borrowed funds and therefore, tends to reduce the credit supply and the level of prices. Opposite tendencies follow from a low central bank rate. While each Federal Reserve bank nominally fixes its own discount rate every two weeks, the final authority in case of dispute rests with the Board of Governors who "review and determine" such rates, and also have the power to change them on their own initiative.

2. A change may be effected in the amount of open-market securities held by the Reserve banks. If such securities are sold, the resultant reduction of commercial bank reserves tends to raise interest rates and promotes monetary contraction. This instrument is particularly useful when used in combination with a simultaneous rise in the discount rate. Opposite tendencies follow from the purchase of securities by the Reserve banks. While the Federal Open Market Committee determines open-market policy, it will be recalled that the Board represents seven-twelfths of this committee.²

3. The Board is given wide latitude in raising or lowering the legal reserves required of member banks. A rise in such requirements tends to produce higher interest rates, credit contraction, and lower prices while opposite effects follow from a reduction.

4. A substantial measure of direct control over bank credit supporting security speculation is lodged with the Board. It may set a definite limit upon the amount of security loans made by member banks, and it may also raise or lower the margin requirements that apply to security loans.

5. Another selective power to regulate credit was granted to the Board during the war, *viz.*, authority over consumer credit. This power was terminated on November 1, 1947, but was reinstated for a limited period by Congress in August, 1948, as an anti-inflationary measure.

¹ See Chapter XXXV for a discussion of objectives and guiding criteria.

² See the Appendix at the end of this chapter for a more complete analysis of the effects of open-market operations.

6. The Board is able to exert some influence upon credit conditions by counseling and warning member banks with respect to unsound policies, either directly or through the Reserve banks.

7. Through its power to require one Reserve bank to discount the commercial paper of another, the Board may effectively equalize and pool the ultimate bank reserves of the country.

8. Finally, the power to suspend any reserve requirement of the Act for short periods, gives the Board flexibility of control in case of an emergency.

Supervisory Powers. In addition to general supervision the Board is granted a number of specific powers over the Reserve banks, as follows:

1. To suspend or remove any officer of a Federal Reserve bank or member bank.

2. To require the Reserve banks to write off any doubtful or worthless assets.

3. To suspend or liquidate a Reserve bank for violation of any provisions of the Act.

4. To examine the accounts and records of the Reserve banks and member banks.

5. To require a detailed statement of condition of each Reserve bank once a week. Such statements must be published in both individual and consolidated form.

6. To supervise the issue and retirement of Federal Reserve notes.

7. To act as a clearing house for the Federal Reserve banks, and to regulate collections and transfers of funds.

8. To appoint the Class C directors of each Reserve bank. One of these is chairman of the board and Federal Reserve agent.

Other supervisory powers of a miscellaneous nature are as follows:

1. To fix the rate of interest that member banks may pay upon time and savings deposits.

2. To accept or reject state bank applications for membership in the Federal Reserve System.

3. To require detailed reports of condition of state member banks and their affiliates.

4. To exercise special supervision over all relationships and transactions between the Federal Reserve banks and foreign banks.

5. To reclassify reserve and central reserve cities, and to readjust the boundary lines of Federal Reserve districts.

6. To grant or withhold permits for (a) national banks to perform fiduciary services; (b) holding company affiliates to vote member bank

stock; (c) member banks to extend acceptance credits up to 100 per cent of capital and surplus; (d) state member banks to establish branches; (e) directors, officers, and employees to serve a member bank and another bank at the same time; and (f) member banks to establish branches in foreign countries, or to invest in the stock of domestic corporations engaged principally in foreign banking.

FUNCTIONS AND OPERATIONS OF THE FEDERAL RESERVE BANKS

While the Board of Governors supervises the operations of the System and dictates broad banking policies, the actual operating units are the Federal Reserve banks and their branches. It is with them that the member banks have central banking contacts, and from them that they receive central banking services. For the purpose of convenience in discussion, the powers and functions of the Reserve banks may be listed as follows: holding the legal reserves of member banks and the gold-certificate reserves of the monetary system; making advances of reserves to member banks; engaging in open-market operations; serving as central supply stations for currency, and issuing Federal Reserve notes; clearing and collecting checks and other cash claims, and transferring funds; performing fiscal agency services for the United States government.

These functions are discussed in order in the sections that follow.

Holding Bank Reserves. All legal reserves of member banks exist as deposit credits on the books of the Federal Reserve banks. Minimum and maximum legal reserves, which range between 7 and 26 per cent of net demand deposits, and 3 and 6 per cent of time deposits are fixed by law. Changes in these requirements are one of the principal methods of monetary control in the hands of the Board. In July, 1949, they stood near the maximum permitted by law.¹

The Federal Reserve banks are also subject to a legal reserve requirement of 25 per cent in gold certificates behind their deposit and Federal Reserve note liabilities. Their actual reserve ratio at midyear 1949 was 54 per cent, so that a substantial surplus of basic reserves existed to support further expansion in the stock of money.

Discounts and Advances. With all gold-certificate reserves concentrated in their possession, the Reserve banks are in position to expand their own credit and thereby advance legal reserves or currency to member banks.

¹ Against net demand deposits, 24 per cent in central reserve city banks, 20 per cent in reserve city banks, and 14 per cent in country banks; against time deposits, 6 per cent in all member banks.

Loans to members are of two types: (1) rediscounts of eligible commercial paper and (2) advances upon the members' own promissory notes secured by United States securities or other acceptable assets.

Commercial paper eligible for rediscount consists of promissory notes, trade acceptances, bankers' acceptances, or other bills of exchange, which represent the financing of working-capital requirements of business. The period until maturity of such business paper may not exceed 90 days, but agricultural paper, owing to the longer production period, may have a remaining maturity of as long as 9 months. Obligations, representing fixed-capital investment or speculation in securities are not eligible.

Advances to member banks upon the basis of their own notes may be made for periods not exceeding 90 days if the collateral consists of eligible commercial paper or U.S. government securities. The usual practice of borrowing member banks is to give their own promissory notes with United States securities as collateral. This method is far more convenient than rediscounting customer paper.

Under regulations of the Board of Governors, Reserve banks may also make advances to members for periods not exceeding four months upon the basis of any *satisfactory*, though ineligible, collateral. The rate of discount applied in this case, however, must be at least $\frac{1}{2}$ per cent higher than the highest rate in effect at the Reserve bank.

The Reserve banks may also make advances to nonmember banks, business firms, and individuals under certain restrictions.

The rates charged on discounts and advances are nominally established by the Reserve banks. But in reality they are usually determined by the Board since it has the power of review and also the authority to change rates.

A Reserve bank is not legally obliged to make discounts and advances to member banks even though they possess eligible assets. It may refuse accommodation on the ground that it is not in harmony with sound credit conditions. But in practice a bank with satisfactory collateral can count on its borrowing power. The Reserve authorities have in the past expressed their general policy by the discount rate, open-market operations, and legal reserve requirements, and not by refusing to lend reserves.

Open-market Operations. In addition to loans directly to member banks the Federal Reserve banks have wide powers to extend or contract their credit by the purchase and sale of specified types of securities in the open market. They may deal in securities issued by, or fully guaranteed by, the United States government; cable transfers; eligible bills of

exchange, both foreign and domestic, including bankers' and trade acceptances; the obligations of states, municipalities, and other political subdivisions, provided the remaining maturity does not exceed six months; and finally, gold coin and bullion, but under the restrictions of the Gold Reserve Act of 1934. Such dealings may be with any bank, business firm, or individual under regulations set forth by the Board. In practice, the open-market holdings have consisted almost entirely of United States securities and bankers' acceptances, and since the early 1930's only of the former.

All purchases and sales of securities in the open market are under the supervision and regulations of the Federal Open Market Committee. No Reserve bank can engage or decline to engage in open-market operations except as directed by this committee.

These operations constitute one of the chief methods of influencing the monetary situation. A sale of securities tends to reduce the cash reserves of commercial banks, thence the stock of money, and therefore the price level. The purchase of securities has the opposite effect.¹

Currency Functions. When larger amounts of currency are needed, the commercial banks experience withdrawals of deposits. Member banks then take steps to replenish their diminished cash from the storehouse provided by the Reserve banks. If the members possess sufficient excess reserve balances, they merely draw upon the excess. But if they have no excess reserves, borrowing at the Reserve banks becomes necessary in order to maintain legal reserves. On the other hand, a return flow of currency from circulation appears first as deposits in the banks and is straightway shipped by them to the Reserve banks for deposit credit (legal reserve). Thus, the Reserve banks serve as central supply stations or currency warehouses, into and out of which flows the country's stock of paper money and coin. A large part of the employed force is occupied with receiving, sorting, counting, and shipping currency as evidenced by the fact that in 1947, 9.6 billion pieces with a value of \$22.7 billion were received and counted.

In addition to the foregoing currency services, the Reserve banks provide about 85 per cent of the country's currency in the form of Federal Reserve notes which are their direct obligations. These notes are more fully described in the following chapter.

Clearings, Collections, and Transfers. The provision of facilities to secure a maximum offset of checks and other cash claims is one of the distinctive services of a central bank. This was recognized by the

¹ See the Appendix of this chapter for a more complete analysis of open-market operations.

framers of the Federal Reserve Act which included provisions contemplating the establishment of clearing and collection machinery nationwide in scope. Such facilities were shortly devised and are now operating with great efficiency.

Each Reserve bank serves as a central clearing house and collecting agency within its own district. Since all member banks maintain reserve deposits, it becomes a simple matter to debit and credit these accounts in settlement of clearing balances. Then through the Inter-district Settlement Fund, in account with the Board of Governors, all the separate districts are welded into a single national clearing unit. If, for example, the claims today of District 1 should exceed those against it by the other eleven districts, the account of District 1 in the Fund would be increased by the excess while the accounts of the other Reserve banks as a group would be equally reduced. By means of the Fund, also, deposits and reserves are speedily transferred by wire from one Reserve district to another—again, by simply debiting and crediting accounts and without the physical shift of currency or gold.

Government Fiscal Agency. A huge volume and many types of financial services are performed for the government by the Reserve banks. The Federal Reserve Act requires the Reserve banks, at the request of the Secretary of the Treasury, to receive government revenues on deposit, to disburse them by check, and to act as fiscal agents of the United States. Also, the Act of May 29, 1920, which provided for the discontinuance of the nine subtreasuries and the transfer of their functions to the Reserve banks, largely increased the scope of such services. When this transfer was completed in 1921, the Reserve banks and their branches became, for all practical purposes, the only wholesale distributors of currency in the country, since new issues of Treasury currency are ordinarily deposited in them.

The deposit accounts of the Treasury with the Reserve banks are fed chiefly by income taxes, customs, miscellaneous internal revenues, post-office receipts, the sale of United States securities, transfers from member bank depositaries, and at times by the deposit of gold certificates, silver certificates, and Treasury currency. Treasury checks, which are payable at any one of the 36 offices of the Reserve banks, are drawn for a multitude of purposes covering the whole range of government activities. Expenditures are made principally for salaries and wages, interest payments, redemption of the public debt, supplies and materials, relief payments, pensions, public works, national defense, and the Veterans Administration. In practice, the Secretary usually maintains a working balance at the Reserve banks and leaves the remainder of the Treasury

balance on deposit with the commercial banks. Checks are seldom drawn upon the commercial bank depositaries except to replenish the working balance at the Reserve banks. Since Treasury expenditures amount annually to many billions of dollars, the deposit account at the Reserve banks experiences a very high rate of turnover.

One of the principal services to the Treasury is that of handling the distribution of government securities. This function assumed particular importance during the depression of the 1930's and especially during the war, owing to the vast volume of deficit financing by the Treasury. The Reserve banks announce each new issue, receive subscriptions, and deliver the securities through their offices. They also act as agencies of the Treasury in cashing interest coupons and in redeeming and converting government securities. Some idea of the enormous volume of these operations is given by the fact that in 1947 the issues, redemptions, and exchanges of United States securities by the Reserve banks amounted to \$254 billion, represented by 177 million separate pieces.¹

Many other services are also performed for the Treasury, including the transfer of government funds wherever needed in the country through the Interdistrict Settlement Fund, the safekeeping of securities, the purchase and sale of securities for various special Treasury accounts, management of war loan deposit accounts in commercial banks, and serving as fiscal agents for government agencies such as the Reconstruction Finance Corporation and the Commodity Credit Corporation. The Federal Reserve Bank of New York serves as the government's agency in gold and foreign exchange transactions, and also as the depository of the International Monetary Fund and the International Bank for Reconstruction and Development.

GROWTH OF THE FEDERAL RESERVE SYSTEM

A brief inspection of Table 9 shows that the Federal Reserve banks have grown to institutions of vast size and power. The Federal Reserve Bank of New York alone, having resources of \$12.9 billion at the end of 1947 is about twice the size of the Bank of England, the second largest bank in the world. Taken together, the Reserve banks are about seven times larger than the "Old Lady of Threadneedle Street."

Some of the included items of the table require further comment. The enormous increase of the resources and reserves of the Federal Reserve banks between 1930 and 1940 is mainly accounted for (1) by the purchase during 1932 and 1933 of more than \$2 billion of United

¹ *Annual Report of Board of Governors*, 1947, p. 69.

States securities in order to stimulate business enterprise with abundant credit and (2) devaluation of the dollar in 1934 which wrote up the value of the gold stock and encouraged gold imports. The doubling of resources between 1940 and 1947 is chiefly accounted for by the purchase of United States securities as a measure of war finance.

The amount of currency handled by the Reserve banks each year draws attention to the magnitude of the task of serving as central supply stations for currency. They receive, count, store, and pay out again from one to three times the entire amount of currency in circulation.

TABLE 9. SELECTED ITEMS SHOWING GROWTH OF THE FEDERAL RESERVE SYSTEM, 1915-1947

(In millions of dollars)

Items	1915	1920	1930	1940	1947
Resources of Federal Reserve banks	491	6,283	5,203	23,262	47,712
Reserves of Federal Reserve banks	358	2,249	3,082	20,036	21,498
Currency and coin handled		6,816	14,800	9,727	22,722
Checks handled		157,500	324,883	280,436	792,207
Collection items handled:					
U.S. government coupons			499	902	2,491
All other			7,528	5,069	6,456
Issues, redemptions, and exchanges of U.S. securities.....			7,245	20,190	254,061
Transfer of funds.....	1,053	92,626	198,881	92,106	316,460
Assets of member banks. .	13,000*	31,184	47,058	62,658	132,043
Number of member banks†	7,631	9,006	8,052	6,486	6,923

SOURCE: Compiled from *Annual Reports of the Board of Governors* as of December 31 of each year except for cumulative items.

* Estimated from loans and investments.

† Statistical unit: one bank.

A comment on the volume of checks handled is scarcely needed since the size of the item speaks for itself. It is enough to remark that this amount in recent years has been roughly equivalent to the entire national wealth.

The effect of war finance is particularly evidenced by the amount of issues, redemptions, and exchanges of United States securities which rose from \$20 billion in 1940 to \$254 billion in 1947.

Finally, a mistaken impression might be conveyed by the decline in number of member banks. Actually, there has been a larger relative decline of nonmember banks so that the proportion of members has

increased. To be more exact, at midyear 1920 the member banks represented 31 per cent of the number and 58 per cent of the deposits of all commercial banks in the country. By midyear, 1949 these percentages were 49 and 85, respectively.

THE FEDERAL RESERVE BANK STATEMENT

An understanding of either the underlying or the day-to-day forces at work in the money market is impossible without close attention to the position of the Federal Reserve banks. Fortunately, the Board of Governors publishes weekly a detailed statement of their condition. These reports along with those of member banks in leading cities, also released weekly, are invaluable to bankers, businessmen, and others who wish to keep well informed on the financial situation. A recent statement of the Federal Reserve banks is presented in Table 10. While some of the items are self-explanatory, several of them require Brief discussion before intelligent interpretation is possible.

The account Gold Certificate Reserve is composed mainly of an account showing the amount of gold certificates due from the United States Treasury; the remainder consists of actual gold certificates on hand.¹ This reserve represents the monetary gold stock which can be lawfully owned only by the Treasury. When the gold stock is increased, the Treasury pays by drawing a check on its deposit account at the Federal Reserve banks. This account is then replenished by depositing an equal amount of gold certificates.

The account Discounts and Advances represents the loans to member and nonmember banks either in the form of rediscounts of customer paper or of promissory notes with collateral security.

The account United States Government Securities consists of the various obligations of the Treasury acquired mainly as a consequence of open-market operations through security dealers. Part of them, however, may have been purchased directly from the Treasury. The shift from "bills" to "bonds" between 1948 and 1949 reflects the Federal Reserve support given to the government bond market.

The accounts Uncollected Items and Deferred Availability Items should be considered together since they represent the same factor from different points of view. The former includes checks and other cash

¹ A portion of the gold-certificate reserve is earmarked to be held by the Treasury as a redemption fund for Federal Reserve notes. This fund must be at least 5 per cent of the Federal Reserve notes against which the Federal Reserve agent does not hold gold certificates as collateral, and a larger fund may be required by the Secretary of the Treasury. At the end of May, 1949, it amounted to \$592 million.

TABLE 10. STATEMENT OF CONDITION OF ALL FEDERAL RESERVE BANKS MAY 31,
1948 AND 1949

(In millions of dollars)

Items	1948	1949
Assets		
Gold-certificate reserve	22,036	23,116
Other cash	268	255
Discounts and advances	306	247
Industrial loans	1	1
U.S. government securities:		
Bills	8,245	4,232
Certificates	4,140	6,758
Notes	1,958	359
Bonds	6,319	8,356
Total U.S. Government securities	20,662	19,704
• Total loans and securities	20,969	19,952
Uncollected items	2,509	2,313
Bank premises	33	32
Other assets	222	215
Total assets	46,037	45,883
Liabilities and Capital Accounts		
Federal Reserve notes	23,675	23,346
Deposits:		
Member bank reserves	17,021	18,024
U.S. government	1,684	628
Foreign	376	471
Other	681	459
Total deposits	19,761	19,582
Deferred availability items	2,223	2,128
Other liabilities	18	13
Total liabilities	45,677	45,069
Capital accounts:		
Capital paid in	198	204
Surplus (Sec. 7)	448	467
Surplus (Sec. 13b)	28	28
Other capital	58	130
Total capital accounts	732	829
Total liabilities and capital	46,037	45,883
Ratio of reserve to deposit and note liabilities, per cent	50.7	53.8

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 678.

claims in process of collection through the Reserve System, while the latter represents the liability of the Reserve banks to the commercial banks during the collection period.

Other Assets is a residual item, including among other things, premium on securities, interest accrued, and deferred charges.

Other Deposits consists mainly of nonmember bank clearing accounts but also includes officers' checks, transfers and exchange drafts, deposits of the Federal Deposit Insurance Corporation, and other special accounts.

The account Capital Paid In represents the capital stock of the Federal Reserve banks which is owned by the member banks. Surplus (Sec. 7) is the earned surplus while surplus (Sec. 13*b*) refers to advances by the U.S. Treasury for the purpose of making "industrial advances."

The account Other Liabilities includes such items as unearned discount on securities, accrued taxes, and unpaid dividends.

The reserve ratio is the relation between the gold-certificate reserve and combined deposit and Federal Reserve note liabilities.

The present brief description of the Federal Reserve bank statement is designed only as a foundation for further consideration in the chapters that follow. In order to appreciate its usefulness one must not only be familiar with the meaning of each item but must also be aware of the relationships among the items and with their significance in the financial situation as a whole.

Review Questions

1. State the ruling function of the Board of Governors of the Federal Reserve System.
2. Indicate the scope of the Board's duties in interpreting and administering the Federal Reserve Act. Give one illustration in detail.
3. List the instruments of credit control that the Board may employ, and state the theory underlying each one.
4. Summarize the supervisory powers of the Board over the Reserve banks, and the member banks.
5. Describe the function of the Reserve banks relating to legal reserves of member banks and to the basic gold certificate reserves of the monetary system.
6. Under what conditions may the Reserve banks make advances of legal reserves to member banks? Explain.
7. Can member banks with eligible or acceptable collateral count on their borrowing power at the Reserve banks?
8. Explain the effects which Reserve bank open-market operations tend to have on the price level.
9. What is the chain of events when the public demands more currency from member banks?
10. Describe the process of clearings, collections, and transfers.
11. What are the main services the Reserve banks perform as fiscal agents of the government.

12. What were the principal factors contributing to the growth of the Federal Reserve System?

13. Explain the meaning of the items in the Statement of Condition of all Federal Reserve banks.

14. What is the meaning and significance of the reserve ratio of the Reserve banks? What factors cause it to change?

15. Interpret the main changes which took place in the condition of the Reserve banks between 1948 and 1949, as shown in Table 10.

Advanced Questions and Problems

1. Develop the several aspects of the concept of economic welfare. In what manner can the Board of Governors foster the welfare of the country?

2. Why are open-market operations sometimes termed mopping-up operations in preparation for a discount-rate change?

3. Assuming no excess reserves and no offsetting rise in reserves, an increase in legal reserve requirements of member banks would be expected to cause a contraction of member bank loans and investments several times larger in amount. Explain.

4. Indicate the recovery measures which the Reserve authorities are likely to undertake during periods of business recession.

5. The Federal Reserve banks and the Treasury have supported the government bond market at approximately par values since the war. How does this dilute the monetary control power of open-market operations?

6. What influence does the maintenance of artificially low interest rates by the monetary authorities tend to have on (a) the commodity price level and (b) the volume of employment and physical production? Explain.

7. Prepare a table showing the Principal Assets and Liabilities of All Federal Reserve Banks for a recent date and for a comparable date in 1940. Explain the significant changes which are brought out by the table.

8. Show the effects on the balance sheets of (a) Federal Reserve banks and (b) commercial (member) banks of a purchase by the former of \$10 million of U.S. securities from life insurance companies (indirectly through dealers). Assume that member banks do not have a legal reserve deficiency and that other factors remain the same.

9. Show the effects on the balance sheets of (a) Federal Reserve banks and (b) commercial (member) banks of a sale by the former of \$10 million of U.S. securities to commercial banks (indirectly through dealers). Assume that member banks hold substantial excess legal reserves.

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APPENDIX

The effects of open-market operations of the Federal Reserve banks can best be visualized by means of a series of concrete illustrations. The Federal Open Market Committee follows the practice of dealing with a few large government security dealers in order to foster an active market. As will presently be shown, it makes a significant difference where the dealers in turn buy and sell the securities.

Open-market Purchases. Assume that the Reserve banks purchase \$100 million of United States securities from dealers by means of officers' checks. The origin of these securities may be (1) individuals and other noncommercial bank interests or (2) commercial banks. These two cases must be considered separately.

Purchase from Noncommercial Bank Interests. If dealers buy the securities from noncommercial bank interests, the effects on the balance sheets of the Reserve and commercial banks would be as follows (assuming that member banks do not have a legal reserve deficiency and that other factors remain the same):

FEDERAL RESERVE BANKS			
Assets		Liabilities	
U.S. securities	+100	Member bank reserve balances..	+100
COMMERCIAL (MEMBER) BANKS			
Assets		Liabilities	
Reserve with Federal Reserve bank	+100	Demand deposits	+100

When the dealers deposit the officers' checks, demand deposits are increased, and when the commercial banks present the checks to the Reserve banks they receive credit to their legal reserve accounts. Thus, in this case both demand deposits and legal reserve balances of commercial banks are enlarged by the amount of the purchase of securities, and excess reserves are increased by the amount less the legal reserve requirement against the new deposits.

Purchase from Commercial Banks. If dealers buy the securities from commercial banks, the changes would be as follows:

FEDERAL RESERVE BANKS			
Assets		Liabilities	
U.S. securities	+100	Member bank reserve balances	+100

COMMERCIAL (MEMBER) BANKS

Assets	
U.S. securities	-100
Reserve with Federal Reserve bank	+100

When dealers purchase the securities from commercial banks, their demand deposits are drawn down, but their accounts are rebuilt by deposit of the officers' checks given by the Reserve banks. Legal reserves of commercial banks rise when they collect the officers' checks from the Reserve banks. Thus, in this instance demand deposits remain the same, total member bank reserve balances increase by the amount of the purchase of securities, and excess legal reserves rise to the same extent.

Open-market Sales. Now assume that the Reserve banks sell \$100 million of United States securities to dealers who in turn sell them to (1) noncommercial bank interests and (2) commercial banks. For the sake of simplicity, assume also that member banks hold substantial excess legal reserves.

Sale to Noncommercial Bank Interests. If dealers sell the securities to non-commercial bank interests, the effects on the balance sheets of the Federal Reserve and commercial banks would be as follows:

FEDERAL RESERVE BANKS

Assets		Liabilities	
U.S. securities	-100	Member bank reserve balances..	-100

COMMERCIAL (MEMBER) BANKS

Assets		Liabilities	
Reserve with Federal Reserve bank	-100	Demand deposits	-100

Thus the operation results in a reduction of both demand deposits and legal reserves of commercial banks by the amount of the sale of securities. Dealers pay the Reserve banks by checks which, when collected, reduce member bank reserve balances. Excess legal reserves decline by the amount of the sale of securities minus the reduction in required reserves, owing to the decrease in deposits.

Sale to Commercial Banks. If dealers sell the securities to commercial banks, the changes would be as follows:

FEDERAL RESERVE BANKS

Assets		Liabilities	
U.S. securities	-100	Member bank reserve balances..	-100

COMMERCIAL (MEMBER) BANKS

Assets

U.S. securities:	+100
Reserve with Federal Reserve banks	—100

In this case both total legal reserves and excess legal reserves decline by the amount of securities sold, and demand deposits are unchanged. The check drawn by dealers in payment to Reserve banks is offset by the deposit credit to their accounts when commercial banks pay for the securities.

CHAPTER XII

BANK-NOTE CURRENCY: FEDERAL RESERVE ISSUES

In modern monetary systems practically all currency needs, aside from small change, are met by note issues of central banks. This practice, however, is the culmination of a long evolution and is of comparatively recent origin. When bank notes first came into use in the second half of the seventeenth century, the currency of Europe consisted almost entirely of coin. In the next two centuries bank notes and coin circulated side by side, but the former gradually displaced the latter in circulation, and large reserves of coin came to be held in bank reserves. In addition, state paper money, used in China for centuries, was issued by certain governments to meet war or other emergency expenditures, and vestiges of such issues usually constituted a part of the money stock.

The bank notes of this period were issued both by the commercial banks and by the existing central banks. But during the last half of the nineteenth century, note issue came more and more to be recognized as a central bank function. Numerous legal restrictions on issue by the commercial banks appeared in various countries. It remained, however, for the period of monetary reorganization following the First World War to hasten this transition. Without important exception, the newly created central banks of the world were then granted a note-issue monopoly.

A central bank has obvious advantages over the individual banks as a note-issuing agency. The essential task of currency regulation—which should have the purpose of providing a safe, elastic currency which circulates at par with standard money—is greatly simplified when there is but one, or a very few, banks of issue. These aims are very difficult, if not impossible, of attainment when notes are issued by thousands of institutions under a “free banking” system.

Experience has also proved that a central bank is better adapted to supply the paper currency of a country than is the treasury department. Under a system of direct issue of government notes there is unquestionably a greater temptation to follow the easier course of paying out more government notes instead of balancing the budget by orthodox means. This inherent feature magnifies the dangers of a drastic inflation with all its accompanying maladjustments and hardships. At best, a treasury

department is likely to regard purely fiscal considerations as always of paramount importance, with the result that questions of proper monetary policy receive inadequate attention.

NATURE OF BANK NOTES

A modern bank note, although a highly specialized instrument, is simply a particular form of credit. It is the promise of a bank, nearly always a central bank, to pay to the bearer on demand a specified sum of standard or lawful money. For the sake of convenience in making payments, such notes are commonly issued in a wide range of denominations. Usually also, their value is tied firmly to that of the monetary standard by the device of interconvertibility, and they are made a legal tender in settlement of debts.

From the standpoint of the balance sheet of the issuing bank, notes do not differ in substance from demand deposits. Both represent liabilities to pay standard or lawful money upon demand; both require adequate liquid reserves for this purpose among the assets. Both of them, furthermore, serve as mediums of exchange and, when taken together, constitute the bulk of payment money.

Despite these basic similarities, however, there are obvious differences between these two forms of money. Notes are issued in round denominations by the central bank and pass from hand to hand without endorsement. Deposits, on the other hand, circulate by checks drawn upon commercial banks for the exact amount of each payment. Checks are usually drawn "to order" rather than "to bearer" and are therefore transferable only upon endorsement. Their goodness depends not only upon the drawee bank but also upon the sufficiency of the drawer's account. For these reasons, checks in contrast with notes seldom have a life beyond the specific transaction for which they are drawn—being speedily returned to the drawee bank for collection.

Another difference between the two forms exists in the more stringent legal regulations applied to notes in most countries. Noteholders are safeguarded by such devices as a prior claim on assets, the deposit of specified securities in trust, guarantee by the government, and high reserve requirements. Deposits, however, are generally free from regulation in foreign countries, and in the United States the restrictions are far less onerous.

This variance in legal treatment arose under earlier conditions when the commercial banks still possessed the issue privilege. If the notes were to serve satisfactorily as currency, it was essential that they be acceptable at par with the standard in all parts of the country. Without certain regulations concerning safety and redemption, such general acceptability would obviously have been impossible, since people not

familiar with the issuing bank would have reason to question their value. Regulations were, therefore, necessary in that period, both to ensure a satisfactory currency and to safeguard noteholders.

Now, with the issue function centralized, numerous existing restrictions have become outworn and continue to exist merely through the force of custom. Even today, however, more stringent regulation of notes is justified in view of the great importance of having a completely satisfactory currency. Checks, in contrast again, are voluntarily accepted by the payee who presumably is familiar with the credit standing of a responsible party, the drawer.

Still a further difference between notes and deposits exists in connection with their specialized functions. Notes are used principally for purposes of small payments in retail trade, for payrolls, and pocket money. Checks, on the other hand, are used in meeting almost all large payments whether by individuals, business firms, or governments. In the English-speaking world, practically all payments for goods at wholesale, securities, real estate, and a large proportion of payments in retail trade are made by check. In all, over 80 per cent of total payments are effected by this method.

On the continent of Europe, however, and in most other countries, notes remain the more important medium. In the United States, it was not until just before the Civil War that the amount of deposits exceeded notes, although checks were used extensively in the cities from the beginning of the nineteenth century. The growth of the check habit proceeded steadily after the 1860's until in the period, 1920-1949 deposit money exceeded currency between $3\frac{1}{2}$ and 6 times. Thus, while central bank notes have come to supply the bulk of the world's currency requirements, deposit money has at the same time become a larger and larger part of the stock of payment money.

HISTORICAL DEVELOPMENT

England. According to students of banking history, bank notes were originated by the London goldsmiths in the second half of the seventeenth century. The following specimen of one of these early notes is of particular interest:¹

Nov. 28, 1648.

I promise to pay the Rt. honble, ye Lord North and Grey, or bearer, ninety pounds at demand

For Mr. Francis Child and myself,
Jno. Rogers

¹ H. D. MacLeod, *Theory of Credit*, 2d ed. (London, Longmans, Roberts and Green, 1893), Vol. I, p. 375.

They were then known as goldsmiths' or bankers' notes. At first they were written in longhand but in 1729 the practice of using printed forms commenced.

The private bankers in England continued to issue notes until the Bank Charter Act of 1844, as did also the joint stock banks and the Bank of England which was chartered in 1694. The bank, however, limited its notes to large denominations so that a large field for the use of coin and the notes of other banks existed.

Two important changes in the currency were brought about by the famous Bank Charter Act of 1844, also known as Peel's Act after Sir Robert Peel. The first of these laid the basis of a note-issue monopoly for the Bank of England throughout England and Wales. Private banks and joint stock banks were prevented from increasing their issues, and it was further provided that the Bank of England might replace two-thirds of any discontinued issues with its own notes. The second change was concerned with the character of Bank of England notes themselves. The bank could issue notes up to £14 million backed by government debt, but beyond this amount the notes were required to be secured pound for pound by gold coin or bullion. With the exception of the fiduciary backing, therefore, the notes became equivalent to gold certificates; and the greater the volume of issue the more nearly they approached this status.

One by one through the years, the joint stock banks and private banks relinquished their right of issue until for practical purposes the bank has been the sole supplier of paper currency since the turn of the twentieth century, with the exception of Treasury currency notes which were issued during the First World War and retired in 1928.

The United States. While there were a few experiments with bank-note issue in the Colonies, such notes were of no real importance. The colonial currency consisted chiefly of a wide variety of foreign coins and notes of the provincial governments.

After the Revolutionary War the growth of the note issues of state-chartered banks was rapid, rising from \$23 million in 1811 to \$239 million in 1863. Until 1836 the notes of the First Bank of the United States (1791-1811) and of the Second Bank of the United States (1816-1836) formed a nucleus for a dependable currency of uniform value throughout the country. But, with a few notable exceptions, the issues of the state-chartered banks represented excessive speculation. Hundreds of such issues circulated at widely varying degrees of depreciation, and note-holders suffered heavily from bank failures. Thus, from the nation's beginning until the Civil War, the currency consisted partly of coin and

good bank notes, but more largely of a motley lot of depreciated state bank issues.

With the establishment of the national banking system in 1863 and the prohibitive tax on issues of state banks in 1866, the only type of paper money supplied by the banks for fifty years was the bond-secured national bank note. Then came the Federal Reserve currency in 1914, which soon overshadowed the national bank notes in importance and finally displaced them entirely in 1935.

PRINCIPLES OF BANK-NOTE ISSUE

Parity with the Monetary Standard. Bank-note currency should be so issued and regulated that it always circulates at par with the country's monetary standard. That is to say, it should never be at a discount, nor at a premium, but should always have identical purchasing power with the monetary unit as defined by law in terms of some ultimate standard. For example, if the dollar is defined as $15\frac{5}{21}$ grains of gold, nine-tenths fine, then a one-dollar bank note should have the same command over goods in the market place as that quantity of gold. When bank notes, as in Great Britain 1925–1931, serve as standard money, a deviation in their value from that of the ultimate gold standard signals that the standard is no longer effective. Gold has gone to a premium or to a discount from its legal price in terms of currency.

Before the First World War a significant part of the monetary gold stock circulated in coin form or as gold certificates. Being full legal tender, and embodying or directly representing the monetary standard, this aristocratic element of the currency came to be known as "standard money." If a monetary system provides for such an exclusive class of standard money, then the principle of bank-note parity should be somewhat revised: The bank-note currency should always circulate at parity with standard money, which in turn should possess identical value with the ultimate standard. This revision obviously represents no change in substance, but merely a special application of the same idea. It applies to the vanishing era when bank notes were put out by numerous independent banks and were not yet worthy of the status of standard money. Now, with the almost complete centralization of note issue in central banks, the tendency is to make them the sole paper currency, full legal tender, and standard money.

In the days when note issue was relatively more important and when a large number of commercial banks retained the privilege, various devices were used in order to safeguard the parity of bank notes. One was the system of making notes a prior lien on all assets of the issuing bank. This method was applied to the notes of the Bank of France,

the national banks in the United States, the Canadian banks, and the Federal Reserve banks. Another device employed was that of setting aside specific high-grade assets as special security for note issue. Examples of this method are found in the Free Banking Law of New York State in 1838, the Bank Charter Act of 1844 in Great Britain, the National Bank Act of 1864, and the Federal Reserve Act of 1913. A third method was the safety-fund system, whereby the note-issuing banks contributed to a fund which was used to prevent loss to noteholders of failed banks. Illustrations are afforded by the Safety-fund System of New York State, 1829, and the safety fund of Canadian banks of issue.

Still another device was a government guarantee, which applied to the old national bank note, and now applies to the Federal Reserve note.

A final method was that of limiting in some way the volume of issue, both in aggregate and for individual banks. This limit might be a sum fixed by law as was true in France until 1928, in Germany before the First World War, and in the national banking system until 1875. The limit was sometimes set in terms of another balance sheet item, usually capital stock, which was the case for the First and Second Banks of the United States, a majority of the state-chartered banks, the national banks, the Reichsbank, and the Canadian banks. Or again, a rather elastic limit might be provided by the familiar method of requiring a minimum reserve of gold or lawful money.

All the above methods have been primarily concerned with ensuring *ultimate* parity or safety of bank notes. But experience has shown that this is not sufficient to provide for perfect parity at all times and places throughout the country. Even though the issuing bank may stand ready to redeem its notes when presented, the cost and trouble of redemption from distant points may cause depreciation. This was the case with respect to notes of New England country banks, it will be recalled, before establishment of the Suffolk system of redemption in 1824. The obvious remedy then for this distance-discount is the presence of adequate redemption facilities and the extension of legal-tender powers to bank notes.

Under the modern system of note issue by central banks, however, neither the problem of ultimate parity (safety) nor of immediate parity requires the employment of a complicated set of safeguards such as those just described. The all-important essential today is to place central bank management in intelligent and experienced hands. Given direction of this high caliber, safety of notes takes care of itself as an incident to a wise general banking policy. The assets of the central bank under such conditions would consist of the ultimate gold and standard money reserves and obligations of the riskless type. Moreover, the

security of notes would further be ensured by a buffer of ample capital funds. Overissue would be prevented by an over-all credit policy which would be directed toward definite monetary and banking objectives. There would be no real reason for reserve requirements set by law, and no necessity for making the notes a prior lien on central bank assets.

Nor can the problem of immediate parity with standard money be called a live issue under modern conditions, since the central bank notes are themselves usually given standard-money status. Parity with an underlying metallic standard can be maintained as long as the central bank stands ready to sell the metal for industrial and export purposes at a fixed price, and to buy it freely at the same price.

Elasticity. Assuming an intelligent policy of credit control, bank-note currency should possess elasticity; *i.e.*, the capacity to expand and contract with changing money requirements. The need for currency exhibits several types of variation. In the normal round of the days of the week, the weeks of the month, and the months of the year, sizable fluctuations occur. For example, larger payroll and retail-trade volumes in the fall usually lead to a rise of about 8 per cent in the volume of money in circulation from the low point of the summer. Again, the different stages of the business cycle lead to an ebb and flow of requirements. Considerably less is needed, of course, during the depression phase when both prices and trade volumes have declined. But should the depression reach a panic stage, a general attempt to convert deposits into currency may occur as people seek a safe medium in which to store values. During a stage of prosperity with rising prices, more money is required than during the depression (nonpanic phase). Finally, long-term influences are constantly at work affecting the demand for currency. The growth of production and trade, assuming the same price level, requires a larger amount. This demand, however, may be offset by a growth in the use of checks, or by a more efficient use of money. The actual trend is thus a net result of opposing forces.

There is little disagreement that, within the limits of basic economic and monetary objectives, elasticity of currency is a highly desirable feature. Unless the currency is sensitively adjusted to the varying demands enumerated above, harmful consequences are likely to follow. This fact is amply demonstrated by the unhappy experience of the United States with an inelastic currency under the old national banking system. Very briefly stated, the objections to an inelastic currency are as follows:

During the usual periods of seasonal rise in money demand, bank reserves are drawn into circulation and are likely to be depleted until

the banks are forced to adopt a restrictive loan policy. This means a high cost of credit to business and actual refusal of many legitimate requests for loans. The result is lessened production and an increase of business failures. The restrictive policy may also precipitate a price decline of securities and commodities speculatively held with borrowed funds.

In the stage of business prosperity, elasticity of currency should at least be sufficient to permit capacity production without hindrance. Otherwise, the consequences will be the same as for a normally active season, but they will be magnified by the additional influence of an active cycle. In the event of a banking panic, the currency should be sufficiently flexible to meet every attempt to transform deposits into currency. If people are convinced that this is possible, currency withdrawals will cease and the money will return to the banks. But if, owing to a rigid currency, people are not so convinced, the panic will swiftly spread until a general bank moratorium becomes unavoidable.

A final objection to an inelastic currency arises from the greater difficulty of protecting the country's gold reserve. In periods when less currency is needed, bank reserves are enlarged and money rates materially decline. Under these circumstances, a gold outflow may reach serious proportions before bank reserves are sufficiently drawn upon to produce the automatic check of high money rates. At the same time, if gold is allowed in circulation, the Treasury's gold position is likely to be weakened by receiving less than the usual proportion of gold in tax payments. An elastic currency, on the other hand, would be retired in such periods without enlargement of central bank reserves.

Those who intelligently oppose an elastic currency do so because of a lack of faith in the ability of monetary authorities to carry out a wise program of control. Obviously, the responsibilities of such authorities are vastly increased by an elastic currency which removes an automatic check to credit expansion. This group, therefore, would prefer to depend upon the automatic barrier to undue expansion provided by a rigid currency rather than to place monetary destiny in the hands of a fallible human agency of control. In other words, they fear the harmful consequences of inelasticity enumerated above less than they fear the inability of a board of control to prevent monetary inflation.

Unfortunately, experience with monetary control admittedly gives this group some basis for their position. It is believed, however, that the groping record of control in the past is not a sufficient reason for turning back to the serious disturbances that arise from an inelastic currency system. Instead, every effort should be made to define pre-

cisely the economic and monetary objectives and to attain them ever more closely through accumulated experience with monetary control. This path, particularly under a democratic system of government, has many pitfalls, but it is the only path forward.

Other Principles and Rules. Before ending this section, certain other less important principles or rules should be mentioned. First, when note issue is an exclusive privilege of the central bank, the notes should be made a full legal tender. This legal sanction adds to their prestige and general acceptability at par. Second, the notes should be issued in such a range and number of denominations as to serve the greatest public convenience. Third, an ample stock of the notes should be maintained so that business may not be hampered by a shortage of any denomination. And last, the notes should be engraved and printed in such manner as to make counterfeiting difficult as well as to meet high aesthetic standards.

FEDERAL RESERVE NOTES

The Federal Reserve System has brought the bank-note currency of the country to an advanced stage in which it not only circulates at par but also possesses the essential feature of elasticity.

Parity. The provisions of the Federal Reserve Act furnish complete assurance of the *ultimate* parity or safety of Federal Reserve notes. In the first place, they are direct obligations of the United States. Strictly speaking, they are therefore not bank notes at all, but government notes. In addition, the notes retain all the safeguards that were designed in the original form of the Act to provide a safe bank note. They are secured by specific collateral lodged with the Federal Reserve agent. Such collateral is restricted to the best assets of the Reserve banks—gold certificates, eligible commercial paper and acceptances, promissory notes of member banks secured by eligible assets, and U.S. government securities. Furthermore, the Board may at any time call upon a Reserve bank for additional collateral. And still further, the notes have the status of a first lien on all the assets of the Reserve bank through which they were issued.

Nor is there any doubt concerning the *immediate* parity of Federal Reserve notes with standard money. Indeed, since the Joint Resolution of Congress in 1933 which made all currency in circulation full legal tender, they have practically been raised to the status of standard money. Each Reserve bank is required to keep a gold-certificate reserve of 25 per cent of its notes in circulation. The notes are redeemable in lawful money on demand at the U.S. Treasury and at any

Federal Reserve bank or branch and are legally receivable by all member banks.

Another provision of the Act designed to maintain constant parity through frequent redemption prevents one Reserve bank from paying out the notes of another on penalty of a 10 per cent tax. As a result, each Reserve bank sorts out and returns the notes of the others for redemption as a part of the day's routine. Redemption is effected through the Interdistrict Settlement Fund of gold certificates in Washington.

Elasticity. The Federal Reserve System has produced a large measure of currency elasticity in two ways: (1) by creating a new mechanism for handling the currency and (2) by furnishing a new elastic element of the currency.

The New Mechanism. The initiative in currency expansion or contraction is taken by the public; it is never taken by the Reserve System except indirectly through general monetary policy. As an illustration of the process, let us assume that the customers of a city bank need \$500,000 additional currency because of the rush of retail trade during the week before Christmas. Accordingly, they check upon their accounts and take paper currency and small change in the desired denominations. In order to meet this demand, the bank is obliged to turn to its Federal Reserve bank which is the currency storehouse of the district. The commercial bank simply checks upon its reserve account and requests the currency shipment. It specifies the amount of each denomination but beyond that it does not care whether the Reserve bank sends Federal Reserve notes, United States notes, or silver certificates. This decision rests with the Reserve bank.

Let us assume further that the commercial bank has no excess reserve and does not wish to call loans or sell securities. In order to keep its reserve up to legal requirements, therefore, it borrows \$400,000 from the Reserve bank (assuming a 20 per cent reserve). At this point, the accounts of the member bank show a decrease of \$500,000 in Deposits, an increase of \$400,000 in Bills Payable, and a reduction of \$100,000 in Legal Reserve. On the Reserve bank statement the changes are an increase of \$400,000 in Discounts and Advances, a reduction of \$100,000 in Member Bank Reserve, an increase of \$250,000 in Federal Reserve Notes in Circulation, and a decrease of \$250,000 in Other Cash.¹

The reverse process by which this currency is retired from circulation in the weeks following the peak of Christmas trade is also of interest.

¹ See the Federal Reserve bank statement on p. 153 in order to trace the effect of these transactions.

Finding themselves with an excessive supply of till money, the stores deposit it with the bank. This immediately piles up an excess of vault cash which is promptly shipped to the Reserve bank at the latter's expense for credit in the legal reserve account. In so far as the currency consists of the Reserve bank's own notes, its liability for notes in circulation is decreased, but to the extent that it is composed of other kinds of money, cash assets are enlarged.

The question here arises: What motives lead the member banks to return currency promptly to the Federal Reserve banks? Obviously, the degree of contractility depends on the strength of these motives. First, if the members are indebted to the Reserve banks, they send in any excess cash in order to save interest by keeping that indebtedness at a minimum. But even if the members are not in debt, experience indicates that other motives are sufficiently strong. One of these is the fact that vault cash does not count as legal reserve, but only the reserve balance at the Reserve bank. Another is that the legal reserve account represents a more mobile and convenient form of reserve asset. By a check upon this account or by telegraphic transfer the purchase of securities or other payments may readily be made. Still another reason is the greater safety provided by the Reserve bank vaults. And finally, the Reserve banks facilitate the whole process by standing the charges of currency shipment.

Before the Federal Reserve System the store of currency not needed by business was held in thousands of separate commercial bank vaults. The chief custodians were the large city banks. Outlying banks deposited excess currency with them in dull seasons and called it out again as the public required. As we have already seen, this arrangement embodied serious weaknesses associated with the rigid and scattered stock of currency as well as with the failure of the great city banks to assume their full responsibility as reserve agents.

The fact that commercial banks now have an elastic supply of currency readily available greatly reduces the amount that they need for their own vaults. For example, New York City banks in the old days usually held more than 25 per cent of total deposits in vault cash, while today they seldom keep more than $\frac{1}{2}$ per cent. The change is less striking for all commercial banks but is nevertheless very substantial; vault cash used to be between 12 and 15 per cent whereas now (1949) it is less than 2 per cent of total deposits.

For all the various currency services supplied free of charge to members and the Treasury, the Federal Reserve banks necessarily stand a considerable burden of expense. These services include the sorting,

wrapping, storing, boxing, shipping, paying, and accounting for all kinds of currency flowing in and out as well as supplying new issues of Federal Reserve notes.

Elasticity of Federal Reserve Notes. In the foregoing illustration of how the Federal Reserve System provides elasticity of the currency, it was assumed that the Reserve bank held a sufficient stock of its own notes, or of other cash, to meet the request for currency by the member bank. This, however, is seldom the case in December when all commercial banks are making similar requests. We, therefore, must trace the process back one step further in order to show how the Reserve bank may replenish its stock of Federal Reserve notes.

Let us suppose then that the combined withdrawals of currency by members prompt the Federal Reserve Bank of New York to add \$50 million to its stock of Federal Reserve notes. It makes a formal request for the notes to the Federal Reserve agent of the Bank,¹ and at the same time tenders the agent sufficient eligible collateral to cover the amount of the notes. One of the agent's principal duties has to do with note issue. He holds the pledged collateral in trust and in general supervises the issue and retirement of notes at his bank. He also keeps on hand a reasonable stock of unissued notes. It is very likely, therefore, that he can immediately issue the notes to the bank upon the pledge of collateral. This we shall assume to be the case. The Federal Reserve Bank of New York is then in position to meet additional requests for currency.

The issue of such a large amount of notes, however, reduces the agent's supply below a safe working level. He therefore makes application to the Board of Governors for additional notes. It grants the application (usually a matter of routine) and orders the Comptroller of the Currency, who has charge of the central stock of such unissued notes, to ship the specified amount. This rebuilds the agent's stock of unissued notes up to a normal volume.

The next question concerning elasticity of Federal Reserve notes is that of the limits to expansion. Under existing law, the effective limit is set by the 25 per cent legal reserve requirement which permits a volume of notes in circulation up to four times the amount of the gold-certificate reserve. Theoretically at least, expansion may go beyond this point if the Board uses its power to suspend reserve requirements.² This, however, would bring into effect a graduated tax upon the amount of the

¹ It will be recalled that the Federal Reserve agent of each Federal Reserve bank is one of the Class C directors appointed by the Board of Governors and is chairman of the local board.

² Any reserve requirements of the Act may be suspended by the Board for a period of 30 days with subsequent 15-day extensions.

reserve deficiency.¹ The Board of Governors also has other powers which may affect the note expansion limit. It may call upon the Reserve banks for additional collateral against notes; it may refuse to grant applications for the issue of more notes; and it may charge interest upon the part of Federal Reserve notes that is not secured by gold certificates in the hands of the Federal Reserve agents. In practice, no one of these powers has been employed. Rather, the Board has preferred to exert only an indirect influence over the demand for currency through its broad powers of credit control.

As far as an individual member bank is concerned, the only limit upon the amount of cash that may be paid out by a Federal Reserve bank is the latter's discretion in making advances upon acceptable assets.

There is no need to discuss at length the reverse process by which Federal Reserve notes are retired from circulation whenever a redundancy of currency occurs. The motives that prompt member banks to return such notes are precisely the same as those, just described, which operate with respect to all kinds of hand-to-hand money. A Reserve bank that desires to retire part of its notes may do so by depositing them with its Federal Reserve agent. This entitles it to possession of the collateral thereby released. Such retired notes are, if fit, then added to the agent's unissued stock and are subsequently reissued under the same conditions that apply to a new issue.

In general, Federal Reserve notes experience similar fluctuations to those of total currency. This would be expected in view of the fact that they constitute the major part of the currency. There have been occasions, however, when substantial changes in the amount of Federal Reserve notes have taken place without a corresponding change in the total currency. Such changes have resulted from alterations in monetary laws or in currency policies of the monetary authorities. For example, during 1917 and 1918 gold was withdrawn from circulation and concentrated in the Reserve banks in order to meet the strain of financing the First World War. Federal Reserve notes were issued in place of the gold and also to meet rising total currency needs. Then in the period 1923-1925 the opposite policy of paying gold certificates into circulation was adopted. This was done for the purpose of preventing large gold imports from entering the reserves of the Federal Reserve banks. An

¹ This tax amounts to not more than 1 per cent per annum upon the deficiency until the reserve falls to 20 per cent. As the reserve falls below 20 per cent the tax rises not less than $1\frac{1}{2}$ per cent for each $2\frac{1}{2}$ per cent decline, or fraction thereof, in the reserve ratio. The tax is to be paid by the Federal Reserve banks but their official discount rates must be raised sufficiently to cover the amount of the tax. Thus far the tax has not been applied.

increase in circulation of gold certificates of about \$800 million largely accounts for the decline of Federal Reserve notes in those years.

A still further illustration may be drawn from monetary developments during the 1930's. Gold, gold certificates, and national bank notes were withdrawn from circulation. At the same time more silver certificates were issued, although not in sufficient volume to offset the retirement of the other kinds of money. The net result was that more Federal Reserve notes were called into circulation to replace these retired elements as well as to meet a general rise in currency requirements.

It should be recognized that elasticity of Federal Reserve notes, arising merely from such changes in the composition of the currency, is not really significant from the viewpoint of total currency elasticity. Federal Reserve notes in these instances were not responding to the public demand for currency so much as they were merely adjusting themselves to arbitrary monetary changes effected by law or by Treasury or Federal Reserve policy. No matter what the make-up of the currency, the really important requirement is that the total stock shall possess a reasonable degree of elasticity. Whether this feature derives from one component or from all components is relatively unimportant.

One other matter requiring discussion is the relation between the elasticity of Federal Reserve notes and the collateral that backs them. The framers of the original Federal Reserve Act intended that the collateral should consist only of rediscounted, short-term commercial paper. According to their plan, this paper would flow to the Reserve banks in periods of active business and serve as a basis for additional note issue. Then in periods of dull trade, seasonal or cyclical, when less currency is needed, rediscounts would be repaid and the Federal Reserve notes would of necessity be retired. Thus, in their minds, elasticity was linked to, and was to be enforced by, the pledged collateral.

Such a rigid application of the commercial asset theory proved to be impractical. From the beginning the Reserve banks used their power to substitute gold and gold certificates for commercial collateral as a means of utilizing a large part of their reserves for the purpose. Then in June, 1917, the Act was amended to make this practice definitely lawful, and also to permit the use of promissory notes of member banks secured by United States obligations, or other eligible assets, as backing for Federal Reserve notes. The greatest departure from the original conception, however, began in 1932 when direct obligations of the United States were permitted as collateral.

A comparison, moreover, of the volume of Reserve bank rediscounts with currency demands shows that the original theory was quite unwork-

able. It assumed a far closer correspondence between the two factors than in fact exists in Anglo-Saxon countries where the principal medium of payment is deposit money. There is a rough correspondence but not one of sufficient exactitude to be useful as a currency regulator. Such influences as gold movements, volume of Treasury currency, Treasury cash and deposits at the Reserve banks, open-market operations of the Federal Reserve banks, bank failures, bank service charges, and changes of monetary habits, all combine to complicate what appears on first view to be a simple and dependable relationship.

Furthermore, in a crisis such as 1932-1933, a rigid requirement for commercial paper collateral is very likely to prove restrictive. A large

TABLE 11. FEDERAL RESERVE NOTE ACCOUNT IN MAY, 1939 AND 1949
(In millions of dollars)

Federal Reserve notes and collateral	May 24, 1939	May 25, 1949
Federal Reserve notes outstanding.....	4,747	23,962
Collateral held against notes outstanding:		
Gold certificates	4,873	13,554
Eligible commercial paper.....	4	50
U.S. Government securities.....	0	11,625
Total collateral held.....	4,876	25,229
Collateral required.....	4,747	23,962
Excess collateral.....	129	1,267

SOURCE: *Federal Reserve Bulletin*.

number of banks may exhaust their supply of eligible paper so that they are no longer able to borrow Federal Reserve notes. It is also possible that such a requirement may prevent the Federal Reserve System from carrying out what they believe to be a wise credit policy. For example, the change of law in 1932 which permitted the use of direct United States obligations as collateral was necessary before the System was free to cushion deflationary forces by its large open-market purchases.

Statistics of Federal Reserve Notes. Table 11 compares the Federal Reserve agents' report on note issue in 1939 and 1949. It appears on the financial page of leading newspapers each Friday (statement of preceding Wednesday), and also in the monthly *Federal Reserve Bulletin*.

In addition to the "Federal Reserve notes outstanding" which means the total amount issued by the Federal Reserve agents to the Reserve banks, the agents keep a stock of unissued notes on hand for any emer-

gency. Also, the amount of notes "in circulation," against which the 25 per cent gold-certificate reserve must be held, has been about \$1 billion less than the amount "outstanding." The difference between the two figures represents the amount held by the Federal Reserve banks and the Treasury—\$863 million and \$55 million, respectively, at the end of April, 1949.

In the prewar year 1939, the collateral held by the Federal Reserve agents consisted almost entirely of gold certificates, but in 1949 United States securities were also largely being used for the purpose.

Desirable Changes Relating to Federal Reserve Notes. Although Federal Reserve notes measure up to the standards of a perfect bank-note currency in all major respects, there are at least two ways in which the conditions of issue might be still further improved. First, there is no real purpose served by the pledge of specific collateral with the Federal Reserve agents. The fact that the notes are government obligations as well as a first lien on Reserve bank assets is surely sufficient protection without the additional red tape of this requirement. Moreover, in 1932 this provision proved to be a definite obstacle to the Reserve System in pursuing what they believed to be a proper credit policy. Before they were free to ease deflationary pressure by large purchases of United States securities, the Glass-Steagall Act, which made such securities eligible collateral during the emergency, had to be rushed through Congress.

Another desirable change would be a lowering of the legal reserve requirement for Federal Reserve notes. The chief argument in favor of this step is that it would give the Reserve banks greater power to combat a major hoarding panic such as that of 1933 which closed the Reserve banks. Logically, it should be possible to convert the whole of demand deposits into currency, if the public so desires, without a moratorium or a departure from the gold standard. Such procedure would not be inflationary since there would be no change in the total means of payment. It would simply represent a change in the composition of money. In order to make a wholesale conversion of this kind possible it would theoretically be necessary to lower the reserve requirement for notes to coincide with that applying to demand deposits of member banks. For practical purposes it would not be necessary to lower the requirement to that extent. A bold policy of paying out currency in a period of hoarding, combined with public knowledge that the Reserve banks possess large capacity to make such a conversion, would doubtless prevent the spread of public distrust in the banks.

The chief objection to lowering the legal minimum reserve is the

greater danger of inflation that comes from removing a check upon credit expansion. Those who have no faith in the future of monetary control by the Board of Governors have good reason to oppose such a change. But with the prospect that the Reserve System with its enlarged powers will exert a greater influence than in the past, the main hope that inflation may be avoided rests on wise monetary management. If the Board courageously uses its powers to maintain the monetary standard and to promote sound credit and business conditions, there is little need for concern. On the other hand, if the Board simply tries to hold expansion within the limit set by the reserve ratio, the dangers of undue inflation upon the greatly increased gold reserve base are grave indeed. As a matter of fact, a logical accompaniment of the act's wide grant of discretionary power to the Board would be the exemption of the Reserve banks from all reserve requirements. Precedent for such a change is to be found in the Bank of France and the Banking Department of the Bank of England. In both cases, the reserve ratio has always been left entirely to the discretion of the central bank authorities.

FEDERAL RESERVE BANK NOTES AND NATIONAL BANK NOTES

One of the aims of the Reserve System's founders was unification of the currency. In addition, therefore, to provision for the Federal Reserve note, they contemplated retirement of the \$700-odd million of national bank notes then in circulation. The Federal Reserve bank note was designed merely to bridge the transition to eventual currency unification. The Board of Governors was given power to require the Reserve banks to purchase annually a limited amount of the government bonds which were eligible as security for the national bank notes. The Reserve banks then might issue Federal Reserve bank notes to replace the retired national bank notes, or they might exchange the bonds for other government securities affording a higher yield. In the latter case no Federal Reserve bank notes would be issued. The program was entirely inadequate for the purpose and its administration was even less aggressive. Only about \$75 million of the bonds were purchased from national banks, the greater part of which was converted to higher yielding securities. The peak use of the Federal Reserve bank notes in meeting their original purpose was about \$10 million in 1918. The bond-retirement program was interrupted by the First World War and was not afterward resumed.

The Federal Reserve bank notes have, however, been employed on three occasions for special purposes not originally contemplated. The first was during the First World War, the second during the financial difficulties of the 1930's, and the third was during the Second World War.

Issuance during the First World War. Principally for the purpose of aiding Great Britain to meet a financial emergency in India, the Pittman Act was passed and approved April 23, 1918. It authorized the Secretary of the Treasury to melt and sell as bullion not over 350 million standard silver dollars at a price not less than \$1 per fine ounce. Silver certificates were to be retired from circulation as the coin backing them was melted and sold. But since the certificates supplied most of the \$1 and \$2 bills in circulation, it was also necessary to provide a substitute currency. In order to meet this need the Board of Governors was authorized to require the Reserve banks to issue Federal Reserve bank notes in an amount not exceeding the silver dollars melted and sold. Issues of such notes were to be secured by short-term government obligations deposited with the Treasury.

In all, 260 million silver dollars were melted and sold, and \$259 million of Federal Reserve bank notes were issued by the Reserve banks by the end of 1919. Unfortunately the act also provided for repurchase and recoinage of the silver. The Federal Reserve bank notes were to be retired as silver certificates were issued to take their place. By the end of 1923, this repurchase program was completed, and only a negligible amount of Federal Reserve bank notes remained in circulation until the next occasion for their emergency use in 1933.

Emergency Use in 1933. At the time of the banking crisis and moratorium in March, 1933, it was thought best to provide an emergency currency that might be paid out if withdrawals should continue after reopening the banks. Accordingly, the Emergency Banking Act of March 9, 1933, included provisions which adapted the Federal Reserve bank note to this purpose. The Reserve banks were authorized to deposit with the Secretary of the Treasury (1) United States securities or (2) commercial paper acquired under the Federal Reserve Act, in return for which they might receive Federal Reserve bank notes from the Comptroller of the Currency. Against the former class of security, such notes might be issued up to 100 per cent of face value, but against commercial paper, their issue was restricted to 90 per cent of the value of the pledged collateral. The notes were redeemable in lawful money, but not in gold, at the Treasury or at the Reserve bank of issue. They were given the same legal-tender feature as national bank notes, and in June, 1933, were, along with all other forms of currency, made a full legal tender by a resolution of Congress. Thus, emergency arrangements were made whereby any conceivable public demand for currency might be met upon reopening the banks.

But as most informed persons expected, the people did not want

currency when they became convinced that it was available. The return of confidence brought a heavy inflow of hoarded money from the moment the banks were reopened. Consequently, there was no actual need for the new currency. For some reason, however—presumably as a demonstration of its availability—some was issued until the end of the year, when it reached a maximum of \$208 million. After that time the Federal Reserve bank notes were gradually retired until the Second World War when new issues were made once again.¹

Use during the Second World War. The sharp rise in the demand for currency during the war was met in part by utilization of the unissued stock of Federal Reserve bank notes. These were issued beginning in December, 1943, and reached a circulation peak in November, 1944, of \$627 million. Since that time unfit notes have been retired until the amount in circulation at the end of April, 1949, was \$315 million.

It should be pointed out that the notes issued during the war were not liabilities of the Federal Reserve banks as in the previous instances of issue, but were obligations of the Treasury, *i.e.*, a part of Treasury currency. They were utilized in order to save labor and scarce materials, and not because of a scarcity of gold reserves to support Federal Reserve notes.

Provision for complete extinction of Federal Reserve bank notes was made by an amendment to the Federal Reserve Act in June, 1945, which removed the authority of the Reserve banks henceforth to issue them.

Retirement of National Bank Notes. An effective plan for the retirement of national bank notes was finally announced by the Treasury Department on March 9, 1935. It came as a pleasant surprise to those who had long hoped that this desirable change might be made, but who had almost despaired of its occurrence, especially after the emergency provision for further expansion of the notes contained in the Home Loan Bank Act of July, 1932. A call for redemption of all the 2 per cent bonds bearing the circulation privilege, amounting to \$674 million, was made on or before August 1, 1935. National banks discharged their liability for the notes by this date either through direct payment to the Treasury or by offset against their pledged bonds and the 5 per cent redemption fund. For the purpose of redemption of the bonds, the Treasury earmarked \$646 million of the gold profit from dollar devaluation. This was deposited from time to time with the Reserve banks in the form of gold certificates.

¹ The Federal Reserve banks discharged their liability for Federal Reserve bank notes in March, 1935, by payment to the Treasury. Since that time they have been an element of Treasury currency.

This move, along with the termination of Federal Reserve bank notes in 1945, reduces the paper currency to three kinds: Federal Reserve notes, United States notes, and silver certificates.

Review Questions

1. Discuss the advantages of issuance of paper currency by the central bank rather than by commercial banks or the treasury.
2. State the differences between modern bank notes and demand deposits.
3. Give a brief résumé of the historical development of the institutions issuing bank notes in England and in the United States.
4. Define parity with the monetary standard and explain the various methods of attaining parity.
5. How does the problem of assuring parity today differ from the days when numerous independent commercial banks issued bank notes?
6. Summarize the reasons for the ebb and flow of currency requirements.
7. What are the objections to an inelastic currency?
8. State the principles that should guide central bank-note issue.
9. Summarize the means by which ultimate and immediate parity are ensured for Federal Reserve notes.
10. Describe the mechanism by which currency expansion and contraction takes place.
11. What are the motives that cause member banks to return excess currency to the Federal Reserve banks?
12. Describe the process of expansion of Federal Reserve notes; the process of contraction.
13. Why did the original commercial asset theory of regulation of the amount of Federal Reserve notes prove unworkable?
14. Compare the forms of collateral held by Federal Reserve agents against Federal Reserve notes in 1939 and 1949.
15. Summarize the desirable changes that might be made with respect to Federal Reserve notes.
16. Distinguish between Federal Reserve notes and Federal Reserve bank notes and indicate the place which the latter have occupied in the currency.
17. Explain the method of retirement of national bank notes which was applied in 1935.

Advanced Questions and Problems

1. Calculate the potential limit of expansion of Federal Reserve notes on the basis of \$10 billion of gold-certificate reserve held by the Reserve banks.
2. Explain the fact that at times the amount of Federal Reserve notes has moved in the opposite direction to the change in the total currency.
3. What relation does the amount of Federal Reserve notes usually bear to the amount of Reserve bank credit in the forms of loans and securities? Explain.
4. (a) Discuss the various factors that will determine the amount of Federal Reserve notes in circulation during the third week in December of this year. (b) Estimate (1) total currency in circulation and (2) Federal Reserve notes in circulation, during the third week in December of this year. Explain methods of estimate. (Source of past data: *Federal Reserve Bulletin*.)

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CHAPTER XIII

BANK DEPOSITS

Bank deposits constitute one of the most influential factors in the whole financial system. They are not only the largest element of the money stock but they are also an important form of investment. In the United States deposit money is normally about four-fifths of total payment money, and between 80 and 90 per cent of all payments are made by means of checks drawn upon deposit accounts.

To the individual bank, deposits are the dominant source of funds. More concretely, deposits of all banks in the United States were \$155 billion, and capital funds—the other main source—were \$12.7 billion at the end of April, 1949. Thus, 92 per cent of total funds came from deposits. The legal relationship between the depositor and his bank is that of creditor and debtor, so that the banks employ borrowed funds more than any other type of business enterprise.

CLASSIFICATION OF DEPOSITS

Bank deposits may be significantly classified, depending upon the purpose to be served, on any one of the following bases: (1) time until maturity; (2) technical form of the deposit, *e.g.*, open account or certificate; (3) type of depositor, such as (*a*) individuals, bankers, and governmental units and (*b*) consumers or producers; (4) banks holding the accounts, by type, size, or location; (5) money or nonmoney; (6) size of accounts; and (7) velocity or turnover. Still other bases, as well as more detailed subdivisions, may of course be essential for particular purposes.

Legal Definitions. The most widely used classification of all is that based upon the definitions of the Board of Governors. These may best be discussed with reference to Table 12 which shows a detailed statement of deposits for all insured commercial banks in the United States.

“Demand deposits” are defined by the Board as those which the depositor has a right to withdraw within 30 days. In practice, all demand deposits, except a small fraction represented by certificates of deposit, are contractually withdrawable immediately upon demand as the name implies. The bulk of such deposits is owned by individuals

and business firms, but a substantial amount is also held for the account of governments.

"Interbank deposits" are largely withdrawable upon demand although some accounts are on a time basis. Part of them also represents deposits of foreign banks.

TABLE 12. CLASSIFICATION OF DEPOSITS OF INSURED COMMERCIAL BANKS,
DECEMBER 31, 1948*
(In millions of dollars)

Demand deposits:	
Individuals, partnerships, and corporations	81,699
U.S. government	2,325
States and their subdivisions	7,186
Cash letters of credit, certified, officers', and travelers' checks, and amounts due to Federal Reserve banks . . .	2,113
Total demand deposits (excluding interbank)	<u>93,323</u>
Interbank deposits:	
Domestic banks	10,344
Foreign banks	1,488
Total interbank demand deposits	<u>11,832</u>
Time deposits:	
Individuals, partnerships, and corporations	34,262
U.S. government	111
Interbank	69
Postal savings	6
States and their subdivisions	1,080
Total time deposits	<u>35,528</u>
Total deposits	<u>140,683</u>

SOURCE: Federal Deposit Insurance Corporation, *Report 28*, p. 9.

* These banks hold 98.5 per cent of the total deposits of all commercial banks in the United States. Savings banks, however, hold some \$19 billion of savings deposits.

"Time deposits" are defined as those which by contract are not withdrawable until the expiration of 30 or more days' notice. The greatest part of these is evidenced by savings passbooks. This division is technically known as "savings deposits" which are principally small accounts of individuals. In fact, time deposits of profit-making enterprises cannot be classified as savings deposits. Savings deposits are not lawfully payable to any person other than the depositor himself. An entry is ordinarily made in the passbook at the time of each withdrawal of funds, but a depositor may also take out funds without presentation of the passbook provided the entry is made as soon as practicable. While banks have the right to require 30 or more days' notice before paying out "sav-

ings deposits," the usual practice is to pay them on demand. Banks must, however, treat all their savings depositors alike in this respect.

The other subdivisions of "time deposits" are far less important, but it is nevertheless desirable to consider their form and character. "Time certificates of deposit" are those that are evidenced by negotiable or nonnegotiable instruments which provide that a specified sum is payable after the expiration of 30 days or more, or after at least this period of notice. "Time deposits, open account" is defined by the Board as "a deposit other than a 'time certificate of deposit' or a 'savings deposit,' with respect to which there is in force a written contract with the depositor that neither the whole nor any part of such deposit may be withdrawn, by check or otherwise, prior to the date of maturity, which shall be not less than thirty days after the date of the deposit, or prior to the expiration of the period of notice which must be given by the depositor in writing not less than thirty days in advance of withdrawal." "Christmas savings" are included in the "open account" category.

There is considerable variation among banks of different size and location regarding the forms of "time deposit." The "time certificate of deposit" is relatively more important in the smaller banks of the Middle West. For example, in the country national banks of Nebraska and Kansas, the amount of such certificates exceeds "savings deposits," while in several other states of that section certificates are nearly as important. "Time deposits, open account," on the other hand, are used more extensively in the cities than are "time certificates." Both of these forms, in general, represent time deposits of business enterprises and wealthy people. Most individuals have the ordinary passbook "savings deposit."

Money and Nonmoney Deposits. The most workable definition of money includes demand deposits (except interbank) and excludes time and savings deposits. The latter are better regarded as a liquid non-money asset since they are not used directly in making payments.¹

Ownership of Deposits. The ownership of demand deposits is widely distributed among business firms and individuals, as is brought out by Table 13. Nearly three-fifths of demand deposits is owned by domestic business firms, and somewhat more than one-third by individuals (including farmers). Nonfinancial businesses accounted for 49 per cent and financial businesses for 9 per cent at the end of January, 1949.

Since time deposits are not included in Table 13, it should be noted that individuals owned the bulk of the \$54 billion of such deposits existing on the same date.

¹ See Chapter XVIII for a more complete discussion of this question.

Size of Accounts. The distribution of deposits by size of account, as shown in Table 14, brings out certain significant facts. First, demand accounts of \$5,000 or less represent 95 per cent of the number but only

TABLE 13. OWNERSHIP OF DEMAND DEPOSITS OF INDIVIDUALS, PARTNERSHIPS, AND CORPORATIONS, JANUARY 31, 1949

(In billions of dollars)

Type of owner	Billions of dollars	Percentage of total
Domestic business:		
Corporate	34.9	43.5
Noncorporate	11.7	14.6
Total domestic business	46.6	58.1
Manufacturing and mining	17.1	21.3
Public utilities	3.9	4.9
Trade	13.4	16.7
Other nonfinancial	5.0	6.2
Total nonfinancial business	39.4	49.1
Insurance companies	2.5	3.1
Other financial	4.7	5.9
Total financial business	7.2	9.0
Individuals:		
Farmers	7.1	8.9
Others	22.0	27.4
Total individuals	29.1	36.3
Trust funds	1.6	2.0
Nonprofit associations	2.9	3.6
Foreigners (business and individual)	0.7	0.9
Total demand deposits	80.2	100.0

SOURCE: *Federal Reserve Bulletin*, May, 1949, p. 500.

28 per cent of the amount of demand deposits. Second, demand accounts of more than \$25,000 represent less than 1 per cent of the number but more than half the amount of deposits. Last, the distribution of time and savings deposits is a much broader one than that of demand

deposits. About 98 per cent of the number and three-fourths of the amount are represented by accounts of \$5,000 or less. The average size of account in mutual savings banks—not included in Table 14—is somewhat smaller than that of time and savings accounts of commercial banks.

TABLE 14. DISTRIBUTION OF DEPOSITS OF INSURED COMMERCIAL BANKS, BY SIZE OF ACCOUNT, OCTOBER 10, 1945

Size group	Number of accounts, thousands	Amount of deposits, millions	Percentage distribution	
			Number of accounts	Amount of deposits
Demand accounts of:				
\$5,000 or less	33,851	\$19,908	95.1	27.7
\$5,001–\$10,000	939	6,479	2.6	9.0
10,001–25,000	521	7,879	1.5	11.0
Over \$25,000	299	37,613	0.8	52.3
Total demand accounts	35,610	\$71,879	100.0	100.0
Savings and time accounts of:				
\$5,000 or less	40,095	\$20,954	97.9	74.4
\$5,001–\$10,000	711	4,439	1.7	15.8
10,001–25,000	131	1,786	0.3	6.3
Over \$25,000	18	994	0.1	3.5
Total savings and time accounts	40,955	\$28,173	100.0	100.0

SOURCE: Federal Deposit Insurance Corporation, *Annual Report*, 1946, pp. 85–86.

THE CREATION OF DEMAND DEPOSITS

From the standpoint of the banking system as a whole, most of existing demand deposits (excluding interbank deposits) have been created by additions to bank loans and investments. The proceeds of new loans are usually credited to the borrowers' accounts, and the resulting deposits then remain in existence until snuffed out by the subsequent repayment of loans or by the sale of bank investments. Similarly, when the banks are expanding their holdings of investment securities, deposits increase by a roughly equivalent amount. That is, deposit credit may be given directly in payment for securities; or, deposits may increase indirectly as soon as the sellers of securities deposit the checks received in payment—drawn, we may assume, upon the Federal Reserve banks.

The great rise in deposits during the war took place mainly as a result of the purchase of United States securities by the banks.

Another part of existing deposits, smaller in amount, was created gradually as the community entrusted reserve money to the banks and received deposit credit as a substitute medium of payment. The large imports of gold since the early 1930's account directly for a material increase in deposits. Then as the habit of using checks grew, bank notes were shifted into deposits. This substitution of deposits for bank notes, however, is not to be regarded as an independent source of deposits. Except in so far as the notes are thought of as being covered by an equivalent amount of reserve money, they were themselves originally created by the expansion of bank loans and investments.

Thus, for the banking system as a whole, demand deposits arise basically in only two ways: (1) expansion of bank loans and investments and (2) deposit of currency or of reserve money, imported or released by the central bank or the government.

The position of the individual bank is somewhat different. From day to day its deposits may increase as a result of (1) currency deposits, (2) deposits of checks and other claims to cash, and (3) expansion of its loans for which payment is made by giving deposit credit. But a lasting increase of its deposits is most likely to occur only in the second way, as it gains deposits from other banks. What it gains in deposits of currency in one day, week, or month is liable to be withdrawn presently when currency needs revive. Neither can it expect to retain for long the deposits that it has created by making new loans. All or most of such deposits are shortly checked away in payment of the debts which prompted the borrowing. In this latter respect, the position of the individual bank stands out in marked contrast to that of the whole banking system. For, while a single bank is unable to increase its own deposits appreciably by making new loans and investments, the deposits of the banking system largely originate in this manner.

This contrast between the individual bank and the whole system should also be kept in mind in the use of the terms "primary deposits" and "derivative deposits." For the single bank the term "primary deposits" means deposits of currency or checks and cash claims upon other banks. Deposits growing out of expansion of its own loans are usually called "derivative deposits." But for the whole banking system the bulk of all deposits are derivative, as we have seen, from loans and investments; and primary deposits consist only of currency and reserve money.

MOVEMENTS AND RELATIONSHIPS OF DEPOSITS

One of the interesting features of deposits is their behavior in relation to certain other economic and financial factors. Some of these relationships are considered in the present section; certain others can be more logically and conveniently considered elsewhere.

Growth of Deposits. Demand deposits have experienced a tremendous growth since the outbreak of the First World War in 1914. Between that date and April, 1949, they expanded from \$10.1 billion to \$84.5 billion—more than eightfold. The bulk of this growth is attributable to war finance, since deposit money doubled during the First World War and nearly trebled during the Second World War as the banks directly or indirectly loaned to the government (see Chart 6).

Time deposits increased steadily from \$8.3 billion in 1914 to \$29 billion in 1931, after which their growth was interrupted by the depression. During and since the war they more than doubled and amounted to \$58.1 billion in April, 1949. This great increase can be accounted for by the combined effects of monetary expansion and the rise of national income. A notable feature of time-deposit growth has been the expansion of the time-deposit business of commercial banks. In 1914 they held about the same amount of time deposits as the mutual savings banks, but in 1949 they held twice as large an amount. This development was made possible by the liberalization of the law applying to national banks. Before 1914, real estate loans, the largest outlet for time deposits, were prohibited; and in addition no distinction between time and demand deposits was made in legal reserve requirements. These handicaps, which prevented national banks from competing for such business with state-chartered institutions, were both largely removed by the original Federal Reserve Act and its subsequent amendments.

Cyclical and Seasonal Fluctuations. Chart 6 also shows that deposits move in cycles and vary somewhat with the seasons. The seasonal variation, however, is so small that it is of little significance. In an average year demand deposits are about 2 per cent larger in the last quarter than in the first quarter. With the exception of a dip in August, they tend to rise from a low point reached in February until the end of the year. Time deposits are free from regular seasonal fluctuations.

During the course of the business cycle, demand deposits follow a pattern which is roughly similar in major cycles to that of general economic activity. That is, they rise in boom periods and decline in depression periods. As a rule, however, their changes occur several

months, and sometimes more than a year, after large changes in the volume of production. This lag is to be expected in view of their close dependence on the amount of total bank loans and investments which exhibit a similar lag behind business activity.

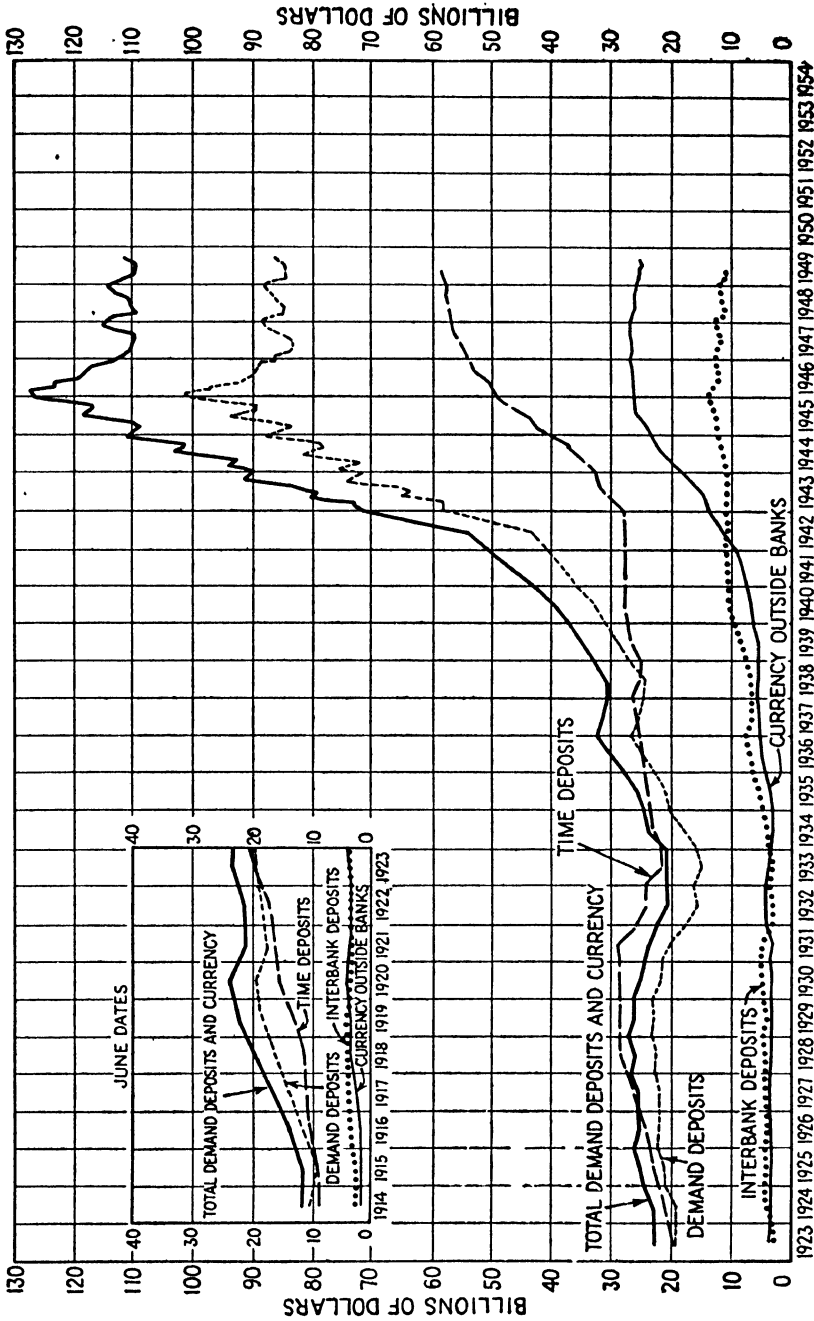
Until the banking crisis accompanying the great depression, time deposits followed an upward trend almost impervious to cyclical fluctuations of business. For example, the time deposits of member banks rose steadily throughout the depression of 1920-1922. But during the period 1931-1933 we learned that our previous assumptions concerning the permanency of such deposits were largely illusory. The breakdown of public confidence in the banks, combined with withdrawals to provide for the unemployed, resulted in a 40 per cent decline in less than two years (see Chart 6).

Relation of Demand Deposits to Currency. Taken together demand deposits and currency constitute the stock of payment money. During the nineteenth century, deposits grew in relation to currency until at the outbreak of the Civil War they were about equal in amount. By 1900, demand deposits were 77 per cent of the money stock, and by 1930 they were 87 per cent. Since 1930, however, the proportion has fallen back to the vicinity of its position in 1900; at midyear 1948 it again stood at 77 per cent. This decline is largely accounted for by the conditions of depression and war which have prevailed. During the depression many people lost confidence in the banks and preferred to hold currency. During the war the increased mobility of the people and the use of currency by the armed forces were important factors. Since 1930, also, there has been a steady rise in bank service charges on deposit accounts, with the result that many families in the lower income brackets have turned to the use of currency.

Generally speaking, demand deposits and currency have shown a high degree of correspondence in their changes, especially in long-term movements. This is to be expected in view of the deep-seated monetary habits of the people. There have been notable exceptions to this rule, however, in the periods 1908-1911, 1922-1928, and 1931-1933. In the first two of these, deposits rose materially while currency remained about the same. The third period was marked by abnormal currency hoarding associated with bank failures.

Finally, it should be observed that the choice of the public in the use of deposit money or currency has an important bearing on the potential limits of bank credit expansion, and hence on the problem of credit control. This is a consequence of the higher legal reserve requirements

CHART 6. DEPOSITS AND CURRENCY IN THE UNITED STATES, 1914-1949



Source: *Banking and Monetary Statistics, 1980-1941*; *Federal Reserve Bulletin, 1942-1949*. Demand deposits include "demand" deposits adjusted and U.S. government deposits. Interbank deposits monthly since June, 1947.

which apply to currency. Discussion of this point is postponed until a later chapter.

The Velocity of Deposits. The velocity or turnover of deposits is the number of times the average dollar is used to pay debts in a given period, say one year. More specifically it is the ratio between total payments by check (debits or withdrawals) and the average amount of deposits during the period.

Large differences in velocity exist among the different types of deposits. In the period 1940–1949, the velocity of demand deposits has ranged between 13 and 20 times per annum. This is abnormally low, however, as indicated by the fact that it averaged about 25 during the 1930's and about 39 during the 1920's. Interbank deposits have the highest velocity—usually between 2 and 4 times higher than that of other demand deposits. At the other extreme, savings deposits turn over very slowly—once or twice on the average per annum.

Wide variations in the velocity of demand deposits also take place under different economic conditions. For example, velocity reached 54 times per annum in the speculative boom of 1929 and dropped to 27 in 1932. It is thus a much more fluctuating and volatile factor than the amount of deposits. In other words, the stock of money is adjusted to the money work to be done in the short run more largely through changes in velocity than through changes in amount. There is also a marked variation in velocity, depending on the nature of the underlying transactions for which the deposits are used. For example, velocity in New York City is typically higher than in other leading cities, and in turn velocity in large cities is higher than in the small cities and towns.

A considerable seasonal variation in the velocity of demand deposits also exists. The peak occurs in January at 15 to 20 per cent above average and the trough of about the same percentage below average is reached in August. Other months show variations but of a more subdued character.

INTERBANK DEPOSITS

Interbank deposits are variously referred to as “bankers’ balances,” “bankers’ deposits,” “due to banks,” and “due from banks.” Whatever their designation they mean simply the deposit accounts of banks with other banks. “Due to banks” refers to the deposit liability of banks while “due from banks” refers to the asset of the banks that *maintain* such deposits. There is necessarily an identity between the aggregates of the two latter items for all banks in the country if foreign balances be excluded.

While strictly speaking the legal reserve balances held by the Federal Reserve banks are interbank deposits, we shall not classify them as such in the present section in view of their peculiar nature. During the 1920's the legal reserves of member banks were a little larger than their balances with domestic banks but during the 1940's they have been between two and three times larger.

For the most part, interbank deposits are utilized only in connection with payments and settlements among the banks themselves. It is for this reason that they are not included as an element of the money stock.

Reasons for Existence. Correspondent banking relationships, of which interbank deposits serve as a rough measure, are one of the distinctive features of a unit banking system. Even during the period of the First Bank of the United States, outlying state-chartered banks maintained deposits with banks in Philadelphia, New York City, and Boston.

At that time such deposits were utilized principally in connection with the sale of domestic and foreign exchange, interbank settlements, and bank-note redemption. As the country developed and the number of banks multiplied, a closely woven network of correspondent bank relationships came into existence for the purpose of transacting the large volume of interbank business. These arrangements were perpetuated and encouraged by the reserve provisions of the National Bank Act, and to a large extent became a substitute, although a poor one, for formal central banking. While they have been considerably modified by the establishment of the Federal Reserve System, they remain today one of the distinguishing marks of the unit banking system of the United States.

The growing importance of New York City as a financial center gradually established it as the principal focal point of the correspondent system. Out of the New York money market thousands of these connecting lines radiate to all other banks in the country, including the smallest banks in remote sections. Connections with the smaller banks outside the New York district, however, are usually indirect, through banks of the other leading cities. For example, a small bank in Las Animas, Colorado, keeps a deposit with a correspondent bank in Denver. In turn, the Denver bank maintains a deposit in New York City as well as in Chicago and at certain other strategic points. Thus, the large city banks and the small country banks naturally occupy antithetical positions in this respect, with the reserve city banks occupying middle ground. To illustrate, at the beginning of 1949 member banks in New York City held domestic interbank deposits of \$2.9 billion but had balances of only \$67 million with other domestic banks. For country

banks, on the other hand, the respective figures were \$943 million and \$3.6 billion.

Under the national banking system, one of the reasons for the maintenance of balances in other banks was the fact that a large part of legal reserves might be kept in such form.¹ The reserve portion, however, represented only between one-third and one-half of the total bankers' balances maintained by national banks, so that there were evidently other important motives operative. State-chartered banks likewise kept, and still keep, a large part of their reserves on deposit with legal reserve agents. But since 1917, member banks have had to keep all legal reserve on deposit at the Reserve banks. This factor, therefore, has now ceased to be operative except in connection with the non-member banks. Of course, even though such balances no longer qualify as legal reserve, they still constitute "working reserve" for the individual bank.

Another reason for bankers' deposits was their use in connection with the clearance and collection of checks and certain noncash items. Various devices were employed, but the prevailing practice was for a city bank to credit and debit the accounts of its correspondents, respectively, with the claims for or against them. Settlements of local clearing-house balances were also frequently made by checks drawn upon city banks. Some notion of the magnitude of this service is indicated by the fact that in 1914 the amount of exchanges at reporting clearing houses was \$164 billion.² We need not repeat here, but should recall that balances for clearing purposes were far larger than necessary owing to exchange charges and the consequent roundabout routing of checks.

But with the creation of efficient clearing and collection arrangements by the Reserve System, this factor, like the first, lost much of its importance. The great bulk of transit items is now handled through the Reserve System. Yet it remains true that a considerable amount of collections is made through correspondent channels. The Reserve banks refuse to handle checks drawn upon nonmember banks that do not remit at par, and many small member banks send transit items to their city correspondents who offer the inducement of immediate credit. Moreover, in many particular cases clearings and collections can still be handled more expeditiously through correspondent accounts.

A third and closely allied use made of bankers' balances was to furnish bank customers with domestic and foreign exchange. Before the personal check became so generally used, drafts upon banks in New York City, Chicago, or some other leading city were employed for distant

¹ Country banks, 60 per cent; reserve city banks, 50 per cent.

² *Annual Report of the Comptroller of the Currency*, 1935, p. 800.

domestic payments. Such drafts could be provided only by keeping deposits with city banks. Moreover, interior banks were obliged to maintain balances in New York in order to furnish their customers satisfactory foreign exchange services. The New York banks could then debit and credit their accounts, respectively, with foreign exchange sold and purchased by correspondent banks. While the use of bank drafts for domestic payments has declined relatively and is therefore of less significance, bankers' deposits continue to be used today for foreign exchange purposes much as they were before the Federal Reserve System.

Still a further purpose of bankers' deposits was that of entitling interior banks to borrow funds from their city correspondents. In general, a bank, like a business firm, was granted a line of credit amounting to about five times its average balance. Such loans were made, however, only upon a secured basis. Under the old system, most interior banks made it a point to keep their borrowing lines open, since the city banks were their only means of meeting demands beyond their own resources. But in a period of general emergency, such as 1907, they were doomed to disappointment, since it then became impossible to withdraw even their balances, let alone to borrow from city banks.

Although the rediscount powers of the Reserve banks have greatly diminished this motive, it is still operative to some extent. Nonmember banks continue to depend upon correspondents for loans, and at times a considerable amount of borrowing from correspondents is done by member banks. The latter occurs more largely among the country banks and particularly in the Southern states. It is accounted for principally by a lack of eligible or acceptable paper but also in some degree by more liberal terms with respect to maturities and customer statements. Occasionally, also, in periods of monetary ease, interbank loan rates fall below the rediscount rates of the Reserve banks of certain districts. This, however, is exceptional. Now that the Reserve banks are permitted to loan upon the basis of any acceptable assets,¹ it would appear that the greatest reason for correspondent borrowing by members has been removed—provided of course that the Reserve banks see fit to make such advances.

A sixth factor of great importance was the fact that city banks paid interest upon bankers' balances, usually in the vicinity of 2 per cent but sometimes as much as 4 per cent. They were thus a form of liquid investment competing with call loans and other short-term obligations. This inducement led country banks and reserve city banks to keep legal reserves in the form of bankers' balances, as well as any surplus funds

¹ Banking Act of 1935.

that came into their possession. Later, under the Reserve System it likewise led member banks to keep balances at the Reserve banks and vault cash at a minimum since neither of these yielded a return.

The Banking Act of 1933, however, prohibited the payment of interest upon demand deposits, including interbank accounts. With this inducement removed there should be a substantial decline in interbank deposits whenever the Reserve banks take steps to reduce the volume of excess reserves.

A final inducement for the maintenance of bankers' deposits was, and continues to be, the variety of services that city banks perform for their correspondents. The most important of these relate to loans and investments. The vast store of credit information of New York City banks is available as an aid both in making customer loans and in buying commercial paper. In fact, New York banks stand ready to act as agents for interior banks in the purchase of acceptances or commercial paper, the placement of call loans, and the purchase or sale of investment securities. In addition, their security-analysis division provides advice respecting both particular securities and general investment policy.

Many interior banks also make use of the custodian services offered by the New York banks. These include the safekeeping of bonds, the collection of interest coupons, and the purchase and sale of securities upon order. In this way, the interior banks are in position to arrange for loans on short notice with a minimum of red tape, and also to convert securities into reserves more quickly than would otherwise be possible. Other services facetiously mentioned by an officer of a large New York City bank range all the way from buying World's Series tickets to arranging for the shipment of a corpse from Rome.

Movements of Interbank Deposits. Bankers' balances have not, as many expected, been virtually destroyed by the Federal Reserve System. In fact, their absolute amount has increased substantially since 1914. They have, however, undergone a relative decline. That is, they have increased less rapidly than total deposits or total loans and investments. In 1915 they constituted 26 per cent of total member bank deposits while by 1920 the ratio fell to 13 per cent. At the end of May, 1948, it stood at 9 per cent. The downward trend is explainable mainly on the basis of the prohibition of interest payments on demand deposits combined with the extension of services performed by the Federal Reserve System.

The cyclical fluctuations of bankers' balances held by New York City banks are fairly wide. So many diverse influences, however, are constantly affecting their amount that a generalized explanation is likely to be misleading. A different combination of factors gives each change a

peculiar character, necessitating independent analysis. Bearing this in mind, the main facts with respect to their behavior should be mentioned.

It is ordinarily true that such balances increase during periods of business depression when local credit demands of interior banks subside, and decrease for the opposite reason during boom periods. They also tend to move inversely with short-term money rates and with brokers' loans of out-of-town banks. When the rates are rising, interior banks draw down their bankers' deposits and place the funds in the open money market. On the other hand, when rates decline, bankers' deposits usually increase along with other cash reserves.

Finally, bankers' deposits show a materially higher rate of turnover than do other demand deposits. While great variation exists, the velocity of the former in the larger centers is usually between two and four times as high. This would be expected in view of the huge volume of inter-bank transactions cleared and settled through them.

DEPOSIT INSURANCE

The Federal system of deposit insurance was a direct consequence of the wave of bank failures that culminated in the complete collapse of the banks in 1933. In the four years 1930-1933 nearly one-third of the country's banks, with deposits exceeding \$6 billion, passed out of existence. The effect was to cause untold hardship upon individuals, to prostrate the business of entire communities deprived of banking facilities, and to intensify the severe deflationary cycle. It is not surprising, therefore, that an attempt was made both to diminish and to spread the risks of loss from this source.

State Experiments. This was not, however, the first experiment with deposit insurance in the United States. Several states established programs of their own in the past, although for one reason or another all ended in failure. The forerunner of the more recent plans was the safety-fund system established in the State of New York in 1829. After a series of bank failures in the years 1840-1842, which piled up losses greatly exceeding the fund, the law was amended so as to apply only to bank notes.

While there was much agitation for deposit insurance in several Middle Western states after the panic of 1893, no state system was actually established until the resurgence of bank suspensions in 1907. Following the lead of Oklahoma, eight states passed such laws: Oklahoma (1907), Kansas (1909), Nebraska (1909), Texas (1909), Mississippi (1914), South Dakota (1915), North Dakota (1917), and Washington

(1917). One by one these systems broke down until by 1929 all were abandoned.

No other result, however, could reasonably have been expected in view of the numerous weaknesses common to all of them. There was an inadequate spreading of risk since most of the states were in one-crop farm areas. There was also a poor selection of risks because all state-chartered banks were included and national banks, usually larger and stronger, were not permitted to join. Furthermore, lax supervision winked at speculative and unsound operations that were bound to end disastrously. Add to all this the fact that no one of them was adequately financed, and there is no reason for surprise at their short-lived existence.

Federal Deposit Insurance. The first program of deposit insurance on a nation-wide basis was incorporated in the Banking Act of 1933. However, owing to the fact that a general revision of the section (12B) was made by the Banking Act of 1935, we shall be mainly concerned with the later and more permanent form. Between January 1, 1934, and August 23, 1935, a temporary insurance plan provided in the earlier act was in force. It applied to all member banks of the Reserve System and to such nonmember banks as made application and were admitted to the system. All banks insured under the temporary plan were automatically admitted to insurance under the permanent plan.

Organization of the Federal Deposit Insurance Corporation. The Act creates the Federal Deposit Insurance Corporation (FDIC) under the management of a board of three directors. Two of these, including the chairman, are appointed by the President for a six-year term. The Comptroller of the Currency serves, ex officio, as the third member.

The resources of the Corporation are derived from three sources: capital-stock subscription, earnings on investments, and assessments levied on insured banks. All the stock, which is nonvoting and pays no dividend, was subscribed by the United States government and the Federal Reserve banks. The subscription of the former was \$150 million and of the latter \$139 million, thus providing initial capital of \$289 million. During the last half of 1947 the Corporation began a capital-stock retirement program as provided by an Act of Congress approved August 5, 1947. The Corporation was authorized to pay the U.S. Treasury for both classes of stock. At the end of 1947 the stock held by the Reserve banks had been retired and \$67 million of that held by the Treasury. This left the Corporation with capital and surplus of \$1,006 million. Annual assessments of insured banks are $\frac{1}{12}$ of 1 per cent of their total deposits, which in 1947 amounted to \$114 million.

This was augmented by \$43 million of income from investments. In addition, the Corporation is authorized to borrow up to three times the capital stock plus the assessment made during 1936. This amounts to about \$975 million so that the total potential fund available to the Corporation was about \$2 billion. Total assets, consisting mostly of United States securities and cash, amounted to \$1,031 million at the end of 1947.

The maximum amount of insurance for each deposit account is fixed at \$5,000. This affords full coverage for about 95 per cent of the number of demand deposit accounts and 98 per cent of savings and time accounts and partial protection for the rest. However, only 39 per cent of the amount of demand deposits and 89 per cent of savings and time deposits are covered.

All members of the Reserve System are required to participate, and nonmember banks are permitted to do so, provided they are able to meet specified standards. Factors that the directors must consider in passing upon admissions are (1) the financial history and condition of the bank, (2) the adequacy of capital, (3) the prospects for earnings, (4) the character of management, (5) the need for banking facilities in the community, and (6) whether the corporate powers of the bank are consistent with the purposes of the insurance law. At the end of 1948 there were 13,413 insured commercial banks in the United States with total deposits of \$141 billion. These banks held 98.5 per cent of all commercial bank deposits. Noninsured commercial banks, most of which are small and many of which fail to meet admission standards, numbered 758. In addition, 193 mutual savings banks with deposits of \$12.8 billion have also elected to join.

A nonmember bank may, upon 90 days' notice, withdraw from Federal insurance, but its assessments continue and its depositors remain insured for a further period of 2 years. The Corporation is also empowered after due notice and a hearing to terminate the insured status of any bank that violates the law or engages in unsound practices.

Methods of Protecting Depositors. Two principal procedures have been employed by the Corporation in protecting depositors: (1) the prompt payment of depositors' claims in the event of receivership, and (2) advances and purchases of assets to facilitate mergers of insolvent insured banks with other banks.

In the event of receivership the Corporation becomes the receiver if the failed institution is a national bank, and it may serve in that capacity for state-chartered banks in most of the states. In practice, it has acted as receiver for about one-fourth of the state banks which

have failed. Payment of the insured deposits is begun as soon as the amount of each depositor's claim can be determined. This is usually within a week or ten days. In the liquidation that follows the Corporation holds the same legal claim against the assets as owners of uninsured deposits and shares the proceeds proportionately with them. It stands to lose the difference between total deposit claims and the sum of its full liability on insured deposits and its proportionate liability on uninsured deposits. In addition, it shares the expenses of liquidation with the uninsured depositors. During the period 1934-1947, three-fifths of the number of banks which received financial aid from the Corporation were placed in receivership, and the other two-fifths were assisted by loans and purchases of assets in effecting mergers. However, the amount of insured deposits paid in receiverships was only one-third of total disbursements while loans and purchases of assets represented two-thirds.

Loans and purchases of assets to facilitate mergers were authorized by the Banking Act of 1935, although such advances may be used only when they will reduce the risk or avert a threatened loss to the Corporation. Under the procedure followed since 1941, assets have been purchased from failed banks at a tentative initial price. Then after liquidation a final instalment is paid if the liquidation yields a surplus over the amount of the advance, expenses, and a return of 4 per cent on the initial advance. This second method has proved to be more desirable than that of receivership. The Corporation can act more promptly and is often able to minimize its own losses. Also, the disruption of the economic life of individuals and the community that may arise from a receivership is avoided.

The Corporation also possesses several other powers which enable it to minimize losses to itself and to depositors. It may refuse to insure those banks that do not measure up to required standards for loans, investments, and other operations. It may terminate the insured status of banks that engage in unsound practices or violate the law. It may require insured banks to provide adequate protection against burglary, defalcation, and other similar insurable risks. It may limit the percentage of interest to be paid on time and savings deposits. Finally, it may withhold approval of the merger of an insured bank with an uninsured bank, and of the reduction of capital or the establishment of a new branch by an insured bank that is not a member of the Federal Reserve System. These powers, if diligently and wisely exercised, should enable the Corporation to reduce materially the losses sustained from bank failures.

Objections and Advantages. The two principal objections to Federal insurance of deposits as it now stands are (1) that any such system tends to undermine sound and conservative bank management, and therefore contains the seeds for its own destruction and (2) that the assessment basis is grossly unfair to the large city banks. There is an element of truth in the first charge, although it is often exaggerated by opponents of insurance. Since depositors become less concerned about the safety of particular banks, the conservative banker is more likely to lose deposits to competitors who offer more liberal credit terms, pay a higher rate of interest on time deposits, and make available a wider range of free services. This tendency must be recognized and safeguarded in any successful insurance program. But the claim that bankers will become speculative because they no longer need to worry about the safety of depositors has no real foundation. Bankers are most vitally interested in the welfare of their stockholders whose investment is at stake with or without insurance. Moreover, the professionally minded banker should still be concerned about the 60 per cent of demand deposits to which insurance does not apply.

On first view the charge that the large banks are inequitably burdened with the costs of the program appears to be plausible. They are assessed on the basis of total deposits while only a small part of their deposits actually enjoys the benefit of insurance. The deposits of small banks, on the other hand, are completely or largely covered with the \$5,000 maximum limit. Fairness would therefore seem to require that the basis for assessments be *insured* deposits rather than *total* deposits. But the answer is that the prohibition of interest upon demand deposits was provided in large part for the definite purpose of carrying the cost of insurance. This saving to the banks amounts to several times the annual assessment. In the large city banks expenses are lightened even more in proportion to assessments than in the smaller banks. In the year ended June 30, 1930, for example, New York City national banks paid interest on demand deposits of more than \$48 million. Their annual assessment for insurance in that year would have been only about one-sixteenth of that amount. There seems, therefore, little basis for complaint on this score by the large banks. As a practical matter a program of mutual insurance could not be properly financed upon the narrower assessment basis of *insured* deposits.

Several advantages should be realized from the system, if we may assume a high caliber of administration. First, it should raise public confidence in the banks. Knowing that depositors are less subject to scares and panic, bankers should be in better position to perform their

normal functions in the community. Unquestionably the Corporation has already contributed materially to the rebuilding of confidence so badly shattered in 1933. Second, the system provides protection for the small depositor who is least able to judge the soundness of a bank, or to withstand the loss from a failure. Third, the powers of the Corporation should enable it to reduce bank suspensions by more thorough and more courageous supervision. It furnishes a more effective means than previously existed of coordinating and raising the standards of the 50 separate supervising agencies in the country. This, together with its own direct regulatory efforts should bring about improved standards of banking practice. Last, the system makes possible the prompt payment of depositors of closed banks so that a failure causes less disruption of the affairs of the whole community as well as of the depositors themselves. This applies not only to insured deposits but also to uninsured accounts through loans upon closed-bank assets.

The Record of the Federal Deposit Insurance Corporation. While the Federal Deposit Insurance system was, like all reform measures, viewed skeptically for several years, it is now almost universally regarded as a highly constructive improvement in the banking system. Its record to date is one of outstanding achievement. In the first 14 years of its existence 404 banks with deposits of \$512 million and with 1,323,977 depositors were liquidated or merged. Nearly 98 per cent of these deposits were promptly made available without loss to depositors. Only $\frac{1}{8}$ per cent of the depositors suffered a loss, owing to the fact that their accounts exceeded the \$5,000 maximum of insurance. In addition, there have been fewer bank suspensions than in any previous period of similar length in the banking history of the United States. In fact, there were more suspensions in every year of the period 1920–1933 than during the entire period of existence of the Corporation. It is necessary to point out, however, that the system has not yet experienced a severe test. In view of the closing of some 4,000 weak banks in 1933, few suspensions would have been expected for a number of years. Also, since 1940 the economy has been stimulated by a war and postwar boom during which business failures have been at a minimum. Nevertheless, the positive and preventive measures undertaken by the Corporation have made a distinct contribution to the health of the banking system.

Not only has the Corporation minimized risks to depositors and met its insurance obligations, but it has also grown rapidly in strength. Between 1934 and the end of 1947 capital funds increased about $3\frac{1}{2}$ times—from \$289 million to \$1,006 million. Moreover, this is after meeting \$78 million of expenses to cover insurance losses, administrative costs, and other charges, and after retiring \$206 million of its capital stock.

In view of the marked growth in resources of the Corporation some agitation for a reduction in the annual assessment of $\frac{1}{12}$ per cent of deposits has arisen since the war. On first view a reduction may seem plausible, but further analysis reveals its unwisdom for several years to come. The Corporation's rapid growth has been more than matched by the expansion of total deposits of insured banks. At the end of 1934 the ratio of capital funds of the FDIC to deposits of insured banks was 0.73 per cent; at the end of 1947 it was 0.65 per cent. On the reasonable assumption that the Corporation must face more severe tests in the future, it seems clear that its position should be strengthened rather than weakened. At a time of financial difficulties $6\frac{1}{2}$ mills do not go very far in validating \$1! A better perspective on this question can be preserved by recalling the fact that during the 70-year period, 1865-1934, the average annual loss to depositors within the \$5,000 maximum limit was about $\frac{1}{4}$ per cent of total deposits in commercial banks.

The Basis of Safe Deposits. There is some danger in a discussion of deposit insurance as such of giving a false impression with regard to the basic factors that govern the safety of deposits. These factors may all be summarized under the one heading, healthy economic conditions, which also implies sound financial conditions. The financial structure is the dollar counterpart of the real economic structure; the former cannot long stand if the foundation on which it rests crumbles. A high level of production, relatively stable employment, economic progress, and a fair distribution of income are the stones, bricks, and mortar of this foundation. It can be built and maintained only by wise government policies in relation to business, the intelligent cooperation of management and labor, and peaceful, cooperative international relations.

The financial system is of course an essential element of the economic system, so that economic objectives can be realized only if it effectively performs its functions. This depends in turn on the existence of a workable financial organization, enlightened government policies and administration in this sphere, and sound management of banks and other financial enterprises. More specifically with respect to bank deposits, safety basically depends on the quality of bank management. Adequate capital funds are essential, which implies efficient administration leading to earning power and a stockholder group that is satisfied with a reasonable return. Another essential is the maintenance of sufficient liquidity in the assets. Still another of great importance is the observance of a proper standard of quality in the making of loans and the purchase of investments. A final one is protective in nature, *viz.*, the installation of proper internal controls to reduce the risks of defalcation and the

purchase of sufficient fidelity insurance to cover any probable loss from this source.

One of the least favorable aspects of the position of insured commercial banks at present is the inadequacy of capital funds. At the end of 1948 the ratio of capital funds to total assets was 6.7 per cent compared with 13.2 per cent at the end of 1934. The comparison is somewhat less unfavorable on the basis of risk assets (total assets less cash assets and United States securities)—26.2 per cent and 19.3 per cent, respectively. This declining trend which has been underway since the turn of the century is a matter of concern in connection with the safety of deposits. Capital funds should be enlarged both by the retention of net profit and the sale of additional common stock.

In summary, Federal deposit insurance is a constructive contribution to the safety of bank deposits. Its success rests basically, however, on the general state of economic and financial health. Without the support of these it is indeed a slender reed in its present form.¹

Review Questions

1. How significant is deposit money in the monetary system?
2. State the legal definitions of the various types of deposits.
3. Comment on the distribution of demand deposits between individuals, businesses, and others.
4. Summarize the main facts brought out by the distribution of deposits by size of account as given in Table 14.
5. Explain the origin of demand deposits (a) in the banking system as a whole and (b) in the individual bank.
6. Differentiate between the individual commercial bank and the banking system as a whole with regard to primary and derivative deposits.
7. Account for the rapid increase of demand deposits during the period 1914-1949.
8. Why have time deposits grown more rapidly in commercial banks than in mutual savings banks?
9. Indicate the relationship between general economic activity and demand deposits.
10. Discuss the relation of demand deposits to currency in the United States.
11. Outline the reasons for the continued use of interbank deposits after establishment of the Federal Reserve System.
12. What factors usually account for the cyclical variations that take place in interbank deposits?
13. Summarize the historical background leading to a Federal program of deposit insurance.
14. Outline the organization of the Federal Deposit Insurance Corporation, including membership and deposit coverage.

¹ Most of the statistical information included in this section has been drawn from the annual and other reports of the FDIC.

15. Describe the methods by which the FDIC protects depositors.
16. Discuss the advantages of the FDIC to individuals, communities and the country as a whole. What are the objections to it?
17. Appraise the record of the FDIC during the first 14 years of its existence.
18. Summarize the basic factors that govern the safety of bank deposits.

Advanced Questions and Problems

1. How does the velocity of deposits vary by types of deposits, and during the different stages of the business cycle? Explain.
2. Discuss the relation of the velocity of deposits to the general price level.
3. Summarize and appraise the record of the FDIC since 1947. (SOURCE: *Annual Reports of the FDIC*.)
4. In 1949 many of the large city banks urged Congress to reduce the annual FDIC assessment by one-half. What arguments can be advanced for this proposal? Do you agree?
5. In 1949 many small banks urged Congress to raise the maximum limit of deposit insurance from \$5,000 to \$10,000 without change of the annual FDIC assessment. What arguments can be advanced for this proposal? Do you agree?

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CHAPTER XIV

CLEARINGS, COLLECTIONS, AND TRANSFERS

One of the major technical aims of a banking system is to provide the largest possible cancellation of money claims so that the expense of physical transfer of gold or other legal-tender money in settlement of balances may be kept at a minimum. In fact, the degree to which credit offsets occur constitutes a good index of a banking system's technical efficiency. The first step in the cancellation of claims is among customers of the same bank. If Jones, a merchant, gives Brown, a coaldealer, a check for \$500 on their common local bank in payment for his supply of coal, the bank simply deducts the amount from Jones's account and adds it to the account of Brown. No currency changes hands.

The second cancellation step occurs among the several banks of a community through the exchange and offset of checks at the local clearing house. Only a small balance remains to be paid by a shift of bank reserves after the clearing. A third phase of the offsetting process arises in connection with checks sent to make payments at distant points. By an ingenious arrangement to be described presently, the Federal Reserve System has succeeded in extending the effective clearing area to embrace the entire country. The final step is effected in the foreign exchange market by the great international bankers. Through their intermediation the counterclaims of all commercial nations are largely canceled. Thus, in a very real sense the nation's business and the world's trade are financed by credit media without the physical transfer of ultimate reserves.

THE CLEARING HOUSE

A clearing house may be defined as an association of banks to facilitate the exchange, offset, and settlement of credit claims among them and to serve their mutual interests in other respects. Thus, while the clearing of checks and other credit claims is the primary function of a clearing house, it also performs a variety of trade association activities. Edinburgh, Scotland, is usually credited with the first clearing house, established in 1760. The London Clearing House soon followed in 1773. The New York Clearing House was founded in 1853.

The Clearing Process. Each day the banks of a city send the checks and other cash claims payable at one of the other local banks to the clearing house. For the most part these items consist of checks received on deposit or cashed on the previous day. The actual clearing usually occurs about 10 A.M. but the physical exchange of checks is often made earlier and at more frequent intervals in order to speed up the accounting process of the drawee banks. At the conclusion of clearing, the proof clerk of the clearing house prepares a proof of the day's operation similar to that shown in Table 15. The total amount of items presented against member banks (debits) necessarily equals the total amount of items brought by member banks (credits), since the same total is simply

TABLE 15. CLEARING-HOUSE PROOF SHEET
(*In thousands of dollars*)

Bank number	Items pre- sented against given bank (debits)	Items brought by given bank (credits)	Debit balances due clearing house	Credit balances due member banks
1	500	400	100	
2	350	400	.....	50
3	725	800	.....	75
4	630	570	60	
5	415	380	35	
6	900	970	.....	70
Total	3,520	3,520	195	195

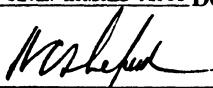
broken down into debits and credits from the point of view of the clearing house. Likewise, the total of debit balances due the clearing house by member banks has to equal the total of credit balances due member banks by the clearing house.

The size of balances in relation to clearings varies considerably from day to day and among different clearing houses. In general, the situation which makes for a small balance is a large number of equal-sized banks, each with a large number of depositors whose accounts do not vary greatly in size. On the other hand, when the size of banks and of deposit accounts varies widely and the numbers are small, the cancellation process is less complete. In the period 1854-1913, the ratio of balances to clearings in the New York Clearing House was only 4.65 per cent. But since the admission of the Reserve Bank of New York to membership, the balance has greatly increased. This is because the Reserve bank presents out-of-town items against the

New York banks at the clearing house but receives their out-of-town collection items directly in its collection department. Another factor tending to enlarge the ratio is the consolidations of recent years. In the last few years the ratio of balances has varied between 10 and 16 per cent.

Since the inception of the Federal Reserve System, many of the clearing-house associations use the Federal Reserve banks for paying balances. The manager of the New York Clearing House sends a statement to the Federal Reserve Bank of New York, which in turn credits the accounts of the creditor banks and debits the accounts of the debtor banks. In cities where there is a Reserve bank branch, the settling

SPECIMEN CHECK

CASHIER'S CHECK	No. BD27996	NEW YORK, N. Y.	March 10,	19 <u>48</u>	1
	THE NATIONAL CITY BANK OF NEW YORK				1-8 210
	55 WALL STREET				
	PAY TO THE ORDER OF * STATE OF NEW YORK * \$300,138,750.00* & NO/100 *				
	*THREE HUNDRED MILLION ONE HUNDRED THIRTY-EIGHT THOUSAND SEVEN HUNDRED FIFTY DOLLARS				
		 President			

of balances is done through it. In certain other cities settlement is made through the Reserve bank, even though it is located at some distance. In such instances the manager of the clearing house advises the regional banks by telegraph of the debits and credits, and the proper book entries are then made. In the smaller cities, settlement is frequently made by drafts drawn on city correspondent banks. Another method in use is for the manager of the clearing house to draw a check on each debtor bank payable to the creditor banks. These checks are then collected at the Reserve bank and converted into legal reserves. Settlement could of course be made with legal-tender currency but this method is too expensive to be practical. For illustration, the daily settlement balance of the New York Clearing House frequently exceeds \$200 million. Delivery of this sum in currency would obviously require a large fleet of well-manned armored cars.

The magnitude and the great economy of the clearing process are vividly emphasized by the accompanying photostatic copy of a check

for \$300,138,750.00 which was cleared through the New York Clearing House as a matter of routine, and with no more fuss than if it had been a check for 10-cents, such as students have been known to give for candy bars.

In addition to checks, clearing houses are utilized to clear other matured credit claims such as acceptances, promissory notes, and bond coupons.

It is well to recall at this point the accounting aspects of bank clearing. When Bank A takes \$100,000 of checks drawn on other local clearing banks to the clearing house and is presented with \$110,000 of items drawn on itself, the change in its statement would be as follows:

Assets	Liabilities
Exchanges for clearing — \$100,000	Demand deposits of individuals
Reserve balance — 10,000	and business firms — \$90,000
	U.S. government deposits — 1,000
	State and municipal deposits — 7,000
	Due to banks — 10,000
	Certified and officers' checks — 2,000

Bank A suffered an unfavorable balance at the clearing house and made settlement by drawing on its reserve balance. The claims of other banks included a variety of debits to deposits as indicated. If the claims presented against Bank A had amounted to \$90,000 instead of \$110,000, then A would have enjoyed a favorable balance of \$10,000, and its Reserve balance would have increased accordingly.

Trade Association Activities. Proper performance of the banking function necessarily involves greater interdependence and more numerous contacts among establishments than in other types of business. This is particularly true of the several banks of one city. As a consequence a number of services and activities furthering the mutual interests of the banks have been performed by the clearing house in addition to its primary function of clearings. These trade association activities may be conveniently considered under the headings: examinations, mutual action in case of a bank failure, issue of loan certificates, and the regulation of banking competition.

Many clearing-house associations maintain a staff of expert examiners who audit the condition of members. This examination is supplementary to that of the state or national bank examiners. It is of much the same nature although usually more searching and thorough.

One clearing house requires that a written report of every bank found unsafe be sent to each of the directors of the bank and to the president. The president is then obliged to call a special meeting of the board

to consider this report. No other business is transacted at this special meeting. Such a procedure centers attention upon the condition of the bank and makes the directors realize their responsibility.

In addition clearing-house examinations reveal the total loans made by all banks in the city to a particular borrower. They also uncover false statements of condition of customers as well as banking irregularities and unsound policies. Thus, they are often a means of forestalling substantial losses on loans.

If, in spite of the preventive influence of examinations, a bank failure occurs, the association provides an organization through which concerted action may be taken in handling the situation. In a large number of instances the associated banks have prevented loss to depositors by standing behind the liabilities of the failed institution. A good illustration of such action occurred in Detroit in March, 1931, when the American State Bank failed. Moving without delay, the Detroit Clearing House banks guaranteed the deposits of \$40 million. Each member agreed to participate in the losses sustained in the proportion of its invested capital.

With the establishment of Federal deposit insurance, clearing houses are now relieved of a large share of their former responsibility in the event of a local bank failure. However, it is possible that they may still find a field for mutual action with respect to the uninsured portion of deposits.

Although no longer of much significance since the Federal Reserve System, the chief emergency function of clearing houses in the old days was that of conserving and equalizing reserves by the issue of loan certificates. These certificates were advanced to members upon the basis of pledged assets and were acceptable in settlement of debit balances. They were issued to ease the pressure on reserves in every panic between 1873 and 1914. Clearing-house certificates in small denominations were also issued into circulation during severe panics in order to relieve the shortage of currency.

Clearing houses also constitute agencies through which banking competition is regulated in various ways. Before the Banking Act of 1933, the most important activity of this kind was that of fixing a schedule of interest rates to be paid upon the different classes of deposits. All such regulation, however, is now in the hands of the Board of Governors and the Federal Deposit Insurance Corporation. Uniform charges are usually enforced for safe-deposit services, collections, foreign exchange, bank drafts, and a few other less important services. In recent years there has also been a growing movement to adopt a uniform system of

service charges on deposit accounts. Other regulations that are often enforced upon members are concerned with the following: (1) frequent detailed statements of condition; (2) the delivery of payrolls; (3) the receipt of deposits away from the premises of the bank; (4) banking hours and holidays; and (5) the handling of checks on nonpar banks.

Like trade associations in general, clearing houses raise important problems of public policy. That is, in addition to their useful and beneficial services there is a real danger that they may become the instruments of banking monopoly. A more effective system of government regulation than now exists is needed to safeguard the public against excessive charges for banking services.

Bank Clearing Statistics. Another service of clearing houses is that of furnishing a record of the amount of clearings in leading cities of the country. These figures are available in Standard & Poor's Corporation Statistics Section, and they have over the years been widely employed as an index of business conditions. Certain limitations on their usefulness for this purpose should, however, be pointed out. First, they may be strongly influenced by speculative security, commodity, or real estate transactions. In fact, clearings in New York City reflect such transactions to such an extent that they are usually deducted from total clearings when a business index is desired. Second, clearings reflect price changes as well as changes in the physical volume of business. If one is interested in the latter, therefore, it is often necessary to make an adjustment for price changes. Third, since clearings reflect actual check payments, they lag behind wholesale purchases on credit by the average length of the credit period. Fourth, the sample of business transactions afforded by clearings represents only the cities. Last, they do not include the considerable number of checks that represent payments among depositors of the same bank. In a period of numerous mergers, clearing statistics may for this reason become very misleading.

Since debits to individual deposit accounts are free from this last limitation and are available for a wider group of banks, they represent a better business index than clearings. The Board of Governors of the Federal Reserve System releases every week the amount of debits for each of 141 leading cities of the country, provides monthly data for 192 reporting centers, and makes annual estimates for all banks in the country.

FEDERAL RESERVE SYSTEM OF CLEARINGS AND COLLECTIONS

One of the leading responsibilities of a central bank, as we have seen, is that of providing an efficient system for the cancellation of interbank

claims. It is not enough to have local clearing houses. There are needed, in addition, arrangements for handling and offsetting the vast volume of checks sent to make payments at distant points. The Reserve System early assumed the responsibility and in 1916 established a collection system that represented a great improvement over the old makeshift correspondent facilities.

Within each district the Reserve bank and its branches serve as clearing centers for the member banks. Since each member has a reserve balance, it is a simple matter for the Reserve bank to credit and debit member banks' accounts with the claims for and against them. Then through the Interdistrict Settlement Fund maintained by the Reserve banks with the Board in Washington, the process is extended to the entire country.

Collections are made by the Reserve banks free of charge for member banks and for those nonmembers that maintain an adequate balance with them for the purpose. The system is not all-inclusive, however, since the Reserve banks refuse to receive items drawn on "nonpar banks," *i.e.*, on banks that do not pay the face value of their customers' checks returning for collection through the mail. At the beginning of 1948, the nonpar list included 2,041 small banks that persist in the practice of deducting an *exchange charge* of between 0.1 and 0.25 per cent. Their checks, which fortunately represent only about 2 per cent of the total, must be collected outside the Federal Reserve System through correspondent banks. On the same date the par list included 12,037 banks.¹

Some idea of the size of the collection task performed by the Reserve banks is given by the fact that 2 billion checks amounting to \$792 billion were handled during 1947.²

Intradistrict Check Collection. In order to illustrate intradistrict collection, assume that a check for \$100 is deposited by Cedric Jones, a wholesale grocer in Springfield, Massachusetts, to his account in the Union Trust Company. The check is drawn on the Canal National Bank of Portland, Maine, by George Rounds, a retail grocer in Portland. The Union Trust sends the check along with all its other transit items to the Federal Reserve Bank of Boston which in turn sends it on to the Canal National where the account of Rounds is reduced \$100. The Federal Reserve Bank shifts \$100 from the reserve balance of the Canal National to that of the Union Trust. The latter knows from

¹ *Annual Report of the Board of Governors of the Federal Reserve System*, 1947, p. 38.

² *Ibid.*, p. 69.

a collection time schedule which all member banks possess that it will receive credit to its reserve account on the next day after sending the check.

The Reserve banks also make noncash collections—promissory notes, drafts, bills of exchange, and bond coupons—for member banks without charge. This is done on both an intradistrict and an interdistrict basis.

Interdistrict Check Collection. By changing the preceding example slightly the interdistrict collection process may likewise be made more concrete. Assume that George Rounds and his bank are located in Portland, Oregon, instead of in Maine. In that event the Union Trust Company of Springfield sends the check to the Federal Reserve Bank of Boston in the package of items on which reserve credit will be received in three days according to the time schedule. Upon receipt the Boston Reserve Bank sends it to the Portland Branch of the Federal Reserve Bank of San Francisco, along with all other available checks drawn on banks of the Portland district. The Portland Branch forwards the check to the Canal National and charges its reserve balance \$100. The Canal National then charges Rounds's account by that amount.

It still remains, however, to make settlement between the Federal Reserve Banks of Boston and San Francisco. This is done through the Interdistrict Settlement Fund under supervision of the Board of Governors in Washington, D.C. On the day that settlement for the \$100 check is required by the time schedule, the Portland Branch wires the Fund the total amount it owes each of the other eleven Federal Reserve banks at the close of the day. All the other Reserve banks and branches do likewise, so that the manager of the Fund is able to prepare a settlement sheet for the day. Shifts of ownership in the Fund take place every day as some Reserve banks gain and others lose reserves. The \$100 check had the effect of shifting legal reserve from the Federal Reserve Bank of San Francisco to the Federal Reserve Bank of Boston, although it was only a minor item in the day's settlement as a whole. The Interdistrict Settlement Fund consists of gold-certificate reserves held by the Treasury for the Federal Reserve banks. At the beginning of 1948 it amounted to \$7.1 billion.

With the gradual perfection of the system, numerous special arrangements have been devised in order to shorten the time and expense of collection. Large member banks often send checks directly to Reserve banks in other districts and at the same time notify their own Reserve bank of the transaction. In this manner indirect routing and an extra handling of the items are avoided so that reserve credit may be received a day or so earlier. The extension of county clearing arrangements

has also been encouraged in order that banks of the same county and vicinity may exchange checks directly. Settlement of balances is made by debits and credits on the books of the Reserve bank. Another practice sponsored jointly by the Federal Reserve System and the American Bankers Association is the use of a uniform check-routing symbol. Placed in the upper right-hand corner of checks, it speeds up the sorting of transit items and also makes for greater accuracy.

The collection of checks gives rise to two items on the balance sheet of a Federal Reserve bank, *viz.*, the asset Uncollected Items, and the liability Deferred Availability Items. The former represents the claims of the Reserve bank against commercial and Reserve banks for the checks which it has taken for collection but for which it has not yet received payment. The latter is the liability of the Reserve bank to commercial and Reserve banks that have sent items for collection for which settlement has not yet been made. Uncollected items usually exceed deferred availability items since according to the time schedule the Reserve banks give reserve credit to sending banks on the average before they have actually made collections. This has been all the more true since the recent reduction of the maximum deferred credit period on items payable in the United States to three days. On May 25, 1949, Uncollected Items amounted to \$2,313 million and Deferred Availability Items to \$2,128 million.

The Federal Reserve collection system has reached a high point of efficiency in contrast with the wasteful methods which existed before its establishment in 1915. It was then common practice for banks to deduct an exchange charge when checks drawn on them were presented for collection by mail. Out of this situation a network of reciprocal agreements developed whereby certain banks would agree not to deduct exchange on checks drawn on them or in their area. This in turn led to the circuitous routing of checks with the result that the collection period was unduly long and the amount of the float (uncollected checks) was excessive. The Reserve collection system has very materially reduced the amount of float in relation to the amount of check collections.

The Wire-transfer System. By the use of the leased wire system, which connects the Board of Governors, the U.S. Treasury, and all the Federal Reserve banks and branches, large transfers of reserve money are made every day by the Reserve banks themselves, member banks all over the country, and the Treasury. The bulk of transfers arises from check collection, but transfers for the Treasury have been large during and since the war and sizable transfers take place in clearing

Federal Reserve notes. Settlement is made through the Interdistrict Settlement Fund. Wire transfers of funds are also made by member banks for their customers, although in this case the commercial wires are used. During 1947 the Reserve banks effected transfers which amounted to the huge total of \$316 billion.¹

Review Questions

1. Indicate the steps by which the cancellation of money claims is extended from a single bank to the entire country, and even to the whole commercial world.
2. Describe the process of clearing checks within a city.
3. Study the clearing-house proof sheet in Table 15. Why are the total debits and credits necessarily equal? The debit and credit balances equal?
4. What are the usual methods of settlement of balances?
5. Describe the trade association activities performed by clearing houses.
6. Discuss the change in clearing procedure shortly after the inception of the Federal Reserve System.
7. Describe the intradistrict check collection process by means of an hypothetical example.
8. Give an illustration of the interdistrict check collection process.
9. Why does the asset Uncollected Items usually exceed the liability Deferred Availability Items on the balance sheet of the Reserve banks?
10. Discuss the functions performed by the wire-transfer system.
11. Explain the underlying economic activities that enable the money claims against one trading area to be offset over a period of time by the area's claims against other trading areas.

Advanced Questions and Problems

1. The Beta National Bank takes "exchanges for clearing" to the local clearing house to the amount of \$3,500,000; other clearing-house members bring "exchanges for clearing" against the Beta National amounting to \$3,200,000. Included in the latter figure are cashiers' checks for \$80,000, certified checks for \$70,000, and checks drawn by the city for \$50,000. Settlement of balances is made through the Federal Reserve bank.

Show the effects of this clearing operation on the statement of condition of the Beta National.

2. Compare bank clearings and bank debits as indexes of business conditions.
3. Show the effects on the statements of condition of each institution involved in the collection of a check for \$10,000 deposited in your local bank and drawn on the Gamma National Bank of Enid, Oklahoma.

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CHAPTER XV

BANK LIQUIDITY

While the proper degree of liquidity is a problem facing all individuals and enterprises, it has a special significance in the banking field. This arises from the facts (1) that the liabilities of a bank are mainly of a demand nature and (2) that bank liquidity is the principal factor on which the monetary authorities exert an influence in order to control the general monetary situation. A liquid asset is one which is either legal-tender money or is readily convertible to legal tender in a short time without appreciable loss. Bank liquidity is achieved by holding what have come to be known as (1) primary reserves and (2) secondary reserves. The former term refers to the nonearning cash assets of a bank, while the latter includes the most liquid part of earning assets. This chapter is concerned with the various aspects of these two classes of highly liquid claims.

THE NEED FOR LIQUIDITY

Individuals find it convenient to hold a part of their resources in pocket money or in a checking balance despite the fact that such funds yield no interest. Income and expenditures are rarely, if ever, perfectly synchronized. A liquid reserve is needed, therefore, to strike a balance between them. In addition, unforeseen contingencies arise and unusual bargains appear from time to time, both of which call for immediate purchasing power. For similar reasons, business concerns keep till money and maintain checking balances. Commercial banks, however, are faced with a special liquidity problem arising from the fact that their liabilities are either demand or near-demand in nature. Inability to meet customer withdrawals means failure, so that, the reserve position requires close attention. By way of contrast, the ordinary business concern is able to budget rather accurately for known outlays and is often able to secure extensions of time on outstanding indebtedness.

In actual practice, however, a bank's position is not so different as it first appears. A primary working reserve of between 6 and 12 per cent against total deposits and a secondary reserve of between 10 and 20 per cent are in most cases sufficient. This is a small proportion

when it is remembered that customers may call for demand deposits whenever they choose and that savings deposits are in practice also paid on demand. How can such a small reserve be adequate? The answer is quite simple. Business corporations and others keep their store of ready purchasing power largely in the convenient form of checking accounts. A check drawn on one bank shortly reappears as a new deposit in another bank, or even in the same one, without causing any change in total deposits. Likewise, cash withdrawn for retail trade or payrolls is normally redeposited. The aggregate of deposits, therefore, is usually quite stable. A bank then is concerned in large part with what is most likely to happen to its *share* of total deposits. This share for an established institution seldom fluctuates very widely. The banker does not actually depend upon his reserve so much as he does upon the expectation that an inflow of new deposits will match customer withdrawals. The reserve is held to meet the contingency that either a stoppage of the inflow or an acceleration of the outgo may occur. Experience shows that this contingency has usually been provided for by the percentages cited above.

If a cyclical decline of deposits arising from liquidation of bank loans and investments occurs, the individual bank need have no fear of a drain of reserves unless it fails to hold its relative position with other banks. In fact, such a development releases legal reserves in the banking system, so that the average bank finds its reserve position eased. Many bankers fail to realize this basic fact and therefore strive to maintain much higher liquidity than is justified. They often erroneously assume that the bank must be prepared with liquidity for the entire probable decline of deposits irrespective of the reason for that decline. However, if the cyclical decline is accompanied by currency hoarding or gold export, which may be the case in severe liquidations, the whole banking system loses reserve money, and the average bank must be prepared to meet its share. This all boils down to the fact that the individual bank needs sufficient liquidity to meet (1) drains of bank reserves arising from currency hoarding, (2) drains of reserves accompanying gold export, and (3) losses of reserves to other banks in the system.

The last of these drains may occur owing to an unfavorable balance of payments of the bank's area with the rest of the country, and to losses of deposits and reserves competitively—an element of which may be a less rapid contraction of loans and investments than other banks.

The probability of deposit loss depends on both the number of deposit accounts held by the bank and the character of these accounts. If the bulk of a bank's deposits is widely distributed among many customers, there is less probability of deposit loss than if the deposits belong to a

very few people. The law of averages can be depended upon only when there is a sufficiently large number of cases. This condition must be met before a smooth offsetting of deposit credits and debits can be expected. With respect to the character of deposits, great differences in degree of stability exist. The short fluctuations of bankers' deposits are about twice as great as those of individual demand deposits. It is not uncommon for a large bank to lose 20 per cent of its bankers' deposits in a single day, whereas the daily net withdrawal of individual deposits seldom reaches 10 per cent. The size distribution of accounts is also a determinant of irregularity. A few large accounts may easily offset the stabilizing influence of a large number of small ones. In this connection, Federal, state, and municipal deposits are frequently a source of embarrassment to banks, for while such accounts may be left undisturbed for a considerable period, they are often withdrawn entirely within a day or so. Savings and time deposits show far greater stability than any other class.

Another factor bearing on the loss of reserves by a bank to others is the rise in customer loan requirements at certain seasons and during the expansion phase of the business cycle. Customers borrow only when they need money to meet debts. Most of the checks drawn are deposited in other banks and cause a loss of reserves when presented for payment through collection channels. A *net loss* of reserves growing out of loan expansion tends to occur, however, only when the bank is expanding loans more rapidly than other banks. This is true since the bank tends to gain as much in primary deposits and reserves from the expansion of the others as it loses from its own expansion if all banks are proceeding at the same pace.

Still another influence bearing on the need for liquidity is the nature of the monetary system and of the organization of bank reserves. In the absence of a central bank the commercial banks would require far greater liquidity than is needed when a central bank is prepared to perform its reserve and currency functions. If it holds a surplus of ultimate reserves and is therefore in position to increase commercial bank reserves by rediscounting their assets and by purchasing securities in the open market, it stands as a fountain of liquidity ready to quench the thirst of the individual bank. Furthermore, if the central bank is empowered to issue an elastic legal-tender currency in the form of its own notes backed by a fractional reserve, it can avoid the danger of an ultimate reserve drain arising from currency hoarding.

A final aspect of the liquidity problem is the extent to which periods of deep depression, such as 1931-1933, can be expected to be forestalled in the future by a greater responsibility on the part of the government

to maintain relatively full employment, and by private business to do the same through such organizations as the Committee for Economic Development. Success by either government or business in maintaining high-level, stable production would correspondingly reduce the need for liquidity.

This is not the place to undertake more than the foregoing summary of the factors bearing on the need for liquidity. A small booklet would be required to discuss the statistical methods by which the management of a bank is able to forecast its actual liquidity requirements.

PRIMARY RESERVES

The primary reserve of a bank is composed of four elements, as follows: (1) cash in vault; (2) demand deposits maintained with other banks, often called "due from banks"; (3) cash items (mainly checks) in process of collection; and (4) legal reserve deposit with the Federal Reserve bank. No direct income is realized from any of these, so that they are classed as nonearning assets in contrast with loans and investments, including secondary reserves, which provide the main source of bank income.

For purposes of analysis it is also useful to divide primary reserves into (1) primary working reserves and (2) legal reserves. Working reserves include the first three elements listed above. The management of a bank determines the amount of these after analyzing this part of liquidity requirements. For example, management is free to hold as large or as small a proportion of assets in vault cash as it sees fit. Legal reserve requirements, on the other hand, are determined by law and the authority of the Board of Governors. Hence, management can exercise no discretion over what the minimum legal reserve shall be. It can of course hold more than the legal requirement, known as "excess reserve."

Some notion of the relative importance of the primary reserve elements may be gained from Table 16. The four dates selected show the percentages shortly after all legal reserve was shifted to the Federal Reserve banks in 1917, a more or less normal year in the 1920's, a prewar year, and the most recent comparable date. The following facts are evident:

First, the legal reserve has gained greatly in importance since 1917, both as a component of primary reserves and in relation to total deposits. Its large size in 1939 was a result of large gold imports and Federal Reserve policy which combined to create excess reserves. At the end of 1948 legal reserve represented three-fifths of total primary reserve. This

high proportion arose from further gold imports, an increase in legal reserve requirements, and a Reserve policy calling for substantial excess reserves.

Second, the element Due from Banks has undergone a material decline in importance, both as a reserve component and as a percentage of deposits. This development is mainly a consequence of the broadened services of the Federal Reserve banks, and of the fact that interest payments on demand deposits have been unlawful since 1933.

TABLE 16. PRIMARY RESERVE RATIOS OF ALL MEMBER BANKS AT THE END OF SELECTED YEARS

A. Percentage Distribution of Primary Reserve Elements				
Reserve elements	1917, per cent	1927, per cent	1939, per cent	1948, per cent
Cash in vault	11.5	6.6	4.3	4.3
Due from banks	39.0	30.4	28.0	16.7
Cash collection items	22.1	31.4	9.1	19.3
Reserve with Federal Reserve banks . .	27.4	31.6	58.6	59.7
Total primary reserve	100.0	100.0	100.0	100.0

B. Ratios of Primary Reserves to Total Deposits				
Reserve elements	1917, per cent	1927, per cent	1939, per cent	1948, per cent
Cash in vault	3.4	1.4	1.7	1.2
Due from banks	11.4	6.6	11.2	4.7
Cash collection items	6.5	6.8	3.7	5.4
Reserve with Federal Reserve banks . .	8.0	6.9	23.5	16.9
Total primary reserves	29.3	21.7	40.1	28.2

SOURCE: Based on reports of member banks published by Board of Governors in *Banking and Monetary Statistics*, and by the Federal Deposit Insurance Corporation.

Third, the element Cash in Vault declined markedly in importance between 1917 and 1927, both as a reserve component and in relation to deposits. During the next 20 years, however, its relative position was about the same. The principal reason for its decline in the earlier period was the extension of currency services offered by the Reserve banks. Additional branches and quick delivery of currency without charge made possible a reduction in the proportion of vault cash needed by member banks until it has become by far the smallest element of primary reserve.

Last, the relative importance of items in process of collection has remained very nearly constant over the three decades.

Whenever the need arises, a bank may quickly convert one form of primary reserve into another. Excessive vault cash may be shipped to the Federal Reserve banks for reserve credit at the latter's expense. A currency deficiency may be remedied by the reverse process. Transfers between checking balances with correspondents and the legal reserve balance may be made by check or wire. Cash items in process of collection are largely offset by similar claims against the individual bank. In this connection it should be pointed out that primary reserves as given in Table 16 are viewed from the standpoint of the individual bank rather than from that of the banking system. From the viewpoint of the latter only legal reserve and vault cash should be included; the other two elements cancel in the system as a whole.

Primary Working Reserves. Generally speaking, a bank tries to keep its primary *working* reserves—cash in vault, due from banks, and cash items in process of collection—at a minimum consistent with its week-to-week requirements as indicated by experience and a view of the future. This policy arises from the fact that no direct income is realized from these items. Liquidity needs of a seasonal or cyclical nature are therefore usually met with the secondary reserve which does yield some income, however small.

The vault cash requirements show certain regular variations that are reflected in currency withdrawals and deposits. On the last two or three days of each week and at the end of each month currency is withdrawn to meet payrolls. Similarly, retail expenditures require more currency just before holidays and during active buying seasons, especially in December. Each bank learns from experience to anticipate the peculiar currency demands of its customers and its area.

Balances are maintained by member banks with other banks for a number of reasons, as follows: (1) the sale of domestic and foreign exchange drafts; (2) the general need for a correspondent bank in each strategic center to serve as a representative in all kinds of business situations that may arise; (3) as a source of credit information; (4) as a source of investment information and advice; (5) the need for a checking account in strategic centers; (6) the maintenance of a source of borrowing in addition to the Federal Reserve bank; (7) the provision of a wide variety of services, such as safekeeping of securities, the clipping of bond coupons, and the collection of checks drawn on nonpar banks. The importance of the item Due from Banks both in relation to total primary reserves and to total deposits was more than halved between

1917 and 1948, owing mainly to the expansion in services offered by the Reserve banks. Nonmember banks of course depend on correspondent banks to a much larger degree than do members, since most of the Reserve bank services are not available to them. The item "due from banks" therefore represents for them a larger element of primary reserves. It should also be observed that due from banks is a relatively large item in small banks and a relatively small one in the large city banks.

Bank management has little control over the size of cash items in the process of collection, except to keep them at a minimum by prompt forwarding to the proper bank.

Legal Reserves. The United States stands alone among the principal countries in the matter of prescribing by law minimum reserves that commercial banks must maintain against their deposits. Largely owing to greater banking concentration and to higher professional standards, other countries have been able to leave the type and amount of primary reserves to the discretion of management. But with the thousands of small unit banks that were established under our free banking system, stricter regulation proved to be expedient.

*Evolution of Legal Reserves.*¹ In the state banking era before the Civil War, reserve regulation was confined almost exclusively to bank notes. This is understandable for two reasons. First, notes represented a larger part of bank liabilities in this period. After 1855, total deposits exceeded notes, but this was the case only in the larger cities. Second, the nature of bank notes makes their regulation more imperative. In order to serve satisfactorily as currency, they must have wide acceptance by persons not acquainted with the issuing bank. Furthermore, in the absence of specific regulation, redemption is likely to be infrequent. The nature of deposits, however, is somewhat different. A depositor may choose his bank, and checks return promptly to the drawee bank for redemption, ordinarily effecting only one payment.

State regulation of reserves against bank notes was an outgrowth of the heavy losses suffered by noteholders in the panic of 1837. Before this time no state imposed such regulations. In the five years following the panic several states² adopted reserve restrictions, and many of the others followed suit before the Civil War. There were, however, only two states that extended regulation to deposits in this period. In 1842,

¹ Much of the material in this section has been adapted from Professor R. G. Rodkey's valuable study, *Legal Reserves in American Banking* (Ann Arbor, University of Michigan Press, 1934).

² Virginia, 1837; Georgia and New York, 1838; Ohio, 1839; and Louisiana, 1842.

Louisiana required that banks should hold specie reserves equal to one-third of their "cash responsibilities." And in 1858, Massachusetts passed a law providing for a reserve of 15 per cent against circulation and *deposits*. This reserve was to be kept in specie or in the form of non-interest-bearing balances in Boston and New York City banks.

From the foregoing brief survey it is evident that the framers of the National Bank Act found an established precedent for legal reserves in the experience of the states. In the Act of June 3, 1864, 17 important cities were named as redemption centers in which national banks were required to carry a reserve of 25 per cent against notes and deposits. In New York City all the reserve had to be held in specie or lawful money. In the other 16 redemption cities one-half of the reserve might be deposited with approved redemption agents in New York City. All other national banks (the country banks) were required to keep a reserve of 15 per cent, of which as much as three-fifths could be maintained as a deposit with approved banks in the redemption centers. The remaining two-fifths had to be held as vault cash. The following features of these requirements should be especially emphasized. First, the policy of requiring a reserve against deposits followed the precedent set by Louisiana and Massachusetts. Second, the practice of permitting balances maintained with approved banks to count as legal requirements was associated with the redemption of national bank notes rather than with the provision of a legal reserve for deposits. And last, no distinction was made between time and demand deposits.

With the exception of an increase in the number of reserve cities, the original reserve requirements against deposits in national banks remained unchanged until the Federal Reserve Act became operative in 1914. Meanwhile, practically all the states passed or amended laws regulating the reserves of state-chartered banks. After 1885 the tendency of the states was to follow the example set by the National Bank Act.

Legal Reserves under the Federal Reserve System. One of the principal reasons for the establishment of the Federal Reserve System was to reform the organization and administration of reserves. It will be recalled that there were numerous reserve defects, as follows: (1) there was almost no elasticity in total legal reserves; (2) reserves were scattered and immobile; (3) such centralization of reserves as existed was too largely in the hands of New York City banks which held little surplus reserve and were therefore forced to suspend payments in legal tender in emergencies; (4) no distinction in reserve requirements between time and demand deposits was recognized; (5) reserve requirements were inequitably set up on a location basis; and (6) the currency was inelastic

which caused ultimate reserve to be drained into circulation when currency demands increased because of hoarding or of active business. All these combined to produce a breakdown of the financial system in periods of depression, and to create serious disturbances in the money market—reflected by wide gyrations of interest rates—sometime during almost every year.

For the most part the Reserve System has eliminated these defects. A large measure of elasticity in total legal reserves has been achieved by centralizing all monetary gold in the Treasury and all gold-certificate reserves in the Federal Reserve banks. This has given the Reserve banks a substantial surplus of legal reserve which enables them to expand total commercial bank reserves in accordance with the general monetary policies as determined by the Board of Governors. By making the legal reserves of member banks consist of deposits on the books of the Reserve banks, a credit element can be injected into these reserves limited by the Reserve bank reserve ratio which is fixed by law at 25 per cent of combined deposit and Federal Reserve note liabilities. The Reserve banks can expand their own credit by lending to the member banks or others and by purchasing securities in the open market.

The needed distinction in legal reserve requirements applying to time and demand deposits was made in the Federal Reserve Act. The Board is empowered to fix the required reserve at between 3 and 6 per cent of time deposits in all classes of member banks. Behind net demand deposits the range is 7 to 14 per cent in country banks (all others than central reserve and reserve city banks), 10 to 20 per cent in reserve cities (about 60 leading cities), and 13 to 26 per cent in central reserve cities (New York and Chicago).¹

Currency elasticity was also provided, as we have seen, in the form of the Federal Reserve note with a gold-certificate reserve requirement of 25 per cent.

¹ Between 1917 and 1935 the legal reserves required by the Federal Reserve Act were the minima given above, *i.e.*, 3 per cent of time deposits and 7, 10, and 13 per cent of net demand deposits in country, reserve city, and central reserve city banks, respectively. In this period the Board had no power to change them. The Banking Act of 1935 empowered the Board to double the percentages in its discretion as an added method of credit control. This power was utilized to the full, effective May 1, 1937. Then in mid-August, 1948, the Act was amended again to permit the Board to raise the percentages as high as 7½ against time deposits, and 18, 24, and 30 against net demand deposits in the three groupings, respectively. This additional power was granted temporarily until June 30, 1949, as an anti-inflationary measure when it lapsed.

The outmoded location basis for reserves, however, was retained, and it remains one of the aspects of the reserve law which needs correction.

The provision of the law relating to the computation of legal reserves reads as follows:

In estimating the reserve balances required by this Act, member banks may deduct from the amount of their gross demand deposits the amounts of balances due from other banks (except Federal Reserve banks and foreign banks) and cash items in process of collection payable immediately upon presentation in the United States, within the meaning of the terms as defined by the Board of Governors of the Federal Reserve System.¹

Gross demand deposits include individual and government deposits, balances due to domestic or foreign banks, certified checks, cashiers' or treasurers' checks, and letters of credit or travelers' checks sold for cash. These deductions from gross demand deposits give the amount of net demand deposits, to which the legal reserve percentages apply. The reserve percentage effective for time deposits is applied to the gross amount without deductions. It is not necessary, however, for a member bank to keep its legal reserve up to the requirement every day. Central reserve city and reserve city banks figure their reserve through a period of one week, and country banks through a period of two weeks. It is sufficient that the average amount of legal reserve be high enough to equal an amount determined by applying the effective reserve percentages to the average amount of deposits during the period. Member banks are careful to meet the legal requirement since the amount of reserve deficiency is regarded as a loan at a rate 1 per cent higher than the rediscount rate.

The chief function of legal reserves under modern conditions is that of permitting the monetary authorities to regulate the stock of money in the best interests of the nation. It is no longer that of ensuring a minimum degree of liquidity and safety in the individual bank, as was largely the case before the Federal Reserve System. Liquidity is provided by the Reserve banks through advances on commercial bank assets, by open-market operations, and by commercial bank holdings of secondary reserves. The system of legal reserve requirements should therefore be tested by its capacity to promote effective monetary control. This means that adequate power and resources should be placed in the hands of the Board and the Reserve banks to make effective control possible. Reserve requirements should also be administratively

¹ Federal Reserve Act, Sec. 19, Par. 10.

practicable, and they should be distributed equitably among the commercial banks.

When the existing reserve system is viewed in this light, certain changes appear to be desirable. First, the Board should be given complete discretion over the amount of legal reserves required. This would be a logical counterpart to the wide discretion over open-market operations, and it would add to their ability to combat an undesirable price inflation. Second, cash in vault should qualify as legal reserve within reasonable limits. This would avoid the discrimination that exists as between banks whose situations require widely differing proportions of vault cash. For illustration, the banks in the immediate vicinity of the Reserve banks and branches need only about one-third as large a proportion in relation to net demand deposits as do other member banks. Last, the existing location basis for legal reserves should be discarded because of the gross inequities which it harbors in the distribution of the burden of maintaining legal reserves.

SECONDARY RESERVES

Secondary reserves are composed of the most liquid part of bank earning assets. They are readily marketable, short-term, highest quality securities which can promptly be converted into primary reserve in case of need. They thus constitute a secondary line in the master plan of defense against drains of primary reserves; it is from this concept that they receive their name. Bankers think of these reserves as enabling them to meet a large part, if not all, of probable primary reserve losses without resort to Reserve bank borrowing which is regarded as a third line of defense in emergencies.

The paramount function of secondary reserves is thus the provision of liquidity. They also yield a small return, but income should be regarded as of minor importance. Quality, marketability, and short maturity should not be tangibly sacrificed for it.

While the general concept of secondary reserves is exceedingly useful, the line of demarcation between them and the other earning assets of a bank is necessarily a somewhat arbitrary one. The degree of liquidity is a scale with fine gradations ranging from the most liquid primary reserves to the least liquid of assets. It has been traditional to draw this line at maturities of one year or less assuming high quality and marketability. Almost all authorities suggest this maturity limit as a practical matter for secondary reserves other than United States securities. But there is no general agreement on the maturity limit for the latter. In view of the superior features of short-term government

securities, some suggest the inclusion of maturities up to five or six years. A limit of three years would be subscribed to by the majority. This represents a reasonable compromise in view of the fact that historically a cyclical drain of reserves has seldom if ever exceeded this period. If the limit is set beyond one year, however, care should be taken to keep the maturity distribution by years approximately equal with any departure leaning toward the short-maturity side.

The most widely accepted components of the secondary reserve are (1) short-term United States securities; (2) bankers' acceptances; (3) open-market commercial paper; (4) call loans to security brokers and dealers; (5) other high-grade, marketable obligations with a maturity not to exceed one year. With the vast expansion of the Federal debt since the early 1930's, United States securities have become the predominant avenue of secondary reserve investment. Before the 1930's however, call loans were usually the largest component, and commercial paper was an important element. Bankers' acceptances were a significant holding during the 1920's. At the end of April, 1949, the total amounts of these various secondary reserve media were as follows:¹

SECONDARY RESERVE MEDIA, APRIL, 1949

(In millions of dollars)

United States securities with maturity of or callable within:	
One year or less	52,492
Three years or less	76,235
Commercial paper outstanding	249
Bankers' acceptances outstanding	204
Loans to Stock Exchange firms carrying margin accounts ..	329

From this schedule it is evident that for most practical purposes short-term government securities were the only available form of secondary reserve investment in 1949.

Since the war commercial banks have in general been in a highly liquid condition, owing to their large holdings of short-term government securities. At the end of 1948, insured commercial banks held \$37.6 billion of government securities with maturity of five years or less. This was 27 per cent of their total deposits. In addition, they held \$38.1 billion—27 per cent of total deposits—in primary reserves.

One of the liquidity problems that continuously faces a bank is the distribution of liquid assets between the primary and secondary reserve categories. Since secondary reserves yield some return, the efficient banker provides for as much of needed liquidity as possible in this division. That is, he keeps primary reserves at a minimum consistent with

¹ *Federal Reserve Bulletin*, May, 1949, p. 553; June, 1949, p. 699.

avoiding embarrassment from having inadequate amounts of cash in vault and of free balances with other banks. This minimum is a fluctuating one from day to day and week to week determined by past experience tempered by a view of the changing future. For requirements that look more than a few weeks ahead, liquidity can best be provided as a rule by the secondary reserve. It is the fund that absorbs the larger variations of net inflow or outflow of reserve funds, and therefore undergoes an accordionlike action. It is a buffer between primary reserves, on the one hand, and loans and investments on the other. By its contraction the former can be kept at the desired working level, loans can be expanded to meet customer demand, and the investment fund can be held intact with small danger that securities will have to be sacrificed in a period of liquidation, *i.e.*, provided an adequate secondary reserve is maintained.

One of the most difficult questions in determining the proper amount of secondary reserve is the extent to which the Federal Reserve banks shall be depended on to provide liquidity. They are not legally obligated to lend reserves to members even though the latter possess eligible commercial paper and United States securities. They may refuse to lend either because of unsound conditions in a particular bank or of unhealthy credit conditions in general. Nevertheless, one of their major tasks is to provide liquidity to the banks when it is most needed in emergencies. It is therefore most unlikely that the Reserve banks will in practice refuse a loan of reserves to a solvent member bank that possesses eligible assets and that is not being operated speculatively or illegally. It is also unthinkable that they will deny legal and working reserves to member banks as a whole in a period of stress. This can be done, it will be recalled, by advances on eligible or acceptable assets, by purchases of securities in the open market, and by a reduction in legal reserve requirements if they stand above the minimum.

Member banks may for these reasons consider the Reserve banks as providing an important third line of liquidity protection. The extent to which a particular bank chooses to rely on the Reserve banks to provide liquidity is in large part a question of the basic philosophy of its officers. Some very conservative banks plan to meet estimated liquidity requirements entirely by holdings of primary and secondary reserves, and plan to keep Reserve borrowing for untoward circumstances which they cannot at the moment foresee. This seems to be a counsel of undue conservatism which weakens the bank by restricted earnings more than it is strengthened by excessive liquidity. Such a policy almost denies the existence of the Federal Reserve System with its vast

expansion potential, and therefore applies better to conditions before the Federal Reserve System than to those of the postwar era.

On the other hand, some banks lean to the opposite extreme and hold no assets that qualify as secondary reserve. This is even more shortsighted and is a hazard to a bank's very existence. Such a policy depends altogether too much on the paternalism of the Reserve System. It should not be forgotten that laws, regulations, and the administration of both are subject to change—sometimes rapid change. In view of this fact it is well to maintain a certain degree of independent liquidity strength.

The most defensible secondary reserve policy seems to lie somewhere between these two extremes—at the proverbial “happy medium.” Perhaps a good rule to follow is to be as liquid, or a little more so, than the average bank in comparable circumstances. The Federal Reserve authorities and the government can reasonably be depended on to save the *average* bank from failure owing to a lack of liquidity. If conditions should ever become so bad that half the banks are forced to close, there will probably be no storm cellar adequate to protect the other half from the debacle. A middle-ground policy of this sort has the merit of providing all reasonable liquidity protection and at the same time of enabling a bank to strengthen its position by larger additions to capital funds out of net profits. On the basis of past experience the optimum size of secondary reserve falls for most banks in the range of 12 to 25 per cent of demand deposits and 8 to 12 per cent of time deposits. However, some banks need more and others need less depending on the peculiar conditions under which they operate. It is an individual bank problem and general rules must always be applied with care to the particular case.

It remains to point out the strategic roles which the Reserve banks and the government play in the general bank liquidity situation. In periods of heavy general liquidation, only these central agencies are in position to come to the rescue of commercial banks. When money, and especially currency, is generally desired more than other assets at existing prices, the markets which normally provide exchange liquidity dry up. Earning assets of banks, including secondary reserves, become to a degree frozen since few individuals, investment institutions, and banks wish to buy, and the majority wishes to sell. Under these circumstances relief from liquidity pressure can be provided by the Reserve authorities through advances of reserve money to member banks at low rates, the creation of additional primary reserves by the purchase of securities in the open market, and by lowering legal reserve

requirements. The government is of course in an even more basic position to give relief by loans on and purchases of frozen bank assets, such as real estate mortgage loans, and by Federal spending on public works, financed by borrowing at the Reserve banks if maximum inflationary effects are desired. In addition, the government has the final power of currency issuance which it can employ if necessary. Thus, in the final analysis, the individual bank is more dependent for liquidity protection in periods of stress on the Reserve banks and the Treasury than on its own secondary reserves.

Review Questions

1. What is the special significance of liquidity in the banking field?
2. Why is it reasonable for a commercial bank to hold only between 16 and 32 per cent of deposits in liquid assets even though the bulk of its liabilities is payable on demand?
3. How is the number of deposit accounts in a bank related to the need for liquidity? The character of these accounts?
4. Explain the relation of customer loan requirements of a bank to its need for liquidity.
5. How does the nature of the monetary system and of the organization of bank reserves bear on the need for bank liquidity?
6. What relation does the responsibility taken by the government and by private business with regard to the level of employment have to the need for bank liquidity?
7. Distinguish between primary working reserves and legal reserves of commercial banks.
8. Interpret Table 16 which shows a percentage distribution of primary reserves and the percentages of primary reserve components to total deposits in member banks.
9. Formulate a general policy to govern the amount of primary working reserve of a commercial bank.
10. Summarize the evolution of legal reserves against deposits of banks in the United States prior to establishment of the Federal Reserve System.
11. Explain the manner in which the Federal Reserve System has given elasticity to total legal reserves.
12. What provision was made for currency elasticity by the Federal Reserve Act?
13. Compute the amount of required legal reserve for a local member bank as of a recent date.
14. State the chief function of legal reserves today in the United States.
15. Indicate the changes that appear desirable in legal reserve requirements.
16. Define the term "secondary reserves."
17. Explain the paramount function of secondary reserves.
18. Enumerate the most widely accepted components of bank secondary reserves, and indicate their relative importances in recent years.
19. Explain the analogy of secondary reserves to an accordion.
20. Outline the methods by which the Reserve banks stand as a third line of liquidity protection for member banks.

21. Contrast the secondary reserve policies of undue conservatism and of unwarranted risk taking.

22. Formulate the guiding principles with regard to a desirable degree of liquidity for a commercial bank.

23. Discuss the strategic positions of the Reserve banks and the Federal government in the field of liquidity protection for banks.

Advanced Questions and Problems

1. What special liquidity problem faces a bank serving an area with wide seasonal variations in business? Give an illustration.

2. "If a cyclical decline of deposits arising from liquidation of loans and investments occurs, the individual bank need have no fear of a drain of reserves unless it fails to hold its relative position with other banks." Support this statement.

3. Outline a plan by which the management of a commercial bank might forecast its liquidity requirements.

4. "The line of demarcation between secondary reserves and the other earning assets of a bank is a somewhat arbitrary one." Support this statement.

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CHAPTER XVI

BANK LOANS AND INVESTMENTS

The volume and character of bank assets are both matters of large economic importance. Their volume is the chief determinant of demand deposits which constitute the dominant part of the stock of payment money. In view of this fact they exert a strong influence over the system of prices upon which we largely depend for the guidance of production and distribution. The character of bank assets is also significant, since the support that banks extend to each type of economic activity influences the actual course of production, *i.e.*, what products, and how much of each, shall be produced in what location.

Although the distinction is somewhat artificial it is convenient to divide the earning assets of banks into two broad categories: (1) loans and (2) investments.

BANK LOANS

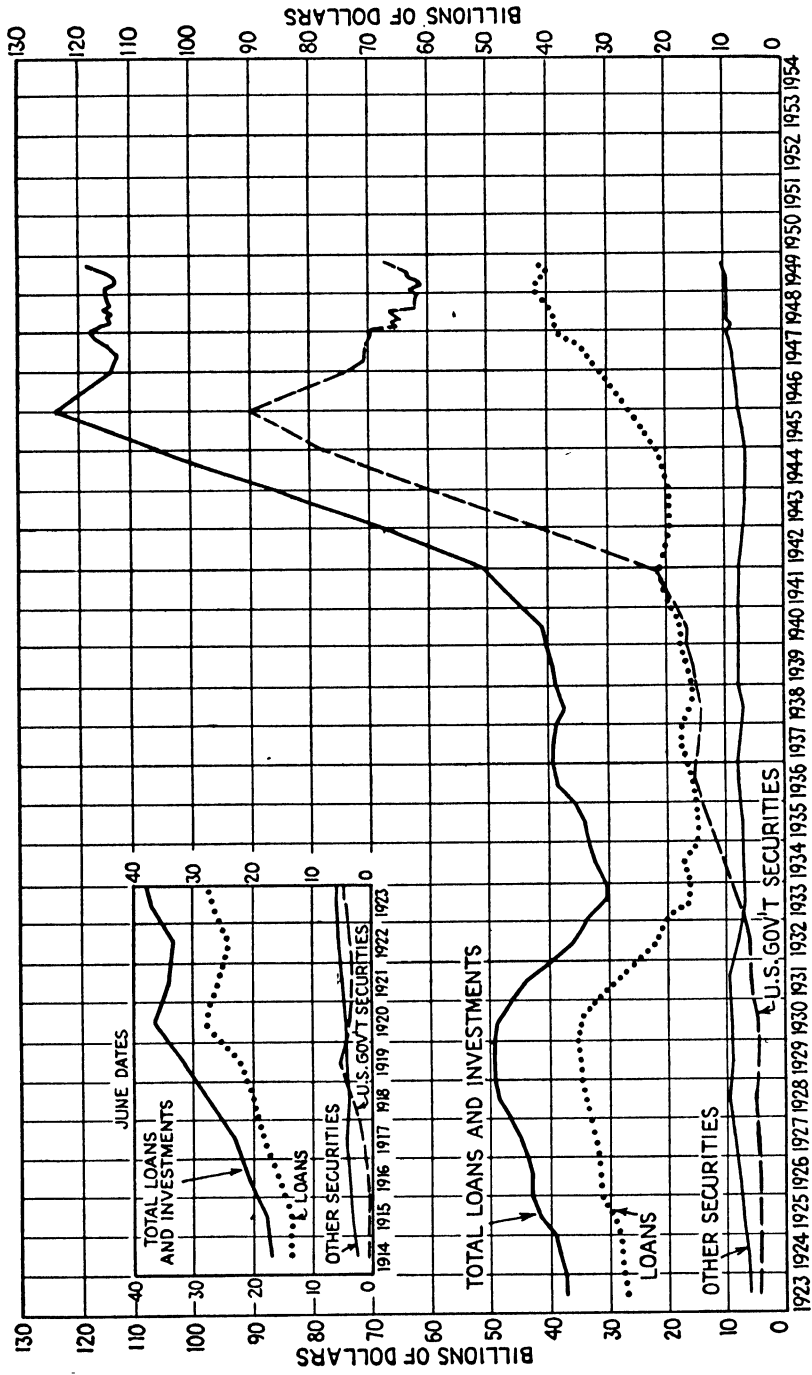
Bank loans may be differentiated from bank investments in at least three ways. In the first place, a bank makes most of its loans to regular customers who maintain deposit accounts. There exists an intimate, and usually continuing, business relationship with the customer wherein he reveals his financial position, agrees to observe certain requirements, and expects in return that the bank will grant him loans to a reasonable amount upon request. Investments, on the other hand, are salable securities bought under the impersonal conditions of an open market.

Second, a bank loan is evidenced by a promissory note, the whole of which is owned by the bank, whereas a bond investment is ordinarily a fractional participation in a large obligation lodged with a trustee.

Last, the maturity date of bank loans is much shorter on the average than that of bonds. This reflects the fact that commercial loans represent mainly the financing of working capital needs while bonds as a rule supply fixed capital funds.

During the 1920's, bank loans represented more than two-thirds of total earning assets, and were the major source of bank income. In 1928, for example, the interest received on loans by member banks amounted to \$1,374 million compared with a return on investments of

CHART 7. LOANS AND INVESTMENTS OF ALL COMMERCIAL BANKS IN THE UNITED STATES, 1914-1949



Source: *Banking and Monetary Statistics for 1914-1941*; *Federal Reserve Bulletin* since 1941; June 1914-1922; June and December, 1923-1946; monthly, 1947-1949.

\$498 million. During the great depression, however, loans declined heavily while investments were greatly increased owing to the repeated Treasury deficits. In fact, since 1933 investments have been the larger of the two (see Chart 7). Then the financing of the Second World War quadrupled the holdings of United States securities so that, despite some reduction since the war and a rise of loans, loans of all commercial banks were only 37 per cent of earning assets at the end of April, 1949. Owing to the higher rates on loans, however, they represented a slightly larger source of gross earnings.

Like most other statistical data, loans may be classified in a variety of ways. One may be interested in the purpose of loans, the size of loans, the rates of interest, the type of loaning bank, whether the loans are made to customers or noncustomers, types of collateral security, maturities, or in other possible factors. In this section the primary basis is *purpose*, *i.e.*, whether the loans are made to meet requirements of business, investment, speculation, or to finance the consumer.

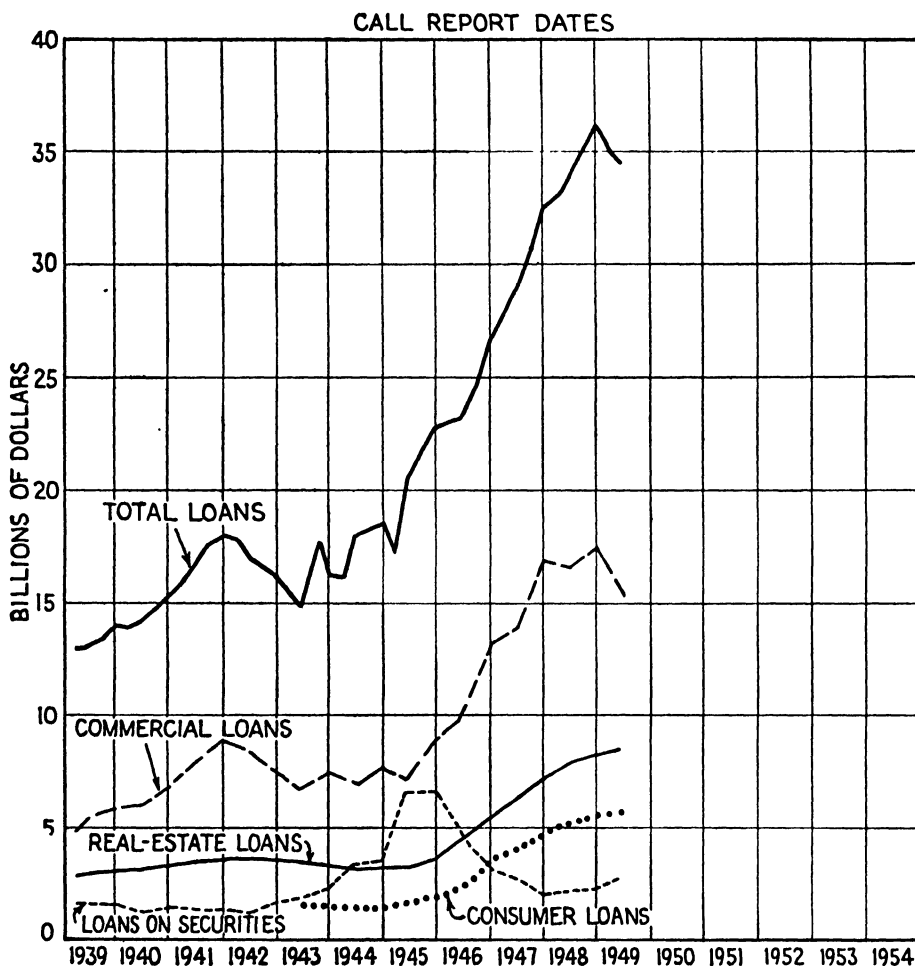
Commercial Loans. The largest component of bank loans is the commercial division which amounted to \$17.6 billion, or about one-half of total member bank loans at the end of 1948 (see Chart 8). These loans typically finance the working-capital needs of business at the various stages of production and distribution. The proceeds are used by borrowing firms to supply cash reserves, to buy inventories, to finance accounts and notes receivable, and to meet various current expenses including the payment of wages. A sizable proportion of this division also represents intermediate and long-term financing of business. In November, 1946, more than one-third of the amount of such loans had an initial maturity of more than one year.

Credit Analysis. More than half the amount of loans to business is not protected by specific collateral security, but rests upon the prospective earning power and credit standing of the borrower. This calls for a great deal of care in the selection of credit risks. The larger banks maintain extensive credit departments which assemble and analyze all pertinent information concerning borrowing customers. Particular emphasis is placed upon the analysis of periodic financial statements. The current income statement is studied and compared with those of previous years in order that there may be no doubt about the important factor, earning power.

Likewise, the current balance sheet is carefully analyzed to see whether net working capital is sufficient, the capital structure well balanced, and other items in proper relation. Trends of the significant items are also observed by comparison with past reports. From these,

and certain financial ratios which may be compared with those of the industry, it is possible for an expert to learn a great deal about the soundness of management. A bank also considers the position and

CHART 8. LOANS OF MEMBER BANKS OF THE FEDERAL RESERVE SYSTEM, 1939-1949



prospects of the industry to which the borrower belongs as well as the latter's standing in the trade.

Relations between Bank and Borrower. It is not enough, however, that an applicant for a line of credit be judged a good risk by the bank after analysis along the foregoing lines. His past relations with the bank must have been satisfactory, and he must agree to observe certain requirements in the future. One of these is that he maintain an adequate aver-

age balance. Although the requirement is not uniform or rigid, it is usual for a bank to insist upon observance of the so-called "20 per cent rule." This means that the customer is expected to keep an average balance equal to about 20 per cent of the line of credit to which he is entitled. In practice, the size of the average balance is determined by many other considerations besides the amount of customer borrowing power. Bargaining between borrower and lender is often an important determinant with the result that many large concerns are able to borrow as much as 10 times their average balance on an unsecured basis.

Another requirement that a bank usually tries to enforce is that the borrower pay off his short-term indebtedness once or twice during the year. This is designed as a liquidity test, but in practice large concerns that deal with several banks frequently meet it by simply shifting indebtedness from one bank to another.

Business of Borrowers. A comprehensive survey of business loans of member banks, sponsored by the Board of Governors of the Federal Reserve System, was recently published.¹ It provides valuable new information on various aspects of loans and corrects a number of misconceptions of long standing. For these reasons a summary of the major findings of this survey is desirable at this point.

Table 17 provides a classification of the business loans of member banks by business of borrowers as of November 20, 1946. The outstanding facts may be summarized as follows: First, manufacturing and mining accounted for the largest amount of business loans—43 per cent of the total. The size of loan in this field was well above average, so that it represented only 17 per cent of the total number of loans. Over half of total loans was in the food, liquor, tobacco, metals, and metal-products industries.

Second, wholesale trade was next in importance with 18 per cent of total business loans. Here also the size of loan was above average but not so large as in manufacturing and mining. Two-thirds of the amount of loans in this sector was represented by food, liquor, tobacco, drugs, apparel, and dry goods.

Third, retail trade accounted for 11 per cent of the amount of business loans, but for 38 per cent of the number. This reflected the fact that such establishments are relatively small and represent approximately

¹ Albert R. Koch, "Business Loans of Member Banks," *Federal Reserve Bulletin*, March, 1947, pp. 253-263; Duncan McC. Holthausen, "Term Lending to Business by Commercial Banks," *ibid.*, May, 1947, pp. 498-519; Tynan Smith, "Security Pledged on Member Bank Loans to Business," *ibid.*, June, 1947, pp. 664-680; Richard Youngdahl, "The Structure of Interest Rates on Business Loans at Member Banks," *ibid.*, July, 1947, pp. 803-819.

TABLE 17. BUSINESS LOANS OF MEMBER BANKS, NOVEMBER 20, 1946*

Business of borrowers	Amount of loans		Number of loans	
	In millions of dollars	Percent-age distribution	In thousands	Percent-age distribution
Manufacturing and mining, total.....	5,650	42.8	116	17.2
Food, liquor, and tobacco.....	1,536	11.6	18	2.7
Textiles, apparel, and leather. . . .	484	3.7	16	2.4
Metals and metal products	1,629	12.4	29	4.3
Petroleum, coal, chemicals and rubber	1,061	8.0	13	1.9
All other	939	7.1	40	5.9
Wholesale trade, total	2,411	18.3	88	13.1
Food, liquor, tobacco, and drugs . .	1,010	7.7	31	4.6
Apparel and dry goods	570	4.3	9	1.3
Home furnishings, metal products, and building materials	308	2.3	22	3.3
Automobiles, parts, and petroleum . .	102	0.8	8	1.2
All other	422	3.2	17	2.5
Retail trade, total	1,472	11.2	253	37.6
Food, liquor, tobacco, and drugs . . .	396	3.0	82	12.2
Apparel, dry goods and department stores	420	3.2	34	5.1
Home furnishings, metal products, and building materials	284	2.2	58	8.6
Automobiles, parts, and filling stations	199	1.5	45	6.7
All other	173	1.3	34	5.1
Public utilities	1,222	9.3	38	5.6
Sales finance	779	5.9	7	1.0
Services	490	3.7	76	11.3
Construction	446	3.4	43	6.4
All other	719	5.4	52	7.7
Total, all borrowers	13,189	100.0	673	100.0

SOURCE: *Federal Reserve Bulletin*, March, 1947, p. 255.

* Estimates of Board of Governors of the Federal Reserve System, Division of Research and Statistics.

half the number of business firms in the country. About one-half of the amount of loans in this field was represented by stores selling food, liquor, tobacco, drugs, home furnishings, metal, and building products.

Fourth, the other fields of business in descending order of importance

as borrowers were public utilities, sales finance companies, and construction firms.

Last, one is impressed with the wide distribution of loans among all types of business enterprises. In all, 673,000 loans were outstanding.

Size of Borrowers and Lenders. As would be expected, large companies accounted for by far the largest amount of business loans, and small concerns for the bulk of the number of loans. To be more specific, companies with assets of \$250,000 or more were responsible for 74 per cent of the amount of loans but for only 10 per cent of the number.

In the lending field, large banks made the greatest amount of loans but small banks made by far the greatest number of loans. Also, the large banks were responsible for large loans while the small banks specialized in loans to medium and small businesses. More concretely, banks with total deposits of \$100 million or more accounted for 71 per cent of the total amount of loans. The large city banks are in the best position to service large enterprises operating on a nation-wide basis. Medium and small banks in the smaller communities are usually best able to serve local business.

Type of Collateral Security. Commercial banks generally follow the practice of limiting their risks by requiring collateral security for loans when convenient collateral is available and when competitive lending practices permit. As a consequence, nearly two-thirds of the number of business loans of member banks representing 44 per cent of the amount was secured by some form of collateral in the fall of 1946. The remaining one-third representing 56 per cent of the amount was unsecured by specific collateral.

Large companies account for the predominant amount of unsecured loans. Their credit standing is typically higher, and dependable information to judge their position and prospects is more readily available. Moreover, they have alternative sources of borrowing, such as the securities markets and other banks, so that they are in a stronger competitive position to bargain for credit on an unsecured basis. In the fall of 1946, more than three-fourths of the amount of loans to concerns with assets of \$5 million or more was unsecured by specific collateral.

Small business, on the other hand, borrows predominantly by the pledge of collateral. On the same date, 68 per cent of the amount of loans to enterprises with assets of under \$250,000 was on a secured basis.

Table 18 which gives a classification of the business loans of member banks by type of security in late November, 1946, brings out several

significant facts, as follows:

TABLE 18. BUSINESS LOANS OF MEMBER BANKS, BY TYPE OF SECURITY, NOVEMBER 20, 1946*

Type of security	Amount of loans, millions	Percentage distribution
Unsecured	\$ 7,322	55.3
Secured ..	5,799	43.8
Unclassified	116	0.9
All loans ..	\$13,237	100.0
Secured loans:		
Inventories	\$ 1,195	20.6
Stocks, bonds, and mortgages	1,075	18.5
Equipment	706	12.2
Endorsed and comaker	706	12.2
Assignment of claims	314	5.4
Oil runs	191	3.3
Accounts receivable	190	3.3
Life insurance	148	2.6
Government participation or guarantee	119	2.1
Other security	212	3.7
All secured loans ..	\$ 5,799	100.0

SOURCE: *Federal Reserve Bulletin*, June, 1947, p. 665

* Estimates of Board of Governors of the Federal Reserve System, Division of Research and Statistics.

First, a wide variety of types of security was utilized, although nearly two-thirds of the amount was secured by the first four categories: (1) inventories; (2) stocks, bonds, and mortgages; (3) equipment; and (4) endorsements and comakers.

Second, inventories were the most important form of security, accounting for more than one-fifth of the total. Most of these loans were secured by warehouse receipts, of which bonded warehouse receipts represented 44 per cent, field warehouse receipts 7 per cent, and other warehouse receipts 49 per cent.¹ Other inventory loans were secured by bills of lading, trust receipts, and chattel mortgages.²

¹ Warehouses are of three main types: (1) cold storage for perishable goods, (2) general-merchandise storage, and (3) field warehouses. The receipts of all three may be used as security for loans.

A valid warehouse receipt evidences the deposit of goods with a bona fide warehouse; it also describes and identifies the goods and gives the terms and conditions under which they will be delivered by the warehouse. Receipts may be either

Third, stocks, bonds, and mortgages were of almost equal importance with inventories as collateral for business loans—18.5 per cent of total secured loans: Within this category stocks ranked first and government securities were next in importance.

Last, while loans secured by equipment ranked third in amount they were first in the number of loans. Small enterprises, especially in the retail, manufacturing, service, and construction fields, finance all kinds of equipment by liens securing bank loans. These loans were typically payable in regular instalments. About two-thirds of the amount and one-half of the number had maturities of one or more years. The maturity of one-fourth the amount of such loans, made largely to transportation and other public utilities, exceeded five years. More than one-third of the commercial banks had loans secured by equipment; in the cities this proportion exceeded one-half.

Term Loans. A significant development in bank lending during and since the war is the "term loan." Such loans are usually defined to in-

negotiable or nonnegotiable. The former pass freely from hand to hand by endorsement, transferring title each time. Nonnegotiable receipts require delivery of the goods only to the party specified.

A bonded warehouse is one which has provided adequate indemnity protection to the holders of receipts against theft according to the minimum standards set in the Federal Warehouse Act and by the government in approving warehouses for the storage of goods on which custom duties and internal revenue charges have not been paid.

Field warehouses are branches of public warehouses established on the premises of the manufacturer or other enterprise in order to eliminate unnecessary movements of bulky materials, and to make possible loans secured by field warehouse receipts. This method of financing has developed for the most part since the early 1930's. Just before the war 13 per cent of insured commercial banks were engaged in it, but only about 3 per cent were so engaged in the fall of 1946. This decline was probably a result of the lessened need for field warehouse loans owing to the strengthened financial position of business.

² Bills of lading are issued by common carriers acknowledging receipt of goods and promising to deliver them safely to the consignee at the point of destination. A *straight* bill of lading is nonnegotiable; an *order* bill of lading is negotiable and passes by endorsement so that it is more acceptable to the bank as collateral security.

A trust receipt is given by the borrower to the bank as collateral security usually to replace a warehouse receipt or a bill of lading when the goods are received by the borrower for sale or manufacture. In general, it is less acceptable as collateral since in case of default the lender must be able to identify the specific goods against which the receipt was issued. Other creditors may also dispute the bank's claim.

A chattel mortgage protects the lender by conditionally conveying title to movable personal property as distinguished from fixed or real property.

clude business loans with an initial maturity of more than one year, irrespective of purpose and whether secured or unsecured. In late November, 1946, these loans constituted more than one-third of the amount of total business loans of member banks. They were most important in the field of manufacturing and mining—more than one-half the total—but they were also utilized extensively by other enterprises, especially in the utility, retail trade, and service fields.

A distinctive feature of term loans is the provision for repayment in instalments, either by a series of notes maturing at different times or by a single note with a series of prescheduled payments. The original maturity of about four-fifths of the number and one-half the amount of term loans made in 1946 was 5 years or less. Nearly all had a maturity of 10 years or less. Small term loans which represent about nine-tenths of the number are typically secured by pledge of equipment or real estate. Large term loans, however, are usually unsecured with reliance on the general credit prospects of the borrower and a loan agreement which restricts the borrower in various ways, such as in regard to additional borrowing and the maintenance of liquidity standards.

A flat per annum interest rate on each loan was most common, especially for the smaller loans. In some cases a graduated rate applied, rising from the first to the last instalment; in a few instances the rate on the unpaid balance was tied to the rediscount rate of the Federal Reserve bank. These departures from the flat rate occurred for the most part in connection with large term loans.

The recent growth of term loans is accounted for largely by three factors. First, they are a more systematic substitute for the large amount of loans which was only nominally short-term in previous banking practice. These notes were made on demand or with a maturity of less than one year, but with the understanding that renewal would be approved. The instalment feature of term loans represents a constructive improvement over the old hit-or-miss practices in this field. Second, term loans have in some degree taken the place of corporate bonds in bank assets. Despite the threefold increase in bank earning assets since 1939, holdings of corporate bonds have registered only a nominal expansion. Last, term loans have been used as a means of financing intermediate capital needs because of the unfavorable market for stocks during and since the Second World War. If and when the valuation placed on stocks by the market reaches a more normal relation to corporate earning power and dividends, it is likely that business will raise more new capital by equity financing.

About three-fourths of all member banks had term loans in their

portfolios in late 1946. The proportion of banks making this type of loan varied directly with size, ranging from one-half in banks with deposits of under \$2 million to all banks in the \$500 million-and-over group.

Cooperation in making large term loans has become a common practice of the big city banks which account for the bulk of the dollar volume of term lending. In this way they spread the risks and are able to make large loans within the 10 per cent limit of capital and surplus. Participations of this sort represented about one-third of the amount of term loans outstanding in late November, 1946.

Revolving Credit. A new method of credit granting by large city banks has grown up mainly during and since the war, *viz.*, the revolving credit arrangement; it is closely allied to the term loan just discussed. Under this method the borrower acquires the right to use a maximum line of credit at any time during a stipulated period, usually from one to three years. Amounts actually borrowed are represented by separate notes which usually have shorter maturities than the commitment, and may be paid off and replaced by new ones in accordance with the borrower's need. The interest rate is specified in advance. In addition, the bank is paid a commitment fee of about $\frac{1}{2}$ per cent per annum on the unused part of the maximum line which it has agreed to provide.

In some cases the revolving credit agreement provides for the conversion of the balance of the loan into a term loan on expiration of the commitment. This combination of the two methods is quite similar to the arrangement known as the "stand-by" credit. Under this the bank commits itself to advance funds up to a certain limit in the interim period while negotiations of a term loan are underway but not yet completed.

Interest Rate Structure. There is of course no single rate at which business loans are made, but rather a structure of rates traversing a fairly wide range. The outstanding feature of this structure is that business firms of like characteristics pay very nearly the same rates for loans of similar size and nature in all parts of the country and at banks of different size. This draws attention to the national character of the bank credit market. Bank lending power is apparently fairly well equalized throughout the country, and competitive forces on both the supply and demand sides are active enough to evolve a near-single price for the same credit package.

This is not to say, however, that all business loan rates are at the same level. Quite the contrary, they differ widely according to certain conditions that apply to both borrowers and lenders. The most important influences seem to be size of loan and size of borrower. Other influences

which also explain rate differences are size of bank, kinds of borrowers, location, security pledged, and maturity. All these influences reflect the basic factors of risk and banking costs.

While the rates charged on member bank business loans near the end of 1946 ranged from less than 1 per cent to more than 13 per cent, the bulk of the dollar volume—93 per cent—was made in the narrower range of from 1 to 5 per cent. On the basis of number, four-fifths was made at rates between 3 and 7 per cent. The weighted mean rate was 2.9 per cent, but the one most frequently charged was 6 per cent. It should be borne in mind, however, that the rate level and range has varied widely under different business and money market conditions. Rates were at an all-time low in 1946, and were only about half the level of the 1920's. A firming tendency was underway during 1948 and early 1949.

One of the most important influences bearing on the interest rate is size of loan. The market has developed a pattern in which rates move downward as the size of loan increases. This is true within each size class of borrowers, so that it cannot be said to be a consequence of the fact that large borrowers make the big loans and small borrowers the small ones where risks are greater. The explanation for this relationship in large part lies in the greater banking costs per dollar of small loans and in the more active competition in the making of large loans.

The second major influence on the rate is the size of borrower. Small borrowers pay higher rates for the same size loans as a rule than do large borrowers. For example, near the end of 1946 the average rate paid by borrowers on loans in the \$10,000 to \$25,000 class moved upward steadily by borrower size classes from 2.6 per cent for borrowers with assets of \$5 million or more to 4.7 per cent for those with assets of under \$50,000. This relationship would be expected in view of the lower risk on loans to large established enterprises, and of the greater bargaining power of big business.

The average rate of interest on business loans falls as the size of the lending bank increases. For example, the average rate on the loans of member banks with deposits of under \$2 million was 5.4 per cent near the end of 1946, compared with 2.1 per cent in banks with deposits of \$500 million and over. At first glance this might be attributed to the size of bank. The real explanation, however, is to be found mainly in the two major influences just discussed, *i.e.*, size of loan and size of borrower. In general, the little banks make the small loans to the small borrowers and the big banks make the large loans to the large borrowers. It is true that small banks did charge a given size of borrower somewhat

higher rates than did the large banks. But the rate variation from the smallest to the largest banks was not large for any given size of borrower.

Interest charges also show differences among different kinds of borrowers. Near the end of 1946, sales finance companies paid lower rates than any other type of business. Wholesale trade firms paid less than retail firms of the same size and also less than the average concern in all industries. The highest rates were paid by construction companies, service firms, and small public utilities. In general, however, the notable fact was the close similarity of rates charged borrowers of the same size, irrespective of type of business, rather than the rate differences. Unincorporated businesses paid about 0.3 per cent higher rates than incorporated concerns of the same size, and new businesses paid about $\frac{1}{2}$ per cent more than old established enterprises. This can be explained largely by the risk factor.

Rate variances in different sections of the country have been greatly reduced since the establishment of the Federal Reserve System, which has developed a much greater fluidity of bank lending power. Historically, borrowers of the same size have had to pay more for credit in the newer regions of the West and Southwest than in the older and more established areas of the East and Northeast. The scarcity of credit and the greater element of risk were mainly responsible. But by the end of 1946 the range of average rates in the different Reserve districts was a maximum of 1 per cent for the same size of borrowers, and most differences were less than $\frac{1}{2}$ per cent. The highest rates were charged in the San Francisco and Dallas Reserve districts, and the lowest in the New York, Chicago, St. Louis, and Richmond districts.

The effect of security pledged on loan rates is overshadowed by the size of loan and of borrower, but significant rate differences are nevertheless attributable to this factor. Large- and medium-size businesses borrow at lower average rates on an unsecured basis, except when financial weakness exists. Small companies, however, borrow at lower average rates when security is pledged. Security also enables them to borrow when they could not otherwise do so and to borrow larger amounts. Stocks and bonds are the preferred types of security because of ease of appraisal, low administrative costs, and the relatively minor collection problem in case of default. Rates on equipment loans are generally at higher rates for opposite reasons.

Rates charged also vary with maturity, although again this factor is overshadowed by size of loan and of borrower. Near the end of 1946 the average rates paid by borrowers of the same size on loans with maturity of less than 90 days were about $\frac{1}{2}$ per cent lower than those

on 5- to 10-year loans. The risk element and the liquidity element were primarily responsible. It should also be observed that rate differences associated with maturity were less in the customer loan field than in the open money markets. This is explainable by the heavy premium which lenders have placed on asset liquidity since the early 1930's. Short-term customer loans do not afford so much additional liquidity compared with long-term loans as do short-term open-market securities compared with long-term securities.

Finally, the level of business loan rates shows substantial variations through time as conditions of supply and demand change in the money market. For example, the average rate charged customers in 19 principal cities was above 6 per cent in the fall of 1929 and was as low as 2.09 per cent in December, 1945. In March, 1949, it stood at 2.70 per cent.¹ It is to be noted, however, that customer loan rates respond less quickly to changes in conditions than do open-market rates and that they deviate less widely from their average. In addition, rates in the smaller cities and towns are less responsive than those in the principal cities where nation-wide competition is more active.

Regulation of Commercial Loans. Various regulations upon the lending operations of banks are imposed by Federal and state laws. In general, The National Bank Act prohibits a national bank from lending more than 10 per cent of its capital and surplus to one borrower. This also applies to loans to a bank affiliate with the added restriction that total loans to affiliates may not exceed 20 per cent of the bank's capital and surplus. The 10 per cent rule is designed to enforce a reasonable degree of loan diversification. There are, however, a number of exceptions, the broadest of which is that no limit applies to "bills of exchange drawn in good faith against actually existing values." Since the great body of unsecured customer loans is subject to the limitation, large corporations are often forced to borrow at several banks or to raise funds in the open market.

The interest that may be charged by a national bank is also limited to the rate set by state law, or to 1 per cent above the 90-day rediscount rate in effect at its Reserve bank, whichever is the higher. In the absence of an applicable state law the alternative upper limit is fixed at 7 per cent.

Farm Production Loans. Closely allied to commercial loans are the farm production loans of commercial banks. A recent survey, conducted jointly by the Federal Reserve System and the Federal Deposit Insurance Corporation, has made available new information on farm

¹ *Federal Reserve Bulletin*, June, 1949, p. 700.

loans as of midyear 1947.¹ The most important points brought out by this survey may be summarized as follows:

First, commercial banks were the leading lenders of short-term credit to farmers. Other less important sources are production credit associations sponsored by the Federal government, retail merchants, and individuals. At midyear 1947, insured commercial banks had about 2,185,000 farm production loans outstanding to the amount of \$1.5 billion. The amount exceeded \$2.5 billion at the beginning of 1949.

Second, farm production loans were typically small. About four-fifths of the number and one-third of the amount were under \$1,000. Only 2 per cent of the number but 29 per cent of the amount were for \$5,000 or more.

Third, farm production credit was widely distributed among different types of agriculture. Operators of general farms in which no single source of income provided as much as one-half of total income accounted for 45 per cent of the number and 36 per cent of the amount of these loans. On the basis of amount, livestock loans were next in importance (22 per cent) followed in order by dairy products (15 per cent), cereals (12 per cent), and cotton (7 per cent). The remainder was mostly accounted for by tobacco, truck, fruit, and poultry.

Fourth, the major purposes of borrowing were to meet production and living expenses, and to buy machinery or livestock. These were responsible for one-half and one-third of the number of loans, respectively.

Fifth, two-thirds of the number of these loans was protected by specific security or by endorsement; the remaining one-third was unsecured. In terms of amount, livestock was pledged for one-third of secured loans, and a combination of livestock, crops, or machinery was pledged for another one-third. Other types of security were machinery, endorsement, and crops.

Sixth, farm production loans were as a rule made for short periods. Two-thirds of the number had original maturities of six months or less, and only 4 per cent had maturities of more than one year.

Last, the average interest rate paid by farmers (6.2 per cent in 1947) was somewhat higher than that paid by small business firms. In addition to interest the farmer usually paid for certain costs in connection with his loan, such as legal, recording, and notary fees.

Security Loans. The term "security loans" refers to the subdivision of secured loans in which the security pledged consists of stocks and bonds. In making such loans a bank is usually as much concerned with

¹ Tynan Smith and Philip T. Allen, "Commercial Bank Loans to Farmers," *Federal Reserve Bulletin*, October, 1947, pp. 1216-1227.

the nature, marketability, and value of the collateral as with the borrower's earnings and financial position. This is especially true of non-customer loans made in the open market since loss may be prevented at any time by sale of the securities. It is less true with respect to secured customer loans because of the natural disinclination to sell out a client. Both cases, however, afford a marked contrast to unsecured commercial loans where primary emphasis is placed upon credit analysis.

Demand for Security Loans. The demand for security loans arises in connection with the carrying or trading of investment securities. Three divisions of this demand may be distinguished. First, individuals may borrow part of the purchase price of securities, usually with the intention of subsequently taking up the loan out of income. For the most part, these are regular customer loans. They ordinarily represent from one-half to three-fourths of total security loans. Second, individuals may buy securities on margin through brokers, who in turn use the securities as collateral for "brokers' loans" at the banks.¹ In this case, the individual pays interest to the broker upon the amount of his debit balance. This division represents principally speculative security trading. Last, investment bankers may borrow to carry newly underwritten issues during the period of distribution to investors. They may also borrow at times to trade in securities on their own account. Taken together, the last two divisions account for the total brokers' loans of commercial banks. At the end of 1948, security loans to brokers and dealers of insured commercial banks were \$1,336 million and security loans to others amounted to \$939 million.²

Regulation of Security Loans. The Banking Acts of 1933 and 1935 gave the Board of Governors wide powers over security loans. It may limit the security loans of member banks by districts to a given percentage of capital and surplus, and it may direct any member to refrain from further increase of security loans on penalty of suspension of rediscount privileges. In addition, the Securities Exchange Act of 1934 gave the Board control over the margin requirements for all security loans. This power has been exercised on numerous occasions. In July, 1949, the maximum loan value of securities in effect was 50 per cent of market value.

Movements of Security Loans. One of the striking banking developments of the 1920's was the great rise of security loans. Between 1922 and 1930, such loans of member banks rose from about \$4 billion to \$10.4 billion. The decline in security speculation since the early 1930's

¹ For a fuller discussion of brokers' loans, see Chapter XXXII.

² *Federal Reserve Bulletin*, June, 1949, p. 692.

has been accompanied by a sharp decline in security loans. At the end of 1948 they amounted to \$2.2 billion in member banks. This was about 6 per cent of total loans compared with 41 per cent at the peak in 1930 (see Chart 8, page 238).

Consumer Loans. Consumers borrow to enjoy some article or service before their income would otherwise permit. Such loans may thus be made to purchase as wide a variety of things as may conceivably enter into the consumer's expense budget—ranging from perishable services to durable goods such as refrigerators and automobiles. These loans may be contrasted with business loans in that the latter belong to the producer's economy rather than to that of the final consumer. The producer borrows with the aim of enlarging business profits while the consumer borrows in order to consume *now* rather than later.

In addition to direct consumer loans, the commercial banks indirectly support this field in so far as they lend to retail stores for the purpose of financing accounts and notes receivable, and also in so far as they lend to, or buy open-market securities of, finance companies that deal in instalment credit and accounts receivable.

The personal loan field is one that has been badly neglected in the United States. Before about 1910, wage earners generally were at the mercy of pawnbrokers and loan sharks whenever they were plagued by financial troubles. Interest charges as high as 100 to 400 per cent per annum were not uncommon. Real progress has now been made in stamping out such practices. Under the impetus of studies conducted by the Russell Sage Foundation, the Uniform Small Loan Law has been adopted in most of the states. This law requires licensing of small lenders, and protects the borrower by limiting interest to $3\frac{1}{2}$ per cent per month and by regulating other terms of the loan contract.

A more important factor in protecting the small borrower has been the development of additional loan facilities. These have taken the form of industrial banks, savings and loan associations, credit unions, labor banks, philanthropic loan societies, and—most important of all—personal loan departments of commercial banks.

Since 1924, many banks have established personal loan departments that operate along the same lines as industrial banks. In 1948 there were more than 1,600 such departments in existence. The usual practice is to require the signatures of two comakers on the borrower's promissory note in lieu of collateral, although "no comaker" loans have been growing in favor. The note is then discounted and repayment is made by weekly or monthly instalments over a period of 6 to 12 months. Even though the net cost to the borrower ranges from 6 to

20 per cent per annum, this type of business is sometimes unprofitable. A technique entirely different from that of making business loans is required. Without a carefully administered system of credit investigation and collection, direct losses are bound to be heavy. Expenses per dollar of loans are necessarily high.

The increasing importance of commercial banks in the field of consumer credit is shown in Table 19. The main facts may be summarized as follows:

TABLE 19. CONSUMER CREDIT OUTSTANDING IN SELECTED YEARS, 1929 TO DATE
(In millions of dollars)

End of year	Total consumer credit	Total consumer credit at commercial banks	Instalment credit at commercial banks					Single-payment loans at commercial banks*
			Total instalment credit at commercial banks	Auto-mobile retail	Other retail	Repair and modernization of homes	Personal instalment	
1929	7,628	2,045	45	.....	.....	.....	.....	2,000
1933	3,912	.....	.....	.....	.....	.....	.....	750
1941	9,878	3,250	1,750	.....	.....	.....	.....	1,500
1943	5,315	1,650	550	.....	.....	.....	.....	1,100
1945	6,613	2,142	742	203	100	124	315	1,400
1949†	15,626	6,129	3,629	1,416	711	637	865	2,500

SOURCE: *Federal Reserve Bulletin*, June, 1949, pp. 726-727; March, 1947, pp. 240, 264.

* The amount of single-payment loans is estimated from the total amount of such loans but the error is within 2 per cent.

† End of April, preliminary data.

First, consumer loans of commercial banks were three times larger in 1949 than in 1929. They also grew more rapidly than total consumer credit which just about doubled.

Second, practically all the increase took place in instalment credit loans which were nominal in 1929 but amounted to \$3.6 billion in 1949. Single-payment loans showed little increase mainly because of the effort of banks to extend consumer credit on the safer instalment basis.

Third, instalment credit loans financed a wide variety of consumer needs in 1949, but the most important was the purchase of automobiles. Loans for this purpose were twice as large as for other retail goods combined, which included refrigerators, washing machines, stoves, radios, furniture, and other semidurable household appliances.

Last, attention should be called to the fluctuations in total consumer credit since the peak in 1929. It was halved by the heavy liquidation during the depression, 1930-1933, but by 1941 it reached a new high level. The war years ushered in another period of liquidation, owing mainly to the lack of automobiles and other consumer durables, and to government restrictions on such credit (Regulation W). Since the war, consumer credit has experienced a rapid expansion to an all-time high of \$15.6 billion at the end of April, 1949. This accompanied the swelling output of durable consumer products and the termination of government regulation in November, 1947.¹

Consumer instalment financing is concentrated in a relatively small number of urban banks. Three-fourths of the amount of such loans at midyear 1946 was held by 8 per cent (910) of the banks engaged in such operations. These institutions, all of which had instalment loans of \$200,000 or more, were equipped with specialized departments designed to do a volume business at low unit cost. The remaining one-fourth of the total amount, however, was widely distributed over the country in 10,455 smaller banks.²

In addition to direct financing of the consumer, commercial banks indirectly support the greater part of the remainder of consumer credit by loans to finance companies, department stores, mail-order houses, and other retail units that extend consumer credit in the forms of instalment notes, accounts receivable, and service credit.

Before the war, finance companies held about twice as much consumer instalment paper as the commercial banks, but since the war they have lost ground and hold only about three-fourths as much.³ These companies are of two types, specialized and general. The former handles but one type of paper such as automobile paper and is often a subsidiary to the company that manufactures and sells the product. A good example of this is the General Motors Acceptance Corporation, formed in 1919 and controlled by the General Motors Corporation. The main business of the General Motors Acceptance Corporation is to finance the sale of automobiles or trucks sold by the parent company through its dealers. It takes over the notes signed by purchasers of automobiles and then borrows at commercial banks or in the open market.

¹ After an interval of 10 months, the Board of Governors again applied limited regulations to consumer credit in September, 1948, under an act approved in August. The Board's powers in this field lapsed, however, on June 30, 1949.

² Frieda Baird, "Commercial Bank Activity in Consumer Instalment Financing," *Federal Reserve Bulletin*, March, 1947, pp. 264-269.

³ Standard & Poor's Corporation, *Finance and Small Loan Companies*, April 14,

A general finance company is not limited to financing the sale of one special product and is usually independent of the manufacturer. The largest such company at the end of 1948 was Commercial Investment Trust Financial Corporation with assets of \$886 million.¹

Some conception of the extent of indirect financing by commercial banks in this field is given by the fact that loans to finance companies by member banks in late November, 1946, were \$779 million.² The total amount of instalment sale credit outstanding at that time was about \$1.5 billion, a large part of which was directly held by the banks.

Real Estate Loans. Real estate loans represent funds advanced principally to finance the construction or purchase of houses, farms, and business real estate. Since home financing represents about three-fourths of the total, these loans are predominantly a form of long-term consumer credit. Repayment is usually a slow process, being effected by savings from income. Most of them are secured by a mortgage which enables the lender to take over the property in case the borrower fails to observe the terms of the agreement.

Long-term, unmarketable obligations of this kind have never been regarded as suitable commitments for deposits subject to check. In fact, national banks were prohibited from making real estate loans before 1914. This, however, placed them at a competitive disadvantage with state banks and trust companies, since most state laws permitted such loans. As a consequence, the Federal Reserve Act provided that national banks outside the central reserve cities might make farm mortgage loans for a period of five years and urban realty loans for one year.

Further steps to liberalize the restrictions on real estate loans by national banks have been taken from time to time. The law effective in 1949 sets alternative upper limits on their total at the amount of capital and surplus, or 60 per cent of time deposits, whichever is the higher. These limits are designed to restrict real estate loans narrowly in banks with mainly demand deposits, but at the same time to open the door more widely for institutions with a large proportion of time deposits. Individual loans are limited to 60 per cent of the appraised value of the property and to a maturity not in excess of 10 years, if at least 40 per cent of the principal is to be paid according to an instalment amortization plan within the 10-year period. In the absence of such

¹ Other large independent finance companies were Commercial Credit Company (assets \$598 million), Associates Investment Company (\$235 million), Household Finance Corporation (\$194 million), and Beneficial Industrial Loan Corporation (\$149 million).

² *Federal Reserve Bulletin*, March, 1947, p. 255.

an amortization plan the restrictions are more severe, *viz.*, 50 per cent of appraised value and a maturity not to exceed 5 years. Renewals and extensions are permitted—a fact which gives some flexibility to the undesirably short maturity limits fixed by law. These restrictions on the terms of the individual loan do not apply to real estate loans that are insured under Titles II and VI of the National Housing Act of 1934, or under the Bankhead-Jones Farm Tenant Act.

The growth of mortgage loans insured by the Federal Housing Administration has been rapid since 1934, so that the exception to real estate loan restrictions on national banks has verged on becoming the rule. At the end of 1948, commercial banks held \$2.1 billion of these insured loans, representing about one-fourth of their residential mortgages. This was nearly two-fifths of the total insured mortgages outstanding (\$5.6 billion). The other most important holders were insurance companies, savings banks, and savings and loan associations.¹ Under the FHA plan loans are typically made for as much as 80 to 90 per cent of appraised value and for periods of between 20 and 25 years. These more liberal terms are in theory protected by a systematic amortization schedule for repayment of the principal. In case of default the bank is protected from loss by the Mutual Mortgage Insurance Fund which derives its resources principally from a premium of $\frac{1}{2}$ per cent per annum paid by the mortgagors. In addition its debentures, issued to replace a defaulted mortgage loan, are guaranteed as to both principal and interest by the Federal government. Thus they are safe from the mortgagee's standpoint. This safety, however, is likely to be at the expense of taxpayers during the next period of severe deflation of real estate values in view of the excessive amounts that have been loaned.

A notable feature of insured mortgages is the secondary market which has developed. This imparts a considerable degree of exchange liquidity to them in contrast with other mortgage loans which are notoriously illiquid. During 1946, \$266 million of insured mortgages were resold to 1,807 purchasers. Mortgage companies, acting as correspondents of insurance companies and other large institutional investors, accounted for nearly one-half of the sales.²

Real estate loans of commercial banks have experienced a rapid growth since the early 1920's. At midyear 1921 the amount of such loans of national banks was only \$280 million, or 2.3 per cent of total loans. By the end of 1948 the amount had risen to \$5.5 billion, or nearly one-

¹ *Insured Mortgage Portfolio*, Second Quarter 1949, p. 27.

² *Thirteenth Annual Report of the Federal Housing Administration*, 1946, pp. 31, 56.

fourth of total loans. During the depression years, 1931–1935, real estate loans declined about one-third owing to foreclosures, bank failures, and transfers to two emergency government agencies—the Home Owners Loan Corporation and the Federal Farm Mortgage Corporation. Since that time the amount has grown—slowly until the end of the war, but very rapidly since that time (see Chart 8, page 238).

Classification of Loans by Examiners. A constructive forward step in bank supervision was taken in June, 1938, when Federal and state authorities adopted a uniform policy in classifying and appraising commercial bank assets. Previously there was great diversity in the standards and practices of the fifty-odd separate Federal, state, and territorial authorities. The published statement regarding uniform classification of loans in bank examinations was as follows:

I. Loans or portions thereof the repayment of which appears assured. These loans are not classified in the examination report.

II. Loans or portions thereof which appear to involve a substantial and unreasonable degree of risk to the bank by reason of an unfavorable record or other unsatisfactory characteristics noted in the examiner's comments. There exists in such loans the possibility of future loss to the bank unless they receive the careful and continued attention of the bank's management. No loan is so classified if ultimate repayment seems reasonably assured in view of the sound net worth of the maker or endorser, his earning capacity and character, or the protection of collateral or other security of sound intrinsic value.

III. Loans or portions thereof the ultimate collection of which is doubtful and in which a substantial loss is probable but not yet definitely ascertainable in amount. Loans so classified should receive the vigorous attention of the management with a view of salvaging whatever value may remain.

IV. Loans or portions thereof regarded by the examiner for reasons set forth in his comments as uncollectible and as estimated losses. Amounts so classified should be promptly charged off.

Present practice will be continued under which the totals of II, III, and IV above are included in the recapitulation or summary of examiners' classifications.

Fifty per cent of the total of III above and all of IV above will be deducted in computing the net sound capital of the bank.¹

It is especially to be noted that loans placed in Class IV by examiners must be promptly charged off; also that all of Class IV and one-half of Class III is deducted in computing the net sound capital of a bank. This adjusted capital account is the excess of adjusted asset values over the amount of deposits and other liabilities. In 1947, the adjusted capital account of all insured commercial banks was only 0.25 per cent

¹ *Federal Deposit Insurance Corporation, Annual Report, 1938, p. 73.*

below the book value. With regard to loans, 98.72 per cent was not criticized and 1.28 per cent was classed as substandard.¹

Over-all Loan Policies. While this is not the place to go into the technical aspects of loan administration, it is well to mention a few general principles which should guide loan officers.

First, it is essential that they keep abreast of the broad economic and political scene both in this country and in the rest of the world. What are the chances of war or peace and of the growth or decline of international trade as a consequence of the policies likely to be enforced by the leading nations? In what stage of the cycle is business, and what is the probable level of business activity in the months and years ahead? Risks are greatest at the crest of a boom and least as recovery gets under way. What is the situation in the money market, and what is the probable future course of interest rates? These and other similar broad questions must be carefully considered as a background for determining loan policies as well as those relating to liquidity, solvency, and investments.

Second, the officers should be experts on the economic characteristics of the area in which the bank operates. Is it a growing or a declining area as measured by population and income? Is business well diversified, or is the area dominated by one or a very few industries? What are the cyclical and seasonal features of the area; is business relatively stable during the cycle, or is it subject to wider swings than the country as a whole? The answer to this question has a large bearing on the extent of business risks.

Third, the loan portfolio should be kept as well balanced by types of loan and as well diversified by industries as is possible. The bank in a one-industry area has the greatest problem in this regard. Such an institution should consciously compensate for the lack of diversification of loans in its secondary reserve and investment policies. The amount of loans to one person or enterprise is restricted by law for national banks and in many of the states. But in those states where main responsibility rests on the officers, a definite policy should be set on the maximum size of loan. A good working rule is the long-standing restriction on national banks of 10 per cent of capital and surplus.

Fourth, a policy with regard to the maturity schedule of the loan account should be established, having in mind the stability characteristics of deposits. This schedule should not be set independently of the

¹ *Ibid.*, 1947, p. 126.

maturities of the investment account, but the two should be considered together as they relate to the bank's over-all position.

Fifth, the officers should observe a policy with respect to quality of loans. In general, the quality should be maintained at a high level. But this does not mean that no risks should be assumed. The bank that is unwilling to make loans which on occasion involve a fair degree of risk is not performing its function in the community. A reasonable percentage of loss on loans is a necessary incident to good banking.

Sixth, loan rates should be placed at a fair level in view of current money market conditions. To a very large extent the forces of competition take care of this matter, but this is not always the case, especially in the smaller communities. The officers of a bank that enjoys a semi-monopoly have a social responsibility to keep rates in line with conditions, rather than "to charge what the traffic will bear."

Last, successful loan administration depends on proper organization and on the quality of personnel in the loan department. Without these, there is no chance whatever of applying the foregoing principles.

Review Questions

1. "The volume and character of bank assets are both matters of large economic importance." Support this statement.
2. How may bank loans be differentiated from bank investments?
3. Explain the declining proportion of loans to total earning assets of banks since the 1920's.
4. Interpret Chart 7.
5. Indicate the purposes to which business firms put commercial loans.
6. Interpret Chart 8.
7. What sort of credit analysis do the larger banks make before granting unsecured loans to business firms?
8. What is implied by satisfactory past relations between a bank and its borrowing customer?
9. Summarize the outstanding facts brought out by Table 17.
10. How do you account for the fact that large companies typically borrow on an unsecured basis while small companies borrow for the most part by the pledge of collateral?
11. Summarize the significant facts brought out by Table 18.
12. Differentiate between a warehouse receipt and a trust receipt.
13. Describe the main features of term loans.
14. What factors largely account for the recent growth of term loans?
15. Explain the revolving credit arrangement employed by large city banks.
16. How do you account for "a near-single price for the same credit package" throughout the United States?
17. What is meant by the business loan rate structure?
18. Explain the influence on the loan rate of the following: (a) size of loan, (b) size of borrower, (c) size of bank, (d) kinds of borrowers, (e) location of borrower, (f) collateral security, (g) maturity, and (h) money-market conditions.

19. What effect has the Federal Reserve System had on loan rate variances in different parts of the United States?
20. Why do customer loan rates, especially in the smaller cities and towns, respond less sensitively to changes in financial conditions than do open-market interest rates?
21. Summarize the regulations imposed by law on the lending operations of national banks.
22. Outline the main features of farm production loans.
23. Point out the different divisions of demand for security loans.
24. Discuss (a) the conditions of supply of brokers' loans and (b) the terms of brokers' loans.
25. What powers have the Board of Governors of the Federal Reserve System over security loans?
26. Compare the purposes of consumer loans and business loans.
27. In what ways are small borrowers now protected against excessive charges for credit in contrast with conditions before the First World War?
28. Summarize the main facts with respect to consumer credit brought out by Table 19.
29. Why have real estate loans traditionally been regarded as unsuitable commitments for deposits subject to check?
30. Outline the present legal restrictions on real estate loans of national banks.
31. Discuss the growth of real estate loans insured under the National Housing Act of 1934.
32. Summarize the uniform policy in classifying and appraising commercial bank assets adopted by Federal and state authorities in June, 1938.

Advanced Questions and Problems

1. To what extent in your opinion is a commercial bank obligated to lend in its area in support of economic activities? What undesirable consequences may follow from a too-liberal lending policy? From a too-conservative lending policy?
2. Is a low loss ratio on loans an indication of good or bad bank management? Explain.
3. Is it a real test of liquidity when a large business firm pays off a loan at one bank by borrowing at another bank?
4. Why are negotiable warehouse receipts more acceptable by banks as collateral than nonnegotiable receipts? Order bills of lading than straight bills of lading?
5. Why are trust receipts usually less desirable as collateral than warehouse receipts?
6. Should the individual bank place a limit on the amount of its term loans? Should the banking system as a whole likewise have a limit on such loans? Explain.
7. How do you account for the low level of interest rates in the United States since the early 1930's?
8. In 1949 the Board of Governors sought permanent powers to regulate consumer credit, but Congress refused to extend these powers when they lapsed on June 30. What is your view on this issue?
9. Formulate a set of general principles to guide loan officers of commercial banks.

CHAPTER XVII

BANK LOANS AND INVESTMENTS (*Continued*)

BANK INVESTMENTS

Investments differ from loans, it will be recalled, in that they (1) are salable open-market securities, (2) represent a fractional participation in a large obligation lodged with a trustee, and (3) usually have a longer maturity. They also differ markedly from loans from the viewpoint of bank management. Loans to customers represent one of a bank's primary responsibilities to business and consumers. As a result, the successful operation and growth of a bank depends very largely on the treatment of borrowing customers. The same is not true of investments since a bank feels no responsibility to the borrowers whose securities it purchases in the open market. Investments are therefore regarded as *residual* earning assets. That is, they are purchased with funds which remain after provision has been made for customer loans and liquidity.

Increased Importance. During the 1920's investments were less than one-third of earning assets of all commercial banks, but by mid-year 1949 they constituted nearly two-thirds (see Chart 7, page 236). Their growth, however, has been underway both absolutely and in relation to loans since the turn of the century. The predominance of investments in 1949 is a consequence of war finance superimposed upon Federal deficit borrowing during the depression of the 1930's.

All this means that in a comparatively short period investment has become a major bank management problem. Many banks, unfortunately, have failed to meet this great change with corresponding adjustments within their organizations. The management of a bond portfolio is a most difficult and technical task which should be administered only by men of broad experience, mature judgment, and adequate training. Moreover, every facility to aid analytical work and to provide complete information should be available. Investment errors are so costly that both depositors and stockholders have a right to expect the utmost care from their bank.

The growing importance of bank investments also raises a problem

with respect to the adequacy of bank capital. In contrast with short-term obligations, long-term corporate bonds fluctuate widely in value with changes in the level of interest rates and corporate earnings. For example, between March, 1928, and June, 1932, the average price of high-grade corporate bonds dropped 37 per cent, and by December, 1936, they had risen over 66 per cent from the 1932 low point.¹ In the absence of generous capital funds, such wide swings of bond values represent a definite threat to bank solvency. To be more concrete, the capital, surplus, and undivided profits of all insured commercial banks represented 14 per cent of their security portfolio at the end of 1948. This means that should the value of bonds held by the banks fall by this percentage, their entire capital account would be just sufficient to absorb the loss, without any consideration to losses on loans. The proper size of the bond account can be determined only after making careful estimates of potential depreciation and losses in loans and investments, and after making due allowance for liquidity requirements.

As a matter of principle an increase in the ratio of capital funds should be provided as the proportion of long-term bonds rises. Otherwise, the solvency of the banks becomes seriously endangered. But the actual trend has been in the opposite direction. At the end of 1914 the ratio of the capital funds of member banks to earning assets was 25 per cent; in April, 1949, it was 9.5 per cent. Some progress has been made since the war in enlarging capital funds by retained net profits and the sale of stock. But sound banking requires a materially larger amount of capital in relation to depreciable assets.

Government Regulation. *Legal Background.* Before 1933 there was only one important regulation of the investments of commercial banks in the United States. This was the prohibition of the purchase of corporate stocks, unless specifically authorized, by the National Bank Act and the laws of most of the states, and of real estate or other physical property not definitely utilized in the business. Such assets as a class, owing to their speculative character, were not regarded as appropriate for bank portfolios. Beyond this restriction, however, bank officers were free with minor exception to exercise their own judgment in the purchase of investment securities.

But the disastrous depreciation of the bond accounts of most banks during the depression, leading in many cases to failure, evoked additional regulation of bank investment policy in the Banking Acts of 1933 and 1935. These provisions may be summarized as follows:

¹ As measured by the index of 45 high-grade bonds, Standard & Poor's Corporation.

1. Member banks were required to sever all connections with their security affiliates. Furthermore, no director, officer, or employee of a member bank was permitted at the same time to be connected with any organization underwriting or dealing in investment securities, except under permit from the Board of Governors.

2. Members were prohibited from underwriting new issues of securities. They were also prohibited from dealing in securities with the exception of purchases for their own account under the Comptroller's regulations, and for the account of customers on the latter's specific orders. Exception was also made for obligations of the United States and its political subdivisions and for certain government corporations.

This and the preceding provision were designed to correct the abuses made of affiliates and of underwriting and dealing in securities, particularly in the 1920's. Affiliates were used to divert funds into speculative channels. Underwriting too often resulted in the use of the bank's investment account as a dumping ground for the parts of issues that could not profitably be sold to other investors. Dealing in securities for others as well as underwriting placed the banks in a prejudiced position in advising customers on investment matters.

3. In order to ensure some degree of diversification, a member bank was prohibited from investing more than 10 per cent of its capital and surplus in the securities of one obligor.

4. A member was not to invest more than 15 per cent of capital and surplus in the stock of a corporation organized to carry on a safe-deposit business.

5. Except under special permit a member was not allowed to invest, directly or indirectly, more than the amount of its capital stock in bank premises.

6. The aggregate of loans to, and investments in the securities of, a bank's affiliates was limited to 20 per cent of its capital and surplus.

The foregoing restrictions were imposed by the Banking Act of 1933 with the exception of paragraph 3, which was added by the Act of 1935.

Administrative Regulation. Since early 1936 the administrative authorities have taken steps to set minimum standards of quality for bank investments. These were prescribed by the Comptroller of the Currency for member banks of the Federal Reserve System, but they have importantly influenced the investment policies of nonmember banks as well in view of their specific or general approval by the Federal Deposit Insurance Corporation and the Executive Committee of the National Association of Supervisors of State Banks. The importance of these regulations is so great that it is necessary to present them *verbatim* as amended in June, 1938:

SECTION I

1. An obligation of indebtedness which may be purchased for its own account by a national bank or State member bank of the Federal Reserve System, in order to come within the classification of "investment securities" within the meaning of paragraph Seventh of said Section 5136, must be a marketable obligation, *i.e.*, it must be salable under ordinary circumstances with reasonable promptness at a fair value; and with respect to the particular security, there must be present one or more of the following characteristics:

a. A public distribution of the securities must have been provided for or made in a manner to protect or insure the marketability of the issue; or

b. Other existing securities of the obligor must have such a public distribution as to protect or insure the marketability of the issue under consideration; or

c. In the case of investment securities for which a public distribution as set forth in (*a*) or (*b*) above can not be provided, or so made, and which are issued by established commercial or industrial businesses or enterprises, that can demonstrate the ability to service such securities, the debt evidenced thereby must mature not later than ten years after the date of issuance of the security and must be of such sound value or so secured as reasonably to assure its payment; and such securities must, by their terms, provide for the amortization of the debt evidenced thereby so that at least 75% of the principal will be extinguished by the maturity date by substantial periodic payments: Provided, That no amortization need be required for the period of the first year after the date of issuance of such securities.

2. Where the security is issued under a trust agreement, the agreement must provide for a trustee independent of the obligor, and such trustee must be a bank or trust company.

3. All purchases of investment securities by national and State member banks for their own account must be of securities "in the form of bonds, notes and/or debentures, commonly known as investment securities"; and every transaction which is in fact such a purchase must, regardless of its form, comply with this regulation.

SECTION II

1. Although the bank is permitted to purchase "investment securities" for its own account for purposes of investment under the provisions of R.S. 5136 and this regulation, the bank is not permitted otherwise to participate as a principal in the marketing of securities.

2. The statutory limitation on the amount of the "investment securities" of any one obligor or maker which may be held by the bank, is to be determined on the basis of the par or face value of the securities, and not on their market value.

3. The purchase of "investment securities" in which the investment characteristics are distinctly or predominantly speculative, or the purchase of securities which are in default, either as to principal or interest, is prohibited.

4. Purchase of an investment security at a price exceeding par is prohibited, unless the bank shall:

a. Provide for the regular amortization of the premium paid so that the premium shall be entirely extinguished at or before the maturity of the security and the security (including premium) shall at no intervening date be carried at an amount in excess of that at which the obligor may legally redeem such security; or

b. Set up a reserve account to amortize the premium, said account to be credited periodically with an amount not less than the amount required for amortization under (a) above.

5. Purchase of securities convertible into stock at the option of the issuer is prohibited.

6. Purchase of securities convertible into stock at the option of the holder or with stock purchase warrants attached is prohibited if the price paid for such security is in excess of the investment value of the security itself, considered independently of the stock purchase warrants or conversion feature. If it is apparent that the price paid for an otherwise eligible security fairly reflects the investment value of the security itself and does not include any speculative value based upon the presence of a stock purchase warrant or conversion option the purchase of such a security is not prohibited.¹

There were also two other provisions dealing with the purchase and sale of securities under repurchase agreement, and it was stated that the restrictions did not apply to securities acquired through foreclosure on collateral or in connection with the prevention of loss on any debt previously contracted.

The restriction of predominant importance was the prohibition of the purchase of low-grade obligations. This was in recognition of the fact that one of the major causes of the failure of about one-third of the banks in the period 1930-1933 was the acquisition of speculative assets. Studies showed that the bonds which caused trouble were almost entirely those below the three highest quality grades. The worst offenders were convertible issues, and those brought out under the boom conditions beginning in 1928.² This restriction has been a very difficult one to administer. In general, the method has been to require that eligible securities be in the four highest grades of the leading security rating services,³ or that the bank assume the burden of proof that a nonrated security, or one having a lower rating, is above the minimum quality standard.

It is also to be noted that emphasis was placed on quality rather than

¹ *Federal Reserve Bulletin*, July, 1938, pp. 565-566.

² See Commission on Banking Law and Practice of the Association of Reserve City Bankers, "Summary of Arguments on Title II of the Banking Bill of 1935," May, 1935.

³ Fitch Securities Service; Moody's Investors Service; Standard & Poor's Corporation.

on marketability, since securities not enjoying a public distribution can be purchased within fairly liberal limits.

As in the case of loans, the banking authorities, including the Federal Deposit Insurance Corporation and the Executive Committee of the National Association of Supervisors of State Banks, adopted a uniform basis for appraisal of bonds in bank examinations in June, 1938. Their public statement at that time was as follows:

THE APPRAISAL OF BONDS IN BANK EXAMINATIONS

Neither appreciation nor depreciation in Group I securities will be shown in the report. Neither will be taken into account in figuring net sound capital of the bank.

Group I securities are marketable obligations in which investment characteristics are not distinctly or predominantly speculative. This group includes general market obligations in the four highest grades and unrated securities of equivalent value.

The securities in Group II will be valued at the average market price for eighteen months just preceding examinations and fifty per cent of the net depreciation will be deducted in computing the net sound capital.

Group II securities are those in which the investment characteristics are distinctly or predominantly speculative. This group includes general market obligations in grades below the four highest, and unrated securities of equivalent value.

Present practice will be continued under which net depreciation in the securities in Group III and Group IV are classified as loss.

Group III securities: Securities in default.

Group IV securities: Stocks.

Present practice will be continued under which premiums on securities purchased at a premium must be amortized.

Present practice of listing all securities and showing their book value will be continued.

THE TREATMENT OF SECURITIES PROFITS IN BANK EXAMINATIONS

Until losses have been written off and adequate reserves established, the use of profits from the sale of securities for any purpose other than those, will not be approved.

Present practice will be continued under which estimated losses must be charged off.

Present practice will be continued under which the establishment and maintenance of adequate reserves, including reserves against the securities account, are encouraged.

Present practice will be continued under which speculation in securities is criticized and penalized.¹

¹ *Annual Report of the Federal Deposit Insurance Corporation, 1938, p. 75.*

It is significant in this connection that 99.7 per cent of the investments of insured commercial banks were not criticized in 1947, leaving only 0.3 per cent in the substandard class.¹ This is an element of strength, compensating in some degree for the decline in recent years of the ratio of capital accounts to total assets—from 13.2 per cent at the end of 1934 to 6.7 per cent at the end of 1948.

In general, the conclusion may be drawn that the systematic and uniform procedure in appraisal and classification of assets by bank supervisory authorities since 1938, combined with their encouragement to hold only quality assets, has made a healthy contribution to the soundness of the banking system.

The Investment Portfolio. A fairly complete picture of the composition of the investment portfolio of insured commercial banks is given in Table 20. At the end of 1948, United States securities predominated with 87 per cent of the total; other bonds represented 12 per cent, and stocks only 0.4 per cent. The portfolio almost quadrupled between 1934 and 1948 owing mainly to the acquisition of Federal securities. While the subdivisions of "other bonds" are not available for 1948, the wide diversity of these holdings is indicated by the figures for 1934. The securities of states and political subdivisions were the most important single type, followed in importance by railroads, public utilities, and industrial corporations.

While the maturity schedule for the entire bond account is not given, it is evident that it was heavily weighted with short-term obligations. Holdings of United States securities alone with maturity of five years or less were 46.3 per cent of total investments. Hence, if the "other bonds" of short maturity were added, more than one-half of investments was in the liquid category usually referred to as secondary reserve.

The high quality of investment holdings is also evident from the predominance of United States securities combined with the fact that the FDIC did not criticize 97.1 per cent of other securities in 1947 and classed only 2.9 per cent as substandard. For the investment account as a whole, only 0.3 per cent was classed as substandard.²

This is not the place to enter into a discussion of the technique of managing the investment account, but it is desirable to summarize the guiding principles.

First, the proper size of the account can be determined only after determination of the probable *liquidity* needs and the desired *solvency*

¹ *Ibid.*, 1947, p. 126.

² *Ibid.*

TABLE 20. INVESTMENTS OF ALL INSURED COMMERCIAL BANKS AT THE
END OF 1934 AND 1948
(In millions of dollars)

Type of security	1934	1948
U.S. government securities:		
Bills	1,032	2,822
Certificates of indebtedness		10,068
Notes	4,402	3,395
Nonmarketable bonds	5,069	1,986
Bonds—maturity 5 years or less		19,374
Bonds—maturity 5 to 10 years		15,114
Bonds—maturity 10 to 20 years		6,581
Bonds—maturity over 20 years	1,210	2,059
Guaranteed obligations		8
Total U.S. bonds	6,279	45,122
Total U.S. government securities	11,713	61,407
Other bonds:		
Home Owners' Loan Corporation	137	*
Federal Land Banks and Joint Stock Land Banks	207	*
Federal Intermediate Credit Banks	120	*
States and political subdivisions	2,410	5,511
Railroads	981	*
Public utilities	909	*
Real estate corporations	102	*
Other domestic corporations	662	*
Foreign central governments	149	*
Foreign political subdivisions	56	*
Other foreign securities	91	*
Total other bonds	5,822	8,625
Stocks:		
Federal Reserve banks	147	201
Real estate corporations	71	
Banking corporations	93	106
Other domestic corporations	326	
Total stocks	637	307
Total other bonds and stocks	6,459	8,932
Total investments	18,172	70,339

SOURCE: Reports of Federal Deposit Insurance Corporation.

* Not available.

protection. The latter depends in turn on the amount of the capital account, the quality of assets, and the maturity schedule.

Second, a reasonable degree of *diversification* of investment holdings is desirable, so that a crippling loss will not be sustained if one security depreciates and the bank will enjoy the greater safety of broadly based holdings. The widest possible diversification is of course afforded by United States securities. However, diversification should not be viewed from the investment account alone, but rather from the standpoint of all earning assets. For example, a bank located in a community dominated by one industry should seek over-all diversification through its investment account.

Third, a policy of relatively even distribution of maturities is the wisest policy for most banks. This permits them to realize the average yield of the money market without speculating on the future course of interest rates.

Fourth, a high standard of quality should be maintained. This is now enforced in large part by the supervisory authorities. But there remains a large responsibility for quality with the directors acting through the management. It would be legally possible, for example, for a bank to hold only securities of the fourth-quality grade. Moreover, there is a wide range of "quality at a price" within each of the four highest ratings. This being the case, careful analyses of the general economic and political situation, of the bond market, of industries, and of issuers are essential in order to exercise good judgment in selection of particular securities.

Fifth, a policy of continuous review of holdings is highly important. This is a dynamic—even an atomic—age, and investments have no immunity to the changes that are ever taking place. The failure to recognize this fact has been one of the most serious investment offenses in the past, especially of the smaller banks.

Last, the foregoing principles should be implemented by the provision of proper organization and of adequate expert personnel. Large banks can usually best perform the investment function for themselves. But small banks are seldom equipped to do so, and should therefore arrange for able investment counsel.

Cyclical Movements of Investments. In view of the residual nature of bank investments their amount varies widely during the course of the business cycle. Banks ordinarily take care of customer loan requirements first, and then commit any remaining surplus reserves to open-market securities. From this it follows that investments usually move inversely to loans both during the late stage of a business boom and

during a depression, except for the panic phase. Customer demands for loans typically expand during a boom until they can be met only by the sale of investments or by borrowing at the Reserve banks. Most banks follow the first method in part at least, since there is a general reluctance to incur indebtedness. In addition, rates on security loans frequently become more attractive in such periods than yields on bonds. The inverse movement of investments and loans during 1928 and 1929 furnishes a good illustration of the tendency (see Chart 7, page 236).

When a depression develops, the demand for customer loans declines with the result that surplus reserves accumulate. Unless the risk is too great, these nonearning reserves are converted into securities which yield a return. Moreover, if the depression is prolonged and severe, the banks are most likely to be called upon to finance a large deficit in the government budget. Taken together, these influences lead to an increase of investments while loan liquidation is still in progress. If a panic phase develops, however, the banks may be forced to sell bonds in order to meet currency hoarding demands. The period 1930–1935 affords an excellent example of the operation of all these influences.

During the recovery stage of the business cycle, however, both investments and loans ordinarily expand until the slack in bank reserves is taken up. Usually this point is not reached until prosperity has reached a boom stage, so that the period of concomitant expansion persists for several years. As an illustration, the period 1922–1928 may be cited.

As a general rule, the banks have done a poor job of gauging the cycles of bond prices. They have tended to buy whenever surplus reserves have accumulated. This has ordinarily been a period, such as 1935–1936, marked by low interest rates and high bond prices. They have tended to sell in the boom phase of the cycle in order to take care of mounting customer loan demands and to take advantage of attractive rates on loans. This has usually been a period of high interest rates and relatively low high-grade bond prices. Thus, bonds have quite generally been bought at high prices and sold a few years later at lower prices.

MULTIPLE EXPANSION AND CONTRACTION OF BANK CREDIT

An exceedingly important aspect of loans and investments is their multiple expansion and contraction as determined mainly by the primary reserve position of commercial banks. This question has great practical significance from the standpoints of bank management, monetary control by government authorities, and many problems of over-all

economic policy. It is therefore necessary to analyze this question in some detail.

Assume One Great Bank. The analysis may be clarified if we start with the assumption that only one great commercial bank, The Consolidated Bank, with thousands of branches throughout the country is in existence. Let us also assume that this bank is required by law to keep 20 per cent of its deposits in the form of a balance at the Federal Reserve bank and that at the moment the bank's reserve is sufficient to meet legal requirements, and with \$100 to spare. Under these circumstances, how great an expansion of loans, investments, and deposits may be made on the basis of the \$100 of excess reserve?

The answer is that loans and investments may be increased by \$500¹ and derivative deposits by the same amount before the new reserve is entirely put to work. Further expansion would drive the reserve ratio below the 20 per cent minimum. All this assumes, of course, that reasonably attractive loans and investments are to be had, that no change in currency demand occurs, and that there is no occasion to change the amount of vault cash. Thus, given loan and investment opportunities, the expansion limit of the Consolidated Bank would be set by the necessity from law or experience of maintaining a safe amount of primary reserve.

One Commercial Bank of the System. The position of one commercial bank, Bank A, as a member of the system of some 14,000 banks is quite different, however, from that of the Consolidated. Again assuming a 20 per cent reserve, Bank A would seldom be safe in expanding its loans and investments beyond the amount of anticipated excess reserve. That is, on the basis of \$100 it would be able to add only about \$100 to earning assets. The reason for this is the fact that derivative deposits are largely or entirely checked away and deposited in other banks as borrowing customers pay debts which in the first place provided the need for loans. Thus, in a few days Bank A would have to be prepared to meet an adverse balance of about \$100 as the checks came back for collection. Settlement of these claims would use up the surplus reserve. Obviously, an expansion of earning assets by more than \$100 under these circumstances would draw the reserve below the legal minimum, and hence would occasion either borrowing or the contraction of other earning assets.

It is true that a few of the check payments might be made to other depositors of Bank A. In this case, settlement would be made by a mere bank transfer from one deposit account to another without the

¹ $10\frac{1}{2}\% \times \$100$.

loss of reserve, so that the bank might still retain, say \$10 of surplus reserve. But few banks in this country could definitely count on such a result, even though it might occur from time to time. Oftentimes also, this would be only an intermediate step in the loss of reserve. There would be no assurance that the depositors to whom the bank shifted funds would leave their accounts undisturbed. The common practice, therefore, of the individual bank in this country is to invest from day to day not more than its anticipated surplus reserve. It might of course extend customer loans beyond that point and willingly face the necessity of meeting a reserve deficit by borrowing at the Federal Reserve bank.

The objection may be raised that if all banks are expanding at the same rate, the individual bank tends to gain as much reserve from the expansion of *other* banks as it loses from its own addition to earning assets. Under these conditions, it is argued, a bank is safe in expanding earning assets several times its initial surplus reserve. This would be true if the individual bank could depend on gaining day by day its proportionate share of new reserves released by the expansion of other banks. But such is not the case. Hence the safe policy is to delay expansion until surplus reserve is definitely in sight.

The System of Commercial Banks. All the commercial banks as a group, in contrast to the individual bank, occupy the same position as the Consolidated Bank dealt with under the first assumption. That is, a multiple expansion may be built upon a given increment of reserve, and the necessity of maintaining a certain proportion of reserves sets the limit of expansion. But the question arises: If each individual bank can increase its earning assets only by about the amount of its surplus reserve, how can the whole group acting together produce an expansion several times the surplus reserve?

This seeming dilemma resolves itself when one reflects that the factor which limits individual bank expansion, the dollar-for-dollar loss of reserve, does not operate with respect to the whole group.¹ Other banks gain the reserve that is checked away from the individual bank, and they in turn may proceed to lend or invest whatever surplus accrues to them.

To illustrate the process, let us assume that Bank A holds \$100 excess reserve instead of the Consolidated Bank. It lends and invests \$100 and shortly loses its surplus reserve. But the \$100 is deposited in several other banks which we may designate the B group. The B's are now in position to expand assets by \$80, which they do, and straightway

¹ International banking relations are disregarded for the moment.

lose their surplus reserve to the C group. The C's may now lend and invest \$64 with a corresponding loss of reserve to the D group. And so on, until Bank A's original surplus reserve of \$100 supports \$500 of added earning assets and an identical amount of derivative deposits in the whole system. In the process, of course, the \$100 reserve becomes minutely subdivided and widely distributed over the country, so that an expansion that begins with a bank in Seattle may soon be transmitted to Miami and Boston.

The point should be emphasized that the degree of bank expansion, given investment opportunities, depends upon the reserve ratio which is made effective by law or by banking policy. In the foregoing illustration, the necessity of a 10 per cent reserve would permit an increase of loans and investments of \$1,000, and a 50 per cent reserve would provide the basis for an expansion of only \$200.

The multiple contraction process works in precisely the opposite manner. If Bank A has a legal reserve deficiency of \$100, earning assets of the banking system would have to be contracted by \$500 and deposits by the same amount. In practice, the harshness of the contraction process is ordinarily cushioned by borrowing at the Reserve banks or by easy-money Reserve policies. For example, when currency demands rise by some \$600 million from September to the end of the year, a credit contraction is not enforced since Reserve bank credit offsets the currency drain, and the amount of member bank reserves remains about the same. This is not always the case, however, as is testified by the precipitous liquidation of bank assets and deposits during the last half of 1931. Reserve bank credit only replaced in part the heavy drain on bank reserves caused by unprecedented gold exports and currency hoarding. As a consequence, banks were forced to call loans heavily and to sacrifice bonds in a declining market.

Thus, for the banking system as a whole, the expansion of deposits occurs mainly as a consequence of the expansion of loans and investments. But the individual bank is not in position to build up its own deposits appreciably by increasing its loans and investments, since deposits and reserves are lost to other banks in an amount roughly equal to the expansion. If the expansion relay race is to be run, the other banks must grasp the baton and finish their respective laps.

It is well to call attention here also to the analogy between the position of the banks of a particular city or region and that of an individual bank. If the banks of Chicago, for example, should expand loans while banks elsewhere were keeping earning assets at the same level, the Chicago banks would lose reserves and a large part of the newly created deposits.

This would happen as the checks drawn to pay out-of-city debts returned for settlement. Chicago banks as a unit, however, would not be likely to lose as large a part of the new deposits and of their original excess reserves as would an individual Chicago bank that undertook loan expansion by itself. The reason for this is that part of the checks drawn would be deposited in other Chicago banks, so that to this extent reserves would not be drained away. Thus, the Chicago banks as a group are more nearly in the position of the individual bank than of the banking system with respect to credit expansion; yet to a modified degree they are in the position of the system. The larger the region, the more nearly its banks as a unit assume the features of the system; the smaller the region, the more nearly its banks occupy the position of the individual bank.

This same idea applies to the international field, especially under conditions of the gold standard before the First World War. If banks in the United States should expand loans and investments while banks in other gold-standard countries were standing pat, the United States would tend to lose a part of its gold reserves. Part of the new deposits would be used for increased purchases abroad. Also, the new money purchasing power would tend to raise domestic prices relative to foreign prices. Both of these forces would make for an unfavorable balance of payments for the United States, and hence for a loss of gold.

Under conditions of independent monetary standards the adjustment would work out mainly through a decline in the value of the dollar in terms of foreign monetary units, *i.e.*, the dollar price of foreign exchange would tend to rise. This development might be temporarily staved off by foreign exchange control, import quotas, and other regulatory measures, but would assert itself under free exchange markets.

The Federal Reserve Banks. Up to this point the Federal Reserve banks have not been included in the credit expansion and contraction problem. But as a matter of fact the Federal Reserve System very greatly increased the potential expansion of credit in two ways. First, member bank reserve requirements were substantially lowered; and second, ultimate reserves were pooled by the Reserve banks, and the legal reserves of member banks then took the form of deposit liabilities of the Reserve banks.

For this reason it is important to examine the limits of potential credit expansion under the Reserve System as set by minimum legal reserves. This can be done most simply by calculating the number of member bank deposit dollars that may be supported by \$1 of gold-certificate reserve money held by the Reserve banks. Since the latter

must keep a reserve of 25 per cent back of their deposits, the dollar would support \$4 of member bank legal reserves. Then assuming a 10 per cent member bank legal reserve, the expansion of demand deposits may amount to \$40. This may be compared with an expansion limit of six- or sevenfold by reserve city banks under the old national banking system.

Under the 20 per cent average maximum legal-reserve requirement which may be applied by the Board the demand deposit expansion limit would be reduced from \$40 to \$20.¹ The amount for any intermediate legal reserve percentage would fall somewhere between these two extremes.

An entirely different result is realized if the expansion occurs in Federal Reserve notes instead of deposits. A gold-certificate reserve of 25 per cent must be held against notes, so that only \$4 of notes may be supported by a \$1 gold certificate lodged with the Reserve banks. This is the end of the matter for two reasons: (1) the notes do not qualify as legal reserve for the member banks; (2), even if they did so qualify, it is very unlikely that the members would greatly enlarge their proportion of vault cash. Federal Reserve notes are usually withdrawn by members only in response to an enlarged public demand for currency. The notes merely pass through the members' hands into those of the public.

Thus, in any analysis of potential expansion at a given time the first step is to determine whether the expansion is most likely to occur in the form of notes or deposits; or if in both forms, what is the probable proportion between them. On the average, about \$1 of additional currency is demanded when deposit money increases \$4. If the combined expansion should occur in this ratio, the \$1 gold certificate in the Reserve banks would support \$14.29 of deposits and Federal Reserve notes in combination, assuming a 10 per cent reserve requirement on member bank demand deposits.² Under the average legal reserve maximum of 20 per cent against member bank demand deposits the potential combined expansion would be reduced to \$11.11.

More concretely, this means that the \$24.3 billion of monetary gold in the United States in May, 1949, would support \$347 billion combined

¹ $10\% \times \$4$.

² Calculating on the basis of the 4 to 1 ratio itself, the \$4 of deposits would require gold-certificate reserves of 10 cents and the \$1 note would require 25 cents—a total gold-certificate reserve of 35 cents to support the combined expansion of \$5. A reserve of \$1 would therefore support combined expansion in this ratio to the amount of \$14.29; *i.e.*, $(\$5/.35)$.

expansion under the assumption of a 10 per cent member bank reserve ($\$14.29 \times 24.3$), and \$270 billion under the assumption of a 20 per cent member bank reserve ($\$11.11 \times 24.3$). This compares with a total payment money stock (currency plus adjusted demand deposits) of about \$110 billion.

This average ratio of 4 to 1 between deposit money and currency, however, has significance only for long periods. Like most averages, it is not very representative of the important details on which it is based. In 1949, the ratio between deposit money and currency was 3.4 to 1, while in the 1920's it reached 6 to 1. Again, between February, 1931, and February, 1933, deposit money declined 28 per cent while currency rose 56 per cent. Thus, although there is definitely a long-run tendency for deposits and currency to expand and contract together, their shorter variations are in large part independent. If it is desired, therefore, to estimate the potential limits of credit expansion, it is necessary to analyze each situation by itself in order to determine the probable demand for both deposit money and currency in the period that lies ahead.

A word of caution also needs to be interjected at this point with regard to the use of potential limits of credit expansion in monetary analysis. It is useful only in visualizing the potentialities under the monetary laws and the conditions that exist at a given time. The war period in most nations illustrates all too well what slender reeds are existing laws and regulations. One of the early steps in war finance has usually been a break with the limitations imposed by the gold standard. After that the sky becomes the limit, and whether the pilots of the inflationary plane keep land in sight or pierce the stratosphere becomes a matter of government policy.

The mistake is also made of treating some figure of potential credit expansion as if it were in fact bound to be realized in the not distant future, with a consequent violent rise in prices. One should not, however, jump to such a conclusion without first weighing the force of at least three possible checks to expansion and inflation.

In the first place, there must be available to the banks opportunities to lend and invest their reserves. We learned during the depression of the 1930's that the commercial banks may hold large excess reserves for many years. It is true, however, that the quest for profits provides a strong incentive to expand.

In the second place, if the time in question is one of large unemployment and unused productive capacity, credit expansion will first become

effective mainly in enlarging output, rather than in a sharp rise of prices. The danger of a precipitous increase of prices is present only when shortages of labor, materials, and other things emerge under war or peacetime boom conditions. Then demand exceeds supply as the inflated money purchasing power of business and consumers is offered for a limited supply of goods and services.

In the third place, the stock of money may be materially expanded without a rise of the price level if the velocity of money declines correspondingly. One dollar that is used to pay thirty dollars of debts during the year has the same influence on prices as two dollars that have a velocity of only fifteen, and hence are used to discharge the same amount of debt. The fact that the velocity of money in 1948 was roughly half as great as during the 1920's was the main reason why the postwar price inflation was not of the runaway variety up to that time.

Lastly, monetary expansion is subject to wide powers of control by the government acting through changes in laws and in the administration of laws by the Treasury, the Federal Reserve System, and other instrumentalities. There is usually adequate power to curb an incipient expansion, but there is less often the political courage to do so. What happens to the value of the dollar is therefore very largely a question of government policy.

Review Questions

1. Why are bank investments often termed residual assets?
2. Discuss the relation of the growth of bank investments to the adequacy of capital funds.
3. Summarize the main provisions of the Banking Acts of 1933 and 1935 relating to regulation of bank investments.
4. Outline the investment regulations of the Comptroller of the Currency and the Federal Deposit Insurance Corporation as amended in June, 1938.
5. State the uniform basis for appraisal of bonds in bank examinations adopted in June, 1938, by national and state banking authorities.
6. Indicate the composition of the investment portfolio of commercial banks at the end of 1948, as given in Table 20. What were the principal changes between 1934 and 1948?
7. Formulate a set of guiding principles for the investment officers of a commercial bank.
8. Explain the changes in commercial bank investments which take place during the different stages of the business cycle.
9. Why do banks tend to buy bonds at high prices and sell them at lower prices?
10. Contrast the power of the Consolidated Bank (only bank in the country) to expand its loans and investments with that of Bank A (one of 14,000 banks) on the basis of \$100 of excess legal reserve.
11. Illustrate the process by which the system of commercial banks, working

together, may achieve a multiple expansion of bank credit even though the individual bank may lend and invest no more than the amount of excess reserve in sight from day to day.

12. What factor sets the limit of commercial bank expansion on the supply side?

13. Illustrate the multiple contraction process.

14. Why may a calculation of potential limits of bank-credit expansion at times prove to be a gross understatement?

Advanced Questions and Problems

1. Is the growth of bank investments both absolutely and in relation to loans entirely a consequence of war finance, so that loans may be expected to regain their former status if peace can be realized?

2. Outline a method by which the officers of a commercial bank may determine the proper size of the bond account.

3. Look up and define the different bond ratings given by one of the leading rating services.

4. What objections may be raised to the definition of Group I securities by the government authorities by reference to the leading private security rating services? Are these objections of sufficient importance in your opinion to justify abandonment of this method?

5. Draw an analogy between the position of the banks of a particular city or region and that of an individual bank with regard to the expansion and contraction of bank credit. Extend this same idea to the international field under conditions of the gold standard.

6. Calculate the expansion limit of member bank deposits on the basis of \$23 billion of gold-certificate reserves in the Federal Reserve banks, assuming a legal reserve requirement against net demand deposits of (a) 12 per cent and (b) 18 per cent.

7. Calculate the expansion limit of Federal Reserve notes on the basis of \$23 billion of gold-certificate reserves in the Federal Reserve banks.

8. Calculate the theoretical expansion limit of member bank deposits and Federal Reserve notes combined in a ratio of 5 to 1, respectively, on the basis of \$23 billion of gold-certificate reserves in the Federal Reserve banks, and assuming a 15 per cent legal reserve requirement against net demand deposits of member banks.

9. Develop the reasons on both the supply and demand sides why a theoretical potential of monetary expansion may never in fact result in higher commodity prices.

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CHAPTER XVIII

LIQUIDITY AND THE STOCK OF MONEY

The term "money" has, unfortunately, had no very definite meaning in economic usage; it has run the gamut between narrow and broad definitions. During the nineteenth century and until the First World War, most writers in the field used the term narrowly to include only coin and paper currency which was generally acceptable in the payment of debts. After the First World War, the scope of the term was frequently extended to include demand deposits of commercial banks (checking accounts). This was a belated recognition of the predominant position which the bank check had come to occupy as a means of payment in all English-speaking countries. The old usage treated demand deposits as a money substitute—something which economized the use of currency. This usage finally gave way to one more in keeping with the actual facts.

The disposition to broaden the concept of money has not stopped, however, with its extension to demand deposits. Since the mid-1920's, monetary writers have been increasingly inclined to go at least one step further and to include time deposits as well. Some have gone even further, to include commercial bank lines of credit (or overdraft facilities), short-term Treasury obligations, and other highly liquid claims. Indeed, there seems to be no logical stopping place on this highway short of the inclusion of all liquid claims on wealth.

CLASSIFICATION OF CLAIMS ON WEALTH

Before attempting to decide upon the most workable boundary for the term money, there is need to consider the whole family of claims on wealth to which money belongs. The various types of such claims, arranged roughly in the order of liquidity, are listed below:

1. Liquid claims:
 - a. Standard money
 - b. Other (nonstandard) currency
 - c. Demand deposits of commercial banks (deposit money)
 - d. Time deposits of commercial and savings banks
 - e. Postal-savings deposits
 - f. United States savings bonds

- g.* Shares of savings and loan associations
- h.* Credit balances in accounts with brokerage houses
- i.* Cash surrender value (or loan value) of life insurance policies
- j.* U.S. government securities maturing within three months
- k.* Other highly liquid short-term securities, including bills of exchange, bankers' acceptances, open-market commercial paper, call loans, state and municipal obligations, and corporate obligations
- l.* U.S. government securities maturing in more than three months but in less than five years
- m.* Commercial bank loans rediscountable at the Federal reserve banks, and collectible within three months
- 2. Claims having considerable liquidity:
 - a.* Book credit (accounts receivable)
 - b.* U.S. government bonds (marketable issues with maturity of five or more years)
 - c.* State, municipal, Federal agency, and corporate bonds (highly marketable issues)
 - d.* Insured real estate mortgage loans (marketable)
 - e.* Stocks of corporations (highly marketable issues)
 - f.* Loans of commercial banks which fail to qualify under (*m*) above
- 3. Nonliquid claims:
 - a.* State, municipal, and corporate bonds (not readily marketable)
 - b.* Stocks of corporations (not readily marketable)
 - c.* Real estate mortgage and other long-term loans (nonmarketable)

It should be observed that these claims range from standard money, which is a claim of the highest order of liquidity, to real estate mortgage loans which possess the least liquidity. It should also be noticed that the degree of liquidity changes by very small gradations and frequently overlaps the boundaries of the categories listed. Liquid claims (Class 1) include currency and other claims which can be readily converted at par to standard money or its equivalent within a short period of time, say three months. Thus, they must measure up to the two criteria: price stability and short-time convertibility. Class 2 claims have a certain measure of liquidity by virtue of repayment in the case of bank loans and marketability in the case of bonds or stocks. But they fail to qualify as liquid claims either because they cannot be converted in time or because there is no assurance that they can be converted without loss of principal. Class 3 claims can be collected only over a long period of time, or possess little or no marketability in the case of securities.

WEALTH UNDERLYING THE STRUCTURE OF CLAIMS

Underlying the complicated structure of claims just described stands an even more complicated structure of real wealth consisting of many thousands of valuable material things of various qualities, sizes, and designs. Wealth may be classified broadly as follows:

- I. Commodities (movable wealth):
 - A. Raw materials
 - 1. Mineral, such as iron ore
 - 2. Agricultural, such as raw cotton
 - 3. Forest, such as standing timber
 - B. Intermediate materials and products
 - 1. Pig iron, steel ingots, blooms, billets, bars, shapes, wire rods, pipe, and sheets
 - 2. Cotton yarn, woven cloth, knitted cloth, sheetings, gray goods, print cloth, and fine goods
 - 3. Lumber of various types—flooring, joists, siding, and shingles
 - C. Finished products
 - 1. Consumers' goods
 - a. Nondurable, *e.g.*, food, clothing, tobacco, and liquor
 - b. Durable, *e.g.*, automobiles, radios, and refrigerators
 - 2. Producers' goods
 - a. Nondurable, *e.g.*, fuel, and office supplies
 - b. Durable, *e.g.*, machine tools, and other equipment
- II. Real estate:
 - A. Land
 - 1. Agricultural
 - 2. Building site
 - 3. Public
 - B. Land improvements
 - 1. Houses
 - 2. Industrial and commercial buildings
 - 3. Fences, drains, irrigation facilities
 - 4. Highways, streets, railways, bridges
 - 5. Public service plants and facilities
 - 6. Miscellaneous

While such a skeleton classification can give no more than a fragmentary idea of the national wealth, it does provide a foundation on which to build. For the present purpose, it is important to notice that the first subdivision of wealth (commodities) is composed mainly of liquid wealth, while the second subdivision (real estate) is made up largely of nonliquid wealth. Most commodities are approaching a market where they will be sold within a few months or a year. Finished products are sold for direct consumption by consumers or for use by producers in further productive processes. Raw materials and intermediate products are bought and sold by middlemen and producers as they flow toward their intended use by industry. Organized exchanges facilitate trading in many of the standardized raw materials, such as the grains and cotton. Real estate, on the other hand, is consumed, if at all, over very long periods of time, and as a rule is not readily marketable. The same can be said of producers' durable goods after their production and sale to business firms.

The basic liquidity of wealth thus depends on the normal flow of income payments to consumers who provide a continuous market for consumption goods. This sustains the round of economic activities beginning with the production of raw materials, progressing through the various intermediate stages, and ending in the completion and sale of the finished product for consumption or use. In addition to basic liquidity, the owner of wealth also enjoys a measure of *exchange* liquidity as a consequence of the existence of organized commodity exchanges and other marketing facilities. He can by this means often convert wealth to money at once, rather than wait for the slower processes of basic liquidity. Of course, the degree of exchange liquidity varies greatly among different types of wealth, and also varies with market conditions. It should be observed, finally, that both basic and exchange liquidity depend on the normal flow of income receipts and outlays. When these fundamental processes are seriously restricted, all assets become "frozen."

LIQUIDITY OF CLAIMS TO WEALTH

The basic liquidity of claims to wealth rests on the liquidity of the underlying wealth itself. This in turn depends on the normal flow of income received and spent by consumers. Loans, bonds, book credit, and other money claims can be repaid only out of income over a period of time. Should income be completely, or even seriously, impaired, these money claims would one by one be defaulted.

In banking theory the short-term, "self-liquidating" loan rests on the basic liquidity of the underlying wealth. It is expected that these loans will be liquidated at maturity in the course of the normal flow of economic activities. During the nineteenth century and until after the First World War, this type of earning asset was generally regarded to be the only proper one for commercial banks. As we have already seen, this theory was one of the foundation stones of the original Federal Reserve Act in 1913.

In addition to repayment from income, there are four other types of arrangement which provide liquidity for claims to wealth: (1) redemption facilities, (2) resale in the open market, (3) contracts to purchase, and (4) rediscount arrangements.

1. The liquidity of claims a to i in the list (page 279) depends on contractual agreements by the government, banks, or other financial institutions to redeem the claims in standard money, or its equivalent. All are redeemable on demand by contract with the exception of time deposits of banks, postal-savings deposits, and shares of savings and

loan associations. In practice, these institutions also redeem their obligations on demand. Claims *c* to *i* are of the second degree, *i.e.*, they are claims based on underlying claims which, in turn, rest on real income or wealth. For example, demand deposits of commercial banks are liabilities of these institutions backed by assets which consist largely of loans and investments. The other principal bank asset, reserve money, is held to ensure the redeemability of deposits.

2. The organized security markets permit the ready sale of a large amount and variety of outstanding claims. Such claims may be said to have exchange liquidity, or "shiftability" as opposed to basic liquidity. That is, the owner may *shift* these instruments to some one else in exchange for standard money or its equivalent without waiting on the slower process of repayment. Claims *j* to *l* of Class 1 and *b* to *e* of Class 2 are of this type.

3. The third arrangement to ensure liquidity of claims, *viz.*, contracts or guarantees to purchase, is similar to resale in the open market in that the instrument is shifted to another party in return for money. It differs, however, in that the buyer is some governmental agency or financial institution which guarantees to purchase all offerings of the particular type of claim, usually at a specified price. A good illustration is the standing offer of the Federal Reserve banks to buy all prime bankers' acceptances at the official buying rates. Between October, 1933, and July, 1946, the official buying rate on bankers' acceptances (1 to 90 days maturity) was $\frac{1}{2}$ per cent per annum, but it was raised subsequently as short-term rates hardened and stood at $1\frac{1}{2}$ per cent at mid-year, 1949. Another example is the standing offer of many investment trusts to purchase their outstanding shares at a small discount from the book value, computed on the basis of the current market value of the security portfolio of the trust.

4. Rediscount facilities, the final method, convey liquidity to a large class of claims which have no general market. Here again a governmental agency or some financial institution stands ready to convert claims into money. In this case, however, the process does not involve an outright purchase. The procedure can best be described by an example from the Federal Reserve System which has made the widest use of this method. A member bank may convert a large part of its assets into reserve money by endorsing eligible customer loans to the Reserve bank and receiving the proceeds in reserve money. Before maturity this paper is returned to the member bank for actual collection. Another example may be drawn from the real estate mortgage loan field. The Federal Home Loan Banks stand ready to give liquidity to the real

estate mortgages of those savings and loan associations and savings banks that belong to the Home Loan System. By this means one of the slowest types of claim can be converted into money.

There is a good deal of confusion with respect to the question of liquidity over the whole field. Because a particular loan is self-liquidating in character, it is often assumed that commercial bank loans as a whole are liquid within a short time. The absurdity of this idea becomes clear if one considers the working-capital requirements of business. While particular loans may be repaid, other loans must in general take their place if the level of business activity is to be maintained. In other words, business firms depend on the commercial banks to supply a revolving working-capital fund of many billions of dollars. If the banks should attempt to liquidate this fund by calling the loans in a short time, the normal flow of business and income would soon come to a standstill. Inventories would be thrown on markets without buyers, and there would be a general rush to collect receivables, which would be tightly frozen under these circumstances. The only way that bank loans as a whole can be made liquid is through the money-creating activities of the central bank or the treasury.

If basic liquidity is limited in this manner, exchange liquidity is restricted even more over the whole field. Under normal conditions, the organized security markets make it possible to shift standard claims to some one else without appreciable loss. But it would be impossible for all owners of such claims to liquidate them at once. In fact, as in all free markets, the price must fall whenever the supply offered at the existing price exceeds the demand. In the final analysis, therefore, exchange liquidity likewise rests on the support of the money-creating powers of the central monetary agencies.

THE STOCK OF MONEY

This brings us to the knotty problem of marking off the precise boundaries between money and other liquid claims. At best, this boundary must be set rather arbitrarily, since from the liquidity standpoint the whole family of claims represents a scale with fine gradations, ranging from standard money to the least liquid of instruments. There is also some overlapping of classes. Moreover, there is room for disagreement in view of the fact that money has three more or less separate major functions: (1) a medium of exchange, (2) a measure of values, and (3) a means of storing value. Is money something which performs all three of these functions, two of them, or only one? Small wonder that there is not exact agreement among the authorities! The object of this sec-

tion is to determine the most workable general-purpose definition of money.

In general, the term "money" is used here to include the following: (1) anything which is generally accepted as a medium of exchange (payment money), whether by law or by custom, or is used as a redemption reserve (reserve money) to ensure the parity of payment money; (2) anything which serves as a standard measure of the values of economic goods, *i.e.*, in terms of which the prices of other things are expressed. Money does not include those liquid claims or wealth which serve as a means of storing value, but which do not also perform one or the other of the first two basic functions established by long tradition. Any form of wealth or property, including money, necessarily stores value. Money, however, has no corner on this particular function, even though its characteristics may uniquely fit it for this purpose.¹

Reserve Money. The gross stock of money is composed of two main divisions: (1) reserve money and (2) payment money. Reserve money is held by the Treasury, central bank, and commercial banks as a foundation for the payment money. Payment money, as the name implies, includes any form of money which is being used or held for the purpose of paying debts, *i.e.*, which is serving as a medium of exchange. Since most forms of payment money involve a large element of credit, doubt concerning their future parity with standard money may easily arise. It is the function of reserve money to maintain payment moneys at par at all times and places. This is usually accomplished by the device of redeemability by which the Treasury, central bank, or commercial banks agree to redeem credit money in standard money, dollar for dollar. Adequate reserves of standard money must be maintained to preserve confidence in the credit money. That is to say, except in emergencies, the ratio of reserve money to credit money should not be permitted to fall below a safe level as determined by experience.

In the United States the ultimate metallic reserve is held by the U.S.

¹ The heading of this section is the "stock of money" rather than the "supply of money" in order to avoid the implication that there is a supply schedule of money corresponding to the supply schedule of a commodity. The latter, it will be recalled, is composed of the quantities of the commodity which will be offered on the market by sellers corresponding to an array of possible prices. That is, 1,000 units will be offered at a price of \$1 per unit, 1,100 units at \$1.05, 1,200 at \$1.10, and so on. There is no such schedule in the case of money. A larger quantity of money is not forthcoming as the purchasing power of the dollar rises. It is therefore misleading to use the term "supply" of money; the term "stock" or "quantity" is more in keeping with the facts. The forces controlling the stock of money are discussed in Chapter XX.

Treasury Department. At the end of April, 1949, it consisted of \$24.3 billion of gold bullion and \$3.6 billion of silver. In addition, the Treasury had cash and deposits with Federal Reserve banks of \$2.3 billion. One step removed from the Treasury stands the gold-certificate reserve of the Federal Reserve banks. This reserve is held against their Federal Reserve note and deposit liabilities. On the same date it amounted to \$23.1 billion, and the Reserve banks held in addition \$0.3 billion of other cash. Still another step removed is the reserve which the commercial banks hold back of their deposits. This consisted of \$19.1 billion of legal reserve deposits with the Federal Reserve banks and about \$2.0 billion of cash held in their own vaults.¹

The reserve money structure of a modern monetary system is thus a rather complicated one. It involves a considerable degree of pyramiding as exemplified by the fact that the legal reserve of the commercial banks consists of a deposit liability on the books of the Federal Reserve banks. The successive layers of reserve money cannot, of course, be added together to a significant grand total. Instead, each segment must be considered in relation to the money claims which rest upon it.

It should also be mentioned that there are channels of interconnection between the fund of reserve money and the fund of payment money. Federal Reserve notes or silver certificates in the hands of the public today may be deposited tomorrow and reside in the vaults of commercial banks as reserve money. The commercial banks may in turn deposit the silver certificates with the Federal Reserve banks with the result that both the deposits and the cash of the Reserve banks are enlarged. If the commercial banks also deposit the Federal Reserve notes, the deposit liability of the Reserve banks would be increased and their note liability would be reduced without any effect on their cash. This whole process may, of course, move in the opposite direction, so that the amount of payment money may increase at the expense of the reserve money fund. Since 1933, the channels connecting the funds of reserve and payment money have been partly closed in the United States. Monetary gold was at that time called into the Treasury, and gold certificates were called in from the public and the commercial banks to the Federal Reserve banks. Thus, gold and gold certificates now legally serve only as reserve money, whereas formerly they both flowed freely into circulation on demand. When reserves are drawn into circulation, it is often termed an *internal drain*; when gold is exported it is frequently called an *external*

¹ Interbank balances have not been included here because they cancel out over the commercial banking system. Such balances, however, may properly be regarded as primary reserve by the individual bank. SOURCE: *Federal Reserve Bulletin*, June, 1949.

drain on reserves. The restrictions since 1933 have practically eliminated the internal drain. The external drain has also been brought under control by the Treasury which requires that all gold exports be approved and licensed. In so far as freedom of gold export is restricted, this constitutes an important modification of the traditional gold standard.

Payment Money. There are two principal categories of payment money: (1) currency and (2) deposit money. Each of these will be discussed in turn.

Currency. Currency is used here to include all coin and paper money outside the Treasury, the Federal Reserve banks, and the commercial banks. Other terms which have the same meaning are "cash," "pocket-and-till money," and "hand-to-hand money." Currency is used principally in making retail trade and wage payments. Also, it is hoarded in times of uncertainty as a means of safely storing general purchasing power. At the end of April, 1949, the stock of currency in the United States amounted to \$24.9 billion. Nearly nine-tenths of this amount was in the form of Federal Reserve notes. The remainder, in the order of amount, was composed of silver certificates, subsidiary silver coin, Federal Reserve bank notes, United States notes, minor coin, silver dollars, and national bank notes.

Deposit Money. Deposit money is defined to include all checking accounts of business enterprises, individuals, institutions, and political units, including the deposits of the Federal government on the books of the commercial banks and the Federal Reserve banks. Bankers' balances are excluded since they are used principally to make interbank settlements and are seldom employed to pay ordinary business obligations. To be strictly logical, the unknown fraction of bankers' balances held in order to make nonbank payments should be included in deposit money; the same is true of excess legal reserve balances of member banks, and a part of deposits of nonmember banks, foreign banks, and foreign governments at the Federal Reserve banks. But since this information is lacking, and since the error is small, no attempt is made to include this element in the statistical measure of deposit money. It should also be mentioned that the gross amount of demand deposits, which appears on the combined statement of all commercial banks, is an overstatement of deposit money. To arrive at "adjusted" demand deposits, it is necessary to deduct from gross demand deposits the amount of checks which is in the process of collection. At the end of April, 1949, the total amount of deposit money in the United States was \$84.5 billion.

The practice of paying by check has become so widespread that

between 80 and 90 per cent of all money payments is made in this manner. This is accounted for by the greater convenience and safety of the check as compared with currency in all large payments. It would have required a fleet of armored cars to deliver currency when The National City Bank of New York paid the State of New York \$300,138,750.00 for Veterans bonus bonds in March, 1948. This payment was actually made by a single check which uneventfully passed through the New York Clearing House along with tens of thousands of others on the day of collection (see page 210). It is also convenient to use the check-book stubs as a record of payments and current bank balance and to use the returned vouchers as receipts. Practically all financial transactions, wholesale trade, and other inter-business transactions are settled by check, as well as a large proportion of retail trade and wage payments. This leaves a comparatively narrow field for the use of currency.

*Time Deposits.*¹ As indicated in the introduction of this chapter, there has been a growing disposition since the 1920's to elevate time deposits to the status of money. While the question is a controversial one, the position taken here is that they should not be classified as money, but rather should be regarded as a form of liquid investment. In view of the importance of this problem from the standpoint of clear thinking on monetary problems, it is essential that the pros and cons of the question be weighed carefully with the aim of adopting the most logical usage.² The inclusion of time deposits as money would have enlarged the money stock in April, 1949, from \$109.4 billion to \$167.5 billion, an increase of \$58.1 billion. It is thus a problem of considerable quantitative importance, as well as one of logic.

The arguments of the proponents of including time deposits may be summarized as follows:

First, time deposits are a means of storing general purchasing power comparable to currency or demand deposits in the sense that there is little danger of loss in dollar terms. Unlike the owner of a long-term bond, a time depositor is not subject to the risk of loss from a decline in bond prices accompanying a rise of interest rates.

Second, such deposits can be converted into currency at par just as demand deposits. While the banks may by contract require 30 or more days' notice before cashing them, they are in practice usually cashed on

¹ Time deposits include savings deposits of commercial and mutual savings banks.

² A precise definition of money is of first importance in dealing with forces determining the value of money and the rate of interest, as well as with monetary questions in general.

demand. In other words, they are, in fact, demand liabilities of the banks along with demand deposits. This feature together with the first point equips these deposits to satisfy the general desire for liquidity.

Third, time deposits are similar in origin to demand deposits in that both grow out of the expansion of loans and investments of commercial banks.

. Fourth, such deposits are also similar to demand deposits in that reserve money is required to support them. To be sure, the reserve is a lower proportion, but it is required nevertheless, and this fact must be considered by the monetary authorities in the administration of monetary policies.

On first view, these arguments do indeed present a convincing case. But in the writer's judgment, the opposing arguments which follow carry greater weight.

First, time deposits do not perform either of the two basic functions of money established by long tradition. That is, they are not used as a medium of exchange, and they do not serve as a standard measure of the values of other things. It seems inadvisable to elevate any liquid claim which does not perform at least one of these basic functions to the status of money. Payments are not made directly with such deposits. Before paying a money debt, it is necessary to convert them into currency or demand deposits with which in turn the payment is actually made. This conversion process is comparable to the sale of a security or other property for money with a view to buying something else. Thus, time deposits, like all other liquid property, are one step removed from the money category. They can better be regarded as a liquid type of *investment* as long as law and custom prevent their transference by check.

Second, the fact that a claim satisfactorily meets the demand for liquidity is not enough when taken alone, to warrant its classification as money. To do so would open the money door to the whole range of liquid claims (listed on page 279) which represent between 40 and 50 per cent of the entire national wealth. If time deposits are classed as money, there is no logical reason why claims (*f*) to (*k*) should not also be included even under the strictest interpretation. United States savings bonds can be cashed immediately, or on short notice, at prices definitely determined in advance. These were outstanding in the amount of \$56 billion at the end of April, 1949. Shares of savings and loan associations can be cashed at par just as can time deposits. On the same date the shares of these associations amounted to about \$12 billion. Credit balances in accounts with brokerage houses may be withdrawn on demand, and hence are perhaps even more liquid than time deposits. These balances

held by member firms of the New York Stock Exchange amounted to \$542 million. The cash surrender value of life insurance policies represents savings which may be withdrawn either by surrendering the policy or by borrowing from the company. This item amounted to nearly \$50 billion. Government marketable securities maturing within one year are certainly as liquid as time deposits. Such issues aggregated \$45 billion. Thus, if time deposits and these other equally liquid claims be classified as money, the money stock is thereby increased by \$222 billion to a grand total of \$331 billion, compared with total currency and demand deposits of \$109.4 billion.

Once the demand deposit boundary has been crossed there is no very definite reason for stopping even at this point. Wherever the stopping place is set, it must be quite arbitrary, being mainly a matter of degree along the scales of maturity and quality.

Third, the argument that time deposits are similar in origin to demand deposits does not stand up under close scrutiny. Time deposits seldom, if ever, arise directly from a bank loan. Money is borrowed only when needed to make payment of some sort. It is therefore typical that the proceeds of the loan are placed to the credit of the borrower's checking account. The strong instinct of self-interest can be depended on to restrain all but the foolish from borrowing at 4 per cent and placing the money on a time deposit account at 2 per cent. It is true, of course, that time deposits arise indirectly from the expansion of commercial bank loans and investments. But a little reflection shows that this is even more true of most other claims on wealth. The new demand deposits which are created by the expansion of commercial bank loans and investments are likely to be used in financing a larger flow of business and income payments. If so, the increased savings which arise therefrom will take the form not only of additional time deposits but will also appear as increases in all conceivable forms of investment. In fact, this process is limited considerably more when savers place funds on time deposit instead of buying securities directly. This follows since reserves must be maintained back of such deposits, while the purchase of a bond by an individual or by other nonbank interests places no burden on bank reserves. This argument therefore carries little weight since it can be used as cogently to classify real estate mortgages in the money category—a patently absurd proposition—as to include time deposits.

Last, the fact that time deposits require reserves has little bearing on the question of whether such deposits are or are not money. This is merely a practical fact which the monetary authorities must consider in the administration of monetary policies. Their recognition of this fact

does not depend on whether time deposits are classified as money or whether they are treated as a highly liquid claim.

In conclusion, the boundary line between money and other liquid claims can best be determined on the basis of functions served. A liquid claim which fails to meet the test of serving either as a medium of exchange or as a basic measure of values is best not classed as money. The attribute of liquidity alone is not enough. Time deposits clearly do not meet this test under present laws and customs in the United States. When the time comes, if ever, that time deposits are actually transferred by check in making payments, it may be justified to admit them to the inner monetary sanctum, but not before. Until then they are best regarded as merely a highly liquid form of investment.

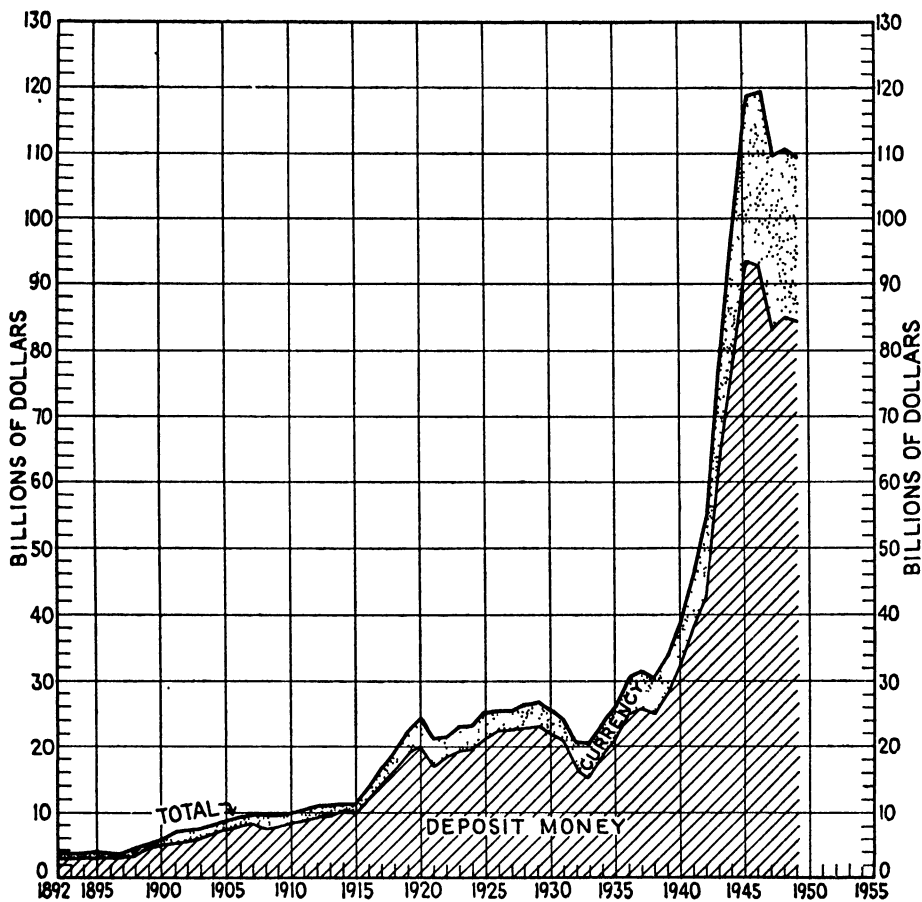
Other Liquid Claims. There remain two other types of claim which have on occasion been classified as money, *viz.*, unused lines of credit at commercial banks and book credit.

The argument for including unused lines of bank credit is that they represent generalized purchasing power to the holder just as truly as does a demand deposit account. They may on short notice, be transformed into actual loans and demand deposits. The existence of such credit lines is an element in satisfying the general demand for liquidity. Despite these facts, it does not seem wise to classify them as money. First, they do not meet the basic tests of serving as a medium of exchange or a measure of values. They are one step removed from demand deposits which are actually checked upon in the payment of debts. Before such credit lines are transformed into deposits, a further legal and financial procedure must be completed. They are thus potential, but not actual, payment money. Second, the concept of unused bank credit lines suffers from the vagueness which often attaches to potential factors. Should it include only those credit lines which have been defined specifically as to amount, time, and other terms of the loan agreement? Or should it be extended to include less specific formal agreements, general verbal understandings, and the vast amount of unused bank borrowing power which bank depositors take into consideration but which does not rest on even a verbal understanding? It would obviously be difficult to give lines of bank credit a precise statistical meaning. They are best thought of not as money but as a factor which economizes the use of money by satisfying a part of the need for liquidity. That is, less money needs to be held owing to the fact that the depositor is assured that he can borrow more if he so desires.

The case for treating book credit, *i.e.*, accounts receivable, as money is not a strong one. It is not a medium of exchange—general purchasing

power—but rather represents specialized purchasing power over particular goods. The extension of more book credit by business firms taken as a group means that they must in turn borrow this amount at the commercial banks in order to maintain their former cash position. It may therefore be regarded as an indirect method of borrowing at the com-

CHART 9. THE STOCK OF MONEY IN THE UNITED STATES, 1892-1949*



SOURCE: *Banking and Monetary Statistics, 1892-1941*; *Federal Reserve Bulletin*, 1942-1949

* Midyear data.

mercial banks which involves the creation of new deposits. To include as money both these new deposits and the book credit would be double counting. Like time deposits and lines of bank credit, book credit may better be regarded as a factor which economizes money. Instead of being money, it is a means of deferring money payments.

Statistical Measurement of Payment Money. Statistics are now avail-

able showing the stock of payment money in the United States since 1892. This information is presented graphically in Chart 9 which emphasizes certain monetary high lights. First, the vast expansion of the money stock over the period stands out. This was in large part a consequence of the use of bank credit in financing the First and Second World Wars. Second, the tendency of money to decline in amount during depressions is shown in the periods 1907–08, 1921–22, and 1930–33; its tendency to expand during the recovery and prosperity phases of the business cycle is shown in the periods 1923–1929, and 1934–1937. Third, the stocks of currency and deposit money usually rise and fall together, but at times their movements are in opposite directions. The best illustration of their inverse movement is the depression of 1930–1933, when currency was hoarded owing to a lack of confidence in the commercial banks. Last, the growing relative importance of deposit money between 1890 and 1930 is brought out. In the former year, deposit money was 2.6 times larger in amount than currency; in 1930 it was 6.6 times larger. This trend has been halted, and may even have been reversed, since 1930. The ratio dropped to 4.9 to 1 in 1940 and to 3.4 to 1 at midyear, 1949. Abnormal conditions, first of depression and then of war, account in the main for this change.

Review Questions

1. Summarize the historical development of the term “money” in economic usage.
2. Compare the structure of claims on wealth to that of real wealth and explain the relation between them.
3. Differentiate between basic liquidity and exchange liquidity, and indicate the ultimate factor on which both of these depend.
4. Describe the other types of arrangement that provide liquidity for claims to wealth in addition to repayment from income.
5. Compare the liquidity of a single commercial bank loan with the total liquidity of the aggregate of all commercial bank loans.
6. Define money in terms of its functions.
7. State the distinguishing functions of the following: reserve money, payment money, currency, and deposit money. What is meant by “internal drain” and “external drain”?
8. Summarize the arguments for and against the inclusion of time deposits in the classification of money.
9. What are the pros and cons of including in the stock of money (a) unused lines of bank credit and (b) book credit?
10. Point out the principal monetary developments brought out in Chart 9.

Advanced Questions and Problems

1. Why is the term “stock of money” preferable to “supply of money”?
2. Explain the money-creating powers of the Federal Reserve banks. In

what respects are these powers advantageous, and in what respects do they constitute a hazard to the economy?

3. Does a change in the amount of reserve money have a direct or an indirect influence on the commodity price level? Explain.

4. Bring Chart 9 up to date, and interpret the more recent changes.

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CHAPTER XIX

FORCES GOVERNING THE PRICE LEVEL

Monetary theory is very largely concerned with the analysis of the forces which govern the average level of prices. Most other monetary questions are in a sense subsidiary to this central problem. For example, the chief test of the goodness of the gold standard, or of any other possible monetary standard, is its capacity to promote maximum economic welfare, which implies in turn a reasonable stability of the price level. Or again, the problem of credit control by the central monetary authorities is concerned mainly with the forces that govern prices. It will be recalled that the price system has two separate, though related, aspects: (1) the price structure and (2) the price level. These two aspects have been aptly illustrated by the analogy of a swarm of bees.¹ There is always an average height of the swarm, even though individual bees change position in the course of flight. Moreover, when the level of flight changes, the scatter of the swarm about its queen is widened. The same may be said of the price system.

The structure of prices and the principles of individual price determination have already been discussed in Chapter III. It was found that the market price of a commodity is a result of the impact of the forces of supply and demand, formally represented by a supply schedule and a demand schedule. But this type of analysis does not reveal why the average level of prices is what it is, nor what causes the price level to rise or fall. This is the problem which engages us in the present chapter.

THE EQUATION OF EXCHANGE

The great complexity of the forces which directly or indirectly bear on the determination of the price level requires that the problem be simplified as much as possible. Otherwise, it would be impossible to comprehend. Some of the forces are immediate in their influence, some are intermediate, and others are of a more ultimate nature. Moreover, all the causal factors are bound together in a crisscross pattern of interrelationships which changes like the colors in a kaleidoscope. The most

¹ Irving Fisher, *The Purchasing Power of Money* (New York, The Macmillan Company, 1911), p. 194.

useful device yet discovered to simplify this problem is the all-money-transactions equation of exchange, popularized and refined in this country by Professor Irving Fisher.¹ An equation of the Fisher type, however, was published a century earlier (in 1811) by Cagnazzi, an Italian economist.²

Derivation of the Equation. The equation is based on the fact that total money payments (M_p) in a given period of time are necessarily equal to total money receipts (M_q). Obviously, some one must receive all the money which is expended; hence $M_p = M_q$. This equation is derived by a summation of individual money transactions, each of which amounts to a sum (m_p) computed by multiplying the unit price (p) by the quantity sold (t). For example,

$$\begin{array}{rclcl}
 m_p & & = & p \times t & \\
 \text{Expenditure for coal:} & \$150 & = & \$15 \times & 10 \text{ (tons)} \\
 \text{Expenditure for wheat:} & \$200 & = & \$2 \times & 100 \text{ (bu.)} \\
 \text{Expenditure for gasoline:} & \$200 & = & \$0.20 \times & 1,000 \text{ (gals.)}
 \end{array}$$

Hence $\Sigma m_p (\$550) = \Sigma pt (\$550)$

The next step readily leads to the most common form in which the equation of exchange is stated, *viz.*,

$$MV = PT$$

For total money payments (M_p or Σm_p) may be resolved into MV , and Σpt may be written PT . In this case M refers to the average stock of payment money in the country during the period. That is, M includes currency (M_c) outside the Treasury and the banks and deposit money (M_d). M does not include reserve money (M_r) since by definition the fund of reserve money is not employed directly in making payments. Thus, $M = M_c + M_d$.

The term V refers to the velocity of circulation of the average stock of money (M) during the period, say one year. In other words, V represents the number of times that M turns over in making the total payments (M_p or MV). Thus $V = M_p/M$. If M_p in a given year amounts to \$2.4 trillion and M amounts to \$120 billion, the velocity or turnover of M is 20. Each dollar on the average was used to make payments amounting to \$20. This does not mean, of course, that all dollars had a turnover of 20. The turnover of individual dollars ranged

¹ *Ibid.*

² See A. W. Marget, *The Theory of Prices* (New York, Prentice-Hall, Inc., 1938), Vol. I, p. 11.

from 0 in the case of the "drone" dollars which made no payments at all to over 100 in the case of the active "worker" dollars.

The term P in the equation represents the average price at which the physical units of things are sold during the year. P is usually called the "general price level" or the "average price level." Speaking more technically, P is the weighted arithmetic mean of the p 's, the weights being the respective quantities (t 's) sold. Thus $P = \Sigma pt / \Sigma t$. It would of course be inaccurate to compute P by taking a simple arithmetic average of the p 's. Also, being a summary term, P tells us nothing about relationships within the price structure. Wages and other cost prices are not distinguished from the prices of consumers' final products, producers' goods, farm products, securities, and so forth. Thus, in encompassing so much, P becomes a very abstract and heterogeneous concept. The prices embraced by the equation, it should be added, are those which are actually *realized* on the things paid for with money during the period. They are not *quoted* prices for things which are offered for sale, but which are not sold and paid for. Nor are the prices of the equation *anticipated* prices. Of course realized prices both influence and are influenced by future expectations, but anticipated prices may never in fact be realized.

The last term of the equation, T , refers to the physical units of things bought and paid for during the period. It is composed of tons of coal, bushels of wheat, hours of labor, shares of stock, and so on. These physical quantities can best be thought of as a list of weights which are applied to individual prices (p 's) in order to accord the proper importance to each price. T is usually spoken of as the "physical volume of trade," which includes all objects and services paid for during the period, provided they have an identifiable price per unit. This proviso excludes such items as tax payments and gifts, where it is not possible to identify a physical unit with a price. Items of this kind can be incorporated in the equation only by the addition of another term, say E , to represent them. The equation would then be written $MV = PT + E$. Also, the term T is much broader than current output since current output, as well as existing wealth and property, frequently changes hands. On the other hand, the term is not so broad as the physical volume of property *offered for sale*. It is not enough that the property be offered for sale at some price or other; the transaction must be completed during the period in order to qualify.

Two simplifying assumptions are made with respect to the equation as stated. First, it is assumed that pricing, delivery, and payment for objects bought and sold take place at the same time. This frees us from

the complication which arises when credit transactions overlap from one time period to the next. Second, the assumption is made that the country is entirely self-sufficient, having no foreign trade or financial transactions with other countries. Neither of these assumptions seriously limits the use of the equation for present purposes.

Interpretation of the Equation. The most important feature of the equation of exchange is that it summarizes in the four included terms all the forces which influence the level of prices, and it also sets forth their relationships. It thus represents an orderly approach to a complicated problem, and is a logical first step along the way. But too much should not be read into the equation. Like all summary figures, the four symbols tell us nothing about the intermediate and ultimate causes which lie behind each of the symbols, making them what they are and causing them to change. A monetary analysis that begins and ends with the bare bones of the equation is superficial indeed. To be worth its salt, it must delve deeper into the underlying causes.

Another feature of the equation is that it reveals nothing whatever concerning the direction of causation of the forces at work. It does not represent any particular theory of price-level determination. All too frequently it has erroneously been identified with the quantity theory of the value of money. But the equation may equally serve as a device to present a theory which places little or no emphasis on the M factor.

Still another feature of the equation is that it applies to a definite time period during which each of the terms is measured. If the period chosen is 1950, then the things bought must be paid for by use of the stock of money in 1950, and at prices realized in 1950.

The equation itself tells us only the following things:

1. If MV rises or falls in amount, PT must rise or fall by the same amount, by a change in either P or T or in both P and T .

2. If PT rises or falls in amount, MV must rise or fall by the same amount, by a change in either M or V or in both M and V .

3. $M = PT/V$. That is, M varies directly with P and T and inversely with V .

4. $V = PT/M$. That is, V varies directly with P and T and inversely with M .

5. $P = MV/T$. That is, P varies directly with M and V and inversely with T .

6. $T = MV/P$. That is, T varies directly with M and V and inversely with P .

7. If two of the terms remain constant while a third term changes, the remaining term must change *proportionately* (directly or inversely) with

the change in the third term. For example, if V is doubled while M and T remain constant, then P must also be doubled; or if V is doubled while P and T remain constant, then M must be halved.

Causation in the Equation. While the equation of exchange, as we have seen, tells nothing whatever about cause and effect, it is possible to make certain generalizations with respect to the forces that determine the price level, as follows:

1. The price level (P) is usually a passive resultant of the interacting forces lying behind M , V , and T . That is, it is normally determined by these forces instead of being an independent variable. A flow of money (MV) meets and pays for a counterflow of physical things (T) offered and sold at an average price (P) during the period. This general statement, however, requires some qualification. During periods of extreme price inflation or deflation, P seems to become an independent variable at times, with M , V , and T adjusting themselves to a higher (or lower) price level. Also, the growing strength and aggressiveness of organized labor appears to be giving the level of wage rates a new significance as a determinant of P .

2. The stock of payment money (M) has in the past been the most important single factor influencing the level of prices. Paper and deposit money can be manufactured so much more easily and rapidly than goods that governments have frequently yielded to the pressure to inflate the money stock during periods of great stress. As a result, history is replete with illustrations of great price inflations which in most instances were a consequence of war. There is no need to go beyond our own vivid recollections of the First and Second World Wars for illustrations of almost every degree of price inflation, dependent in large part upon the extent to which the war was financed by the creation of new money. The stock of money is also one of the major determinants of the price level during peacetime, influencing both its long-term trend and its short-term changes.

3. The velocity (V) of the money stock likewise exerts a highly significant influence on the price level. This is particularly true during conditions of violent price inflation. For example, the turnover of currency in Germany increased eighteenfold between July, 1921, and October, 1923—the period of hyperinflation following the First World War.¹ During the ups and downs of the business cycle the V factor is considerably more significant as a rule than is the M factor. To illustrate, the index of turnover of deposit money rose 152 per cent between the bottom

¹ See C. Bresciani-Turroni, *The Economics of Inflation* (London, George Allen & Unwin, Ltd., 1937), p. 168.

of the depression of 1921 and the peak of the boom in 1929, while the amount of deposit money rose only 45 per cent. Furthermore, deposit turnover declined 66 per cent between November, 1929, and April, 1933, compared with a decline of 42 per cent in deposit money.¹

4. The physical volume of trade (T) always occupies an important position in accounting for both short-term and long-period changes in the price level. This statement is borne out by all available statistics on physical volume of business activity. As a rough indicator, the Index of Industrial Production of the Federal Reserve Board may be cited. This index dropped from 110 in 1929 to 58 in 1932 and then rose to 239 in 1943. Statistical studies also indicate that the physical volume of production in the United States has grown at the annual rate of about 3 per cent since the middle of the nineteenth century. Moreover, the short-period influence of T is augmented by the fact that it includes the *turnover* of all existing goods and other property.

5. The forces which make for a rising price level are (1) an increase in the stock of payment money (M), (2) an increase in the velocity of money (V), and (3) a decrease in the physical volume of trade (T).

6. Conversely, the forces which make for a falling price level are (1) a decrease in M , (2) a decrease in V , and (3) an increase in T .

7. The price level (P) is always determined by the *mutual* interaction of all the forces summarized by M , V , and T , assuming typical conditions when P is passive. It follows that a change in one of the three terms (M , V , and T) does not mean that P *must* change, since an offsetting change may take place simultaneously in one or both of the remaining terms. For example, T may be doubled without any change in P if (MV) is doubled at the same time.

8. An increase of (MV) under conditions of unemployed labor and idle resources has the effect of increasing production and trade (T) as well as of increasing P . As unemployed resources approach full utilization, scarcities begin to appear here and there with the result that particular prices and price groups rise. This leads to a rise in the grand average of prices (P).

9. An increase of (MV) under conditions of full employment of labor and other resources has the effect principally of increasing P . Most historical cases of sharply rising prices fit into this case.

10. Since M , V , and T are all subject to very substantial changes, it is an oversimplification to state any theory of the price level in terms of any *one* of these factors. For example, it would not be illuminating and it

¹ See J. W. Angell, *The Behavior of Money* (New York, McGraw-Hill Book Company, Inc., 1936), pp. 105, 178, 186.

might be misleading to state: Other things (M and T) being equal, the price level varies directly and proportionately with money turnover (V).

The Quantity Theory of Money. This leads to a consideration of the quantity theory of money, since it is one of the species of theory referred to in the preceding paragraph. While there are many varieties of this theory, all of them have the common feature of placing heavy emphasis on the quantity (stock) of money as the dominant factor determining the level of prices. Two forms of the quantity theory should be distinguished: (a) the short-term form and (b) the long-term form.

The Short-term Form. A typical statement of the short-term quantity theory is as follows: Other factors remaining the same, the price level changes in direct proportion to, and as a consequence of, changes in the quantity of money. Thus, V and T of the equation are held constant by hypothesis, and the main emphasis is placed on M . This statement is a correct one under ordinary circumstances from the standpoint of formal logic. The objection to it, as stated above, is that it represents a misleading oversimplification of a complex question. The forces summarized in the terms V and T are always too important and dynamic to be excluded by hypothesis from the formal statement. There are times, as during the typical business cycle, when V is a more influential factor than M . At such times it would be less objectionable, although inadvisable, to state: Other factors remaining the same, the price level changes in direct proportion to, and as a consequence of, changes in the turnover of money. Similarly, it would at times be less objectionable, although still inadvisable, to state: Other factors remaining the same, the price level changes in inverse proportion, and as a consequence of, changes in the physical volume of trade. Recognizing, then, the significant and ever-present influence of all three factors it is more realistic to state the theory of the price level as follows: *Under ordinary circumstances, the price level is a net resultant of the forces summarized by M , V , and T , varying in direct proportion to M and V , and in inverse proportion to T .*

Critics of the short-term form of the quantity theory have frequently gone to great lengths to disprove it by statistical studies which show that the price level has not varied in the past directly in proportion to changes in the quantity of money, that in fact it has shown little or no correlation with the quantity of money during extended periods of time. In fairness to the quantity theory, it should be pointed out that such studies set up only a straw man for sham attack. No so-called quantity theorist of any standing whatever has said that the quantity of money is the sole determinant of the price level in the short term. The forces summarized

by V and T have invariably been recognized, but they have been immobilized by hypothesis. This sort of criticism does not, therefore, cross swords with a modern statement of the quantity theory. However, the fact that this theory has been so widely misunderstood amply justifies the criticism in the preceding paragraph.

The Long-term Form. The long-term form of the quantity theory is concerned with the basic trend of the price level, rather than with its cyclical and other short-term fluctuations. This form of the theory would require no further comment except for the fact that a number of influential writers carry the process of simplification one step further in this case. They state the equation of exchange in terms of currency (M_c) only; i.e., they omit deposit money from the money stock. A representative statement of the theory is as follows: Other things being equal, the normal (long-term) price level changes in direct proportion to changes in the quantity of currency (M_c).¹

This form of the theory unquestionably represents gross oversimplification. For in addition to assuming the constancy of V and T , it also assumes that the ratio between currency (M_c) and deposit money (M_d) remains the same. That such a further assumption is unjustified is clearly indicated by available statistics. This ratio (M_c)/(M_d) has followed a declining trend since the early beginnings of deposit banking in the eighteenth century. At the time of the Civil War it was about 1 to 1 in the United States; in 1890 it was 0.41 to 1; by 1930 it was 0.16 to 1.² Since 1930 the down trend of the ratio has been arrested or reversed, and in 1948 it was 0.3 to 1. The conclusion is inescapable that this form of statement is definitely misleading in view of its formal exclusion of the principal forces which affect prices.

A similar appraisal applies to the statement of the quantity theory in terms of reserve money, as follows: Other things being equal, the normal (long-term) price level changes in direct proportion to the quantity of reserve money (M_r). Such a statement has a more solid logical basis than the previous one, since the amount of deposit money is within limits determined by the amount of bank reserves. Nevertheless, it assumes the constancy of V , T , and the ratio between reserve money (M_r) and payment money (M). This ratio (M_r)/(M) changes very materially from one generation to the next, owing to such developments as (1) the growth of central banking with its capacity to use reserves more efficiently; (2) the wider employment of the gold-exchange standard which also

¹ See Fisher, *op. cit.*, pp. 50-52; also E. W. Kemmerer: *Money* (New York, The Macmillan Company, 1935), pp. 53-57.

² See Angell, *op. cit.*, p. 175.

economizes ultimate reserves; (3) changes in legal regulations of bank reserves; (4) changes arising from international monetary cooperation and regulations; (5) changes in central bank policies as they relate to bank reserves; and (6) changes in reserve policies of commercial banks. Again, we must conclude that a statement of this sort is entirely unjustified, since it assumes away a major part of the problem in the phrase "other things being equal."

With special reference to the world gold standard and price level, a still further statement of the quantity theory is sometimes made in terms of the world gold stock.¹ This form of the statement is even less acceptable than the two previous ones. If the total world gold stock is used, it is open not only to all the objections raised in the preceding paragraph with respect to the use of reserve money but to two others in addition. (1) It must be assumed that the proportion of the total gold stock used for monetary purposes remains the same and (2) that the gold-standard area is not changed by new adoptions or withdrawals by various countries. If the monetary gold stock instead of the total gold stock is used, of course the first assumption does not apply, but the second one must be made. In either case, this form of the quantity theory contributes little to monetary analysis, since by hypothesis it avoids the heart of the problem.

In summary, the chief criticism of the quantity theory, in either its short-term or long-term form, raises no question concerning its formal correctness; under ordinary circumstances it is logically valid. Instead, the main objection relates to its usefulness in monetary analysis; it assumes away in the phrase "other things being equal" too many of the important and dynamic forces that govern the price level.

Review Questions

1. State and derive the equation of exchange.
2. Define each of the terms entering into the equation of exchange.
3. Distinguish between what the equation of exchange tells us and what it cannot tell us about the determination of the price level.
4. Contrast the roles usually played by M and P in the equation of exchange.
5. "The stock of payment money (M) has in the past been the most important single factor influencing the level of prices." Develop and illustrate this statement.
6. "During the ups and downs of the business cycle the V factor is considerably more significant as a rule than is the M factor." Give proof of this statement.

¹ See Gustav Cassel, *The Theory of Social Economy*, rev. ed. (New York, Harcourt, Brace and Company, Inc., 1932), pp. 453-454.

7. Describe the position of the physical volume of trade (T) as an important variable in both short-run and long-run changes in the price level.
8. Summarize the forces which make for a rising price level; for a falling price level.
9. "A change in one of the three factors M , V , or T does not mean that P must change." Support this statement.
10. State the short-term quantity theory of the value of money.
11. What are the objections to the quantity theory as stated?
12. Give a more realistic statement of the theory of the price level.
13. In what respect have critics of the short-term quantity theory frequently set up a straw man for sham attack?
14. State the long-term quantity theory in terms of currency. Criticize this form of statement.
15. State the long-term quantity theory in terms of reserve money. Criticize this form of statement.
16. State the long-term quantity theory in terms of the world gold stock. Criticize this form of statement.

Advanced Questions and Problems

1. "Most monetary questions are closely allied to the problem of analyzing the forces which govern the level of commodity prices." Support this statement.
2. Why are the prices included in the equation of exchange *realized* prices rather than *quoted* or *anticipated* prices?
3. "The equation of exchange does not represent any particular theory of price-level determination. All too frequently it has erroneously been identified with the quantity theory of the value of money." Develop this statement further.
4. Explain how the presence or absence of conditions of full employment of the factors of production conditions the impact of net changes in (MV) upon the grand average of prices.
5. Discuss the reflections to be expected in the magnitudes of M , V , P , and T from each of these situations: depression, boom, public price control, and increasing monopoly in business.

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CHAPTER XX

FORCES GOVERNING THE STOCK OF MONEY

The equation of exchange was presented and interpreted preliminarily in the preceding chapter. The point was stressed that the equation is a useful device to summarize in a few terms the complicated sets of forces which determine the price level. It was also stressed that monetary analysis cannot stop with a superficial interpretation of the equation, but that further study must be given to the forces lying behind each one of the included terms. This is the task which occupies us in this and the two following chapters. For purposes of clear discussion, it is desirable to break down the money stock into its two natural divisions: reserve money, and payment money.

RESERVE MONEY

Paper-standard Case. When a country has a paper money standard rather than a gold standard (or other commodity standard), the amount of reserve money is determined entirely by government monetary policy. The Constitution and laws of the United States give the Federal government the sole authority to issue paper money, a right which is denied to any state or political subdivision and to private interests. Thus, Congress passes monetary legislation which is administered by the President principally through the Treasury and the Board of Governors of the Federal Reserve System. Practically all countries follow a similar policy, *i.e.*, all paper money is issued either by the treasury or by a central bank under strict regulation. Central government monetary policy is therefore the sole determinant of the amount of reserve money that shall be issued. Under the stress of war, governments have usually issued more money as one means of meeting the vast expenditures; in fact, they have frequently issued so much that the monetary unit has lost a large part, if not all, of its purchasing power. In peacetime, the amount of paper reserve money may be regulated according to a more or less carefully worked out plan, or it may be almost entirely a result of political expediency.

Gold-standard Case. The gold-standard case presents quite a different situation which can only be presented summarily at this point. In this case, the factors which determine the amount of reserve money in

any one gold-standard country are as follows: (1) the total world gold stock; (2) the division of the total world gold stock between monetary and nonmonetary uses; (3) the volume of current world gold production; (4) the division of current world gold production between monetary and nonmonetary uses; (5) the distribution of the monetary gold stock among the countries which comprise the gold-standard area; and (6) the extent to which gold reserve money is drawn out of treasury and bank reserves for use as currency.

1. The total world gold stock includes both monetary and nonmonetary gold. This stock is determined by the cumulated amount of gold production in the past less the amount which has been lost in one way or another. The necessary adjustment for loss, however, is surprising small—only 0.2 per cent per annum¹—as a consequence of the indestructible nature of gold and its high unit value.

2. The division of the total world gold stock between monetary and nonmonetary uses is a result of the forces which have governed this division during the past 150 years or more. Once gold has been made into jewelry it tends to remain in this form for a long period of time. Moreover, it is only under very abnormal conditions that the amount of gold entering monetary systems exceeds current gold production, so that the stock of nonmonetary gold usually remains largely undisturbed. The two divisions have been about equal on the average since 1850. The forces which govern the current division between monetary and nonmonetary uses are analyzed under paragraph 4 below.

3. The amount of current world gold production, given the state of technology, is determined by the highest treasury price of gold offered by any major country in relation to the cost of production. If the treasury price is \$35 per ounce, no mines whose *direct* costs per ounce of delivered gold exceed this price will operate. In the long run, no mines whose *total* costs per ounce of delivered gold exceed \$35 will operate. Thus, given the cost structure of gold mining, the highest price offered by the treasury of any major country determines the output. New discoveries of gold or lower costs of mining tend to increase gold production, while exhaustion of the mines or higher costs tend to reduce it. The lower costs may arise from generally falling costs and prices, or they may be peculiar to gold mining; likewise, higher costs may be either general or peculiar to gold mining.

4. Given the treasury price of gold and the commodity price structure, the nonmonetary uses absorb a definite amount of gold each year; the

¹ See Gustav Cassel, *The Theory of Social Economy* (New York, Harcourt, Brace and Company, Inc., 1924), p. 442.

remaining amount of current gold production flows into the monetary stock. Nonmonetary consumption of gold divides into (a) use by industry and (b) consumption by gold-hoarding populations, principally India and China. Between 1900 and 1930, industry and the Orient absorbed on the average about equal amounts. The amount of gold taken by industry rises with real incomes, with commodity prices (lower value of gold) if the price of gold remains fixed, and when gold gains in favor compared with competing materials; the amount absorbed by industry falls under opposite conditions. Consumption by the Orient is largely for hoarding and ornamentation. It rises with real incomes, with the world gold price level, and with a decline in the price of gold in terms of rupees and yen; it falls under opposite conditions. Thus, the monetary gold stock tends to increase at a *decreasing* rate during periods of rising real incomes and rising commodity prices because of the increased nonmonetary demands, as well as reduced gold production. Conversely, the monetary gold stock tends to increase at an *increasing* rate during periods of declining real incomes and falling commodity prices, both because of reduced nonmonetary demand and of increased gold production.

5. The distribution of the world monetary gold stock among the various gold-standard countries at any given time is determined by the international balance of payments of these countries aggregated over many years. The monetary gold stock of Country A, for example, is a result of the relation between its purchases abroad of goods, services, and investments compared with its sales to foreign countries over a long period of time (gold excluded). If the outpayments of Country A during the preceding decade amounted to \$50 billion and its inpayments amounted to \$47 billion, it would have lost \$3 billion of gold to foreign countries. Gold-producing countries tend to lose a large part of their newly mined gold to the countries which have no mines by an excess of outpayments over inpayments. Thus, if Country A produced \$1 billion of monetary gold during the decade, this amount would have been included in the \$3 billion of gold exports, but the monetary gold stock of A would have declined only \$2 billion. A rather complex set of economic forces, which cannot be developed here, lies behind the balance of payments of each country.

6. Finally, the amount of gold reserve money of a country may be changed by the extent to which gold coin or gold certificates are employed as currency. Before the First World War it was the usual practice for central banks and treasuries to pay out gold coin or certificates for use as currency. But this practice was largely discontinued when

the gold standard was resumed in the 1920's. Since 1933, all gold in the United States has by law been centralized in the Treasury, and all gold certificates have been held by the Federal Reserve banks. If a country pays gold and gold certificates out as currency on demand, the gold reserve becomes subject to what has been called the "internal drain." For example, the gold reserve of the Treasury and banks of the United States was drained in the financial panics of 1873, 1893, 1907, and 1933 by public hoarding of gold. This, combined with the external drain, led to the suspension of specie payment by the banks. It should also be observed that a country that uses gold as currency tends to draw more gold to it than would otherwise be the case. This follows from the downward pressure on the price level of such a country when its bank reserves are reduced by the internal drain of gold. Lower prices tend to increase exports in relation to imports, and hence to cause an inflow of gold.

In conclusion, the point should be made that in the gold-standard case the stock of reserve money is fixed by more or less rigid factors. The world monetary gold stock is a physical fact largely beyond the influence of any one country; and changes in the distribution of this stock depend on changes in international trade and capital movements which cannot rapidly be influenced by any one country.

PAYMENT MONEY

Since the factors which govern the amounts of the two kinds of payment money—currency and demand deposits—are not the same, it is necessary to consider them separately.

Currency. Currency is demanded by the public to serve as a medium of exchange and a store of liquid value. We have already seen that the special function of currency is that of making the relatively small payments in retail trade and to wage earners. Currency needs, then, rise and fall as the dollar volume of retail trade and wage payments rises and falls. Currency is also demanded as a preferred means of storing value when confidence in the soundness of the commercial banks declines and when general uncertainty prevails. For example, during the single week preceding the bank holiday in March, 1933, currency in circulation rose 33.4 per cent—from \$5,652 to \$7,538 million.

Since only a small part of total money payments is made with currency, its role in the monetary system of the United States is usually represented to be a passive one as compared with deposit money. That is, the demand for currency is thought of as adjusting itself to existing circumstances without exerting a significant causal influence. There is, however, no logical justification for this point of view. Currency is a

part of the stock of payment money and as such it affects prices in proportion to the amount of payments made with it in just the same manner as deposit money affects prices. The mere quantitative fact that only between 10 and 20 per cent of money payments is made with currency in the United States does not relegate it to a passive role. In most countries currency remains a more important form of money than deposits.

Under modern conditions currency largely consists of credit money, such as the Federal Reserve note. The amount of currency is therefore limited by the amount of reserve money combined with the minimum reserve ratio which is enforced by law or custom. This outer limit to currency expansion is seldom reached, however, since at a given price level the actual amount is determined by decisions of the public to hold money in this form.

Deposit Money. Given the amount of basic reserve money, the volume of deposit money is governed by forces which may conveniently be discussed under five headings as follows: (1) the ratio of reserve money to deposit money and time deposits; (2) credit policies of the central monetary authorities; (3) loan and investment policies of the commercial banks; (4) borrowers' demand for bank credit; and (5) the demand to hold currency and time deposits.

1. The outer limit of deposit money expansion is set by the effective minimum ratio of reserve money to deposit money and time deposits. This limit may be set by law, as in the United States, or by bank management policy, as in Great Britain. It will be recalled that the gold-certificate reserves of the Federal Reserve banks must be at least 25 per cent of their combined deposit and Federal Reserve note liabilities.¹ This sets a limit upon the increase of the legal reserve balances of the commercial banks on the books of the Reserve banks. It will also be recalled that the average minimum ratios of member (commercial) bank legal reserves to net demand deposits and to time deposits are, respectively, 10 per cent and 3 per cent. This sets a limit upon the expansion of commercial bank credit.

2. A more effective limit to deposit money expansion is set by the credit policies adopted and enforced by the central monetary authorities (the Board of Governors and the Treasury). We have already seen how the volume of legal reserves of the commercial banks can be enlarged or contracted by the Federal Reserve authorities, mainly through open-market operations. Moreover, the Board of Governors has the power to raise or lower the legal reserve requirements of member banks within

¹ This minimum has some elasticity by law (see p. 150).

the range of 10 to 20 per cent (average) of net demand deposits, and of 3 to 6 per cent of time deposits. Thus, the central monetary authorities possess broad powers to influence the amount of deposit money both by changing the *amount* of legal reserves and by changing the required reserve *ratio*.

It should also be mentioned here that the effect of Federal Reserve open-market operations is not confined to the legal reserve position of the member banks, and therefore to a potential effect on the volume of deposit money. A purchase of securities by the Federal Reserve banks in the open market (excluding commercial banks) usually increases demand deposits of commercial banks a corresponding amount; a sale of securities has the opposite effect.

3. A still further supply factor affecting the amount of deposit money is the loan and investment policies of the commercial banks. These policies may be expressed through (a) the rates of interest charged on loans and (b) the quality and maturity standards employed in granting or refusing credit applications. This factor might be omitted if the commercial banks always expanded their credit immediately to utilize excess legal reserves released to them by the Federal Reserve authorities, and if they always responded sensitively to restrictive Reserve credit policies. But such is not the case.

A lowering of rates charged on loans encourages borrowing at the banks, and an increase of rates discourages borrowing. Changes in rates, however, do not always occur sensitively to changes in the reserve position of the commercial banks even in the central money markets. Interest rates are less sensitive to changed conditions in the smaller cities, and still less so in the country bank regions. Therefore, the volume of loans and deposits is independently affected by the rate policies of the commercial banks in so far as rates fail to be adjusted promptly to changing conditions.

Even if rates were not a factor, the volume of deposit money would be influenced by the quality, maturity, and other standards which are employed by bankers in passing upon credit applications. The volume of earning assets of all types could be materially expanded at any time if bankers would let down the bars on credit standards, pay little attention to the maturity distribution of their loans and investments, and forget the usual safeguards to preserve liquidity and solvency. Conversely, a raising of these standards would have the effect of reducing the volume of deposit money. The actual effect of variations of these standards has been to accentuate cyclical changes in the volume of deposit money. Bankers, like most people, become overoptimistic during the recovery

and prosperity phases of the business cycle, with the result that they tend to relax their standards and to lend more freely. The opposite is true during the decline and depression phases of the cycle.

4. The conditions of supply are not the only ones which bear on the volume of deposit money. Bank credit may be readily available, but there may be little public demand for it. The demand for credit by business firms depends on their view of profit prospects. Current operations will not be undertaken unless they promise to yield returns which cover at least the direct costs. Capital commitments will not be made unless the series of expected returns covers all costs, including interest, and leaves some reward for risk taking in the form of profit. A good illustration of this situation is afforded by the depression period, 1930–1940, when only nominal amounts of short-term and long-term credit were demanded by business, despite the almost continuous existence of record excess bank reserves and low interest rates. The explanation lies in the fact that political and economic uncertainties undermined the outlook for profitable operations. Thus, the volume of deposit money may for a period of years be restricted by conditions of credit demand.

The demands for bank credit by business and individuals, however, have been dwarfed since 1930 by the demand of the Federal government—first, as a consequence of deficits during the depression, and then as a result of huge deficits during the Second World War. To illustrate, holdings of U.S. government securities by member banks rose from \$4.1 billion on June 30, 1930, to \$14.7 billion on June 29, 1940, while loans declined from \$35.7 billion to \$14.0 billion. By June 30, 1945, United States government securities owned had risen to \$78.8 billion and loans had increased to \$20.6 billion. Largely under the influence of the demand for credit by the government, deposit money rose from \$32.8 billion on June 30, 1940, to \$93.7 on June 30, 1945.¹ Incidentally, this illustration also calls attention to the fact that the volume of deposit money is chiefly governed during a major war by credit demands growing out of the urgent necessities of war finance. Credit supply factors are passively adjusted to these urgent necessities even though it may involve leaving the gold standard and printing paper reserve money.

5. Finally, the volume of deposit money is affected by the public demand for (a) currency and (b) time deposits. It is obvious that when the public draws more currency out of the banks, the amount of deposits is correspondingly reduced; and that when currency is returned to the banks, the amount of deposits is thereby increased. But the effect of currency outflow from the banks, or of currency inflow to them is much

¹ SOURCE: *Federal Reserve Bulletin*.

deeper than this obvious result on the surface. This grows out of the fact that the legal reserves required to support currency are materially larger than the reserves required to back up the same amount of demand deposits. Assuming a 10 per cent legal reserve requirement on demand deposits, a \$10 gold certificate in the Federal Reserve bank will support legal reserve deposits of \$40 which, in turn, will support \$400 of member bank deposits. A \$10 gold certificate, however, will support only \$40 of Federal Reserve notes—just one-tenth as much.¹ It follows that the *potential* expansion of deposit money on the basis of a given amount of gold-certificate reserves in the Federal Reserve banks is materially reduced when the public demand for currency rises and is materially increased when the public demand for currency falls.

The volume of deposit money is also changed when people demand a larger or a smaller amount of time deposits. As in the case of currency demand, the effect of a shift from demand deposits to time deposits, or vice versa, has a deeper effect than is at first obvious. Assume that a customer shifts \$100 from his demand deposit account to his time deposit account in the same bank. The immediate effect, of course, is to reduce deposit money by the full amount. The ultimate effect, however, would be quite different under conditions of rising demand for bank credit, owing to the different legal reserve requirements which apply to demand and time deposits. The shift just assumed would release \$7 of legal reserves (using basic requirements of 10 per cent and 3 per cent, respectively) which would support a \$70 further expansion of demand deposits in the banking system. After such an expansion, deposit money would be \$30 *less* in amount than in the beginning, but time deposits would be \$100 larger; combined demand and time deposits would be \$70 larger in amount.

If the customer should shift \$100 of deposits in the opposite direction *i.e.*, from time deposits to demand deposits, the immediate effect would be to increase deposit money and to decrease time deposits by this amount. The ultimate effect would be the same as the immediate one if the member banks hold sufficient excess legal reserves, except that excess reserves would be reduced by \$7. The ultimate effect would still be the same as the immediate one if member banks should repair the deficiency in legal reserves by borrowing from the Federal Reserve banks. If, however, no new legal reserves are released through open-market operations, rediscounting, or otherwise, the reserve deficiency could be remedied only by the contraction of commercial bank loans and invest-

¹ For a more detailed explanation of this point, see pp. 273-275.

ments by \$70 which would extinguish an equal amount of demand deposits. That is, the final result would be a decrease of \$100 in time deposits, and an increase of only \$30 in deposit money. The amounts in this illustration would of course change under different legal reserve percentages, but the principle would remain the same.

It is interesting to compare the ultimate result of the foregoing example with a case in which the customer decides to buy a \$100 investment directly instead of investing indirectly by shifting \$100 to time deposits. In this case, the volume of deposit money would not be affected, since the check given for the bond would be deposited in some commercial bank by the seller. That is, an indirect investment of \$100 through time deposits immediately decreases deposit money \$100 and assuming credit expansion ultimately decreases it by \$30, whereas a direct investment of \$100 does not reduce deposit money at all. This difference arises from the fact that time deposits require legal reserves while government bonds, or other direct investments do not burden bank reserves.

Review Questions

1. Under a paper money standard what is the determinant of the amount of reserve money that shall be issued?
2. Name the factors which govern the amount of reserve money in a gold-standard country.
3. Explain the circumstances affecting the rate of world gold production.
4. Explain the conditions controlling the current allocation of gold between monetary and nonmonetary uses. What are the two main channels of use into which nonmonetary gold flows?
5. Explain the relationship between the distribution of monetary gold among the gold-standard nations and the international balances of payments of these countries.
6. What relation has the use of gold or gold certificates as currency to the amount of gold reserve money in a gold-standard country?
7. Discuss the factors which determine the amount of currency outside the Treasury and the banks in the United States.
8. Assuming constant the amount of ultimate reserve money, state the factors that govern the volume of demand deposits.
9. What determines the outer limit of deposit money expansion?
10. Explain the role of the central monetary authorities in limiting the amount of deposit money.
11. How are the loan and investment policies of commercial banks related to the amount of deposit money through (a) rates of interest charged on loans, and (b) quality, maturity, and other standards employed?
12. Discuss the demand for bank credit by business, individuals, and governments as a factor determining the amount of deposit money.
13. Explain how the amount of deposit money is influenced by the public demand for (a) currency and (b) time deposits.

Advanced Questions and Problems

1. Appraise the merits or demerits of a national policy that undertakes to augment the ultimate (gold) reserves of the banking system by striving to establish a continual yearly "active balance of trade."

2. "A country that uses gold as currency tends to draw more gold from abroad than if it used monetary gold only as legal reserve money." Develop proof of this statement.

3. Trace the process by which an internal drain of gold in a gold-coin-standard country before the First World War acted to check or reverse an external drain of gold.

4. "Under a gold standard the stock of reserve money is determined by more or less rigid physical factors." Support this statement and discuss its implications.

5. "The role of currency in the United States compared with deposit money is a passive one." Do you agree with this statement?

6. Assuming member bank reserve requirements of 15 per cent against net demand deposits and 5 per cent against time deposits, what change in the potential expansion of demand deposits would result from the transfer by depositors of \$100 million from time deposits to bonds held by the commercial banks? Explain.

7. Discuss the reasons for the change in the monetary gold stock of the United States between (a) December 31, 1933, and December 31, 1942; (b) December 31, 1945, and December 31, 1949. (SOURCE of data: *Federal Reserve Bulletin*.)

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CHAPTER XXI

FORCES GOVERNING THE VELOCITY OF CIRCULATION OF MONEY

Velocity of circulation has been presented heretofore simply as the number of times that the average stock of payment money (M) turns over during a given period, say one year, in making the total payments (M_p or MV), so that $V = M_p/M$. Velocity is thus the factor which relates the total *flow* of money to the *stock* of money (M). It may be visualized as the adjustable valve that governs the size of the money stream which meets the stream of valuable things in the price determining process of the market.

Like the other terms of the equation of exchange, V is a symbol that embraces components having wide differences. If the average dollar turns over 20 times in a year, this does not mean that all dollars experience this same turnover. Some dollars rest in bureau drawers and bank accounts, while others move about at varying rates of speed: The velocity of currency is considerably lower than that of deposit money—about half as great during the period 1896–1909, according to one authoritative study.¹ The different denominations of currency, ranging from 1 cent to \$10,000, circulate at different speeds; and deposits owned by business firms have a higher velocity than deposits owned by individual consumers—*income or consumers' deposits*. Moreover, wide velocity differences are present within each of these broad categories.

THE DEMAND FOR MONEY

Analysis of the forces governing the velocity of money requires a short digression with regard to what is meant by demand for money. Individuals, business firms, and governmental units all have need for a stock of money, partly in the form of currency, partly in the form of deposit money. This stock of ready purchasing power is needed chiefly to meet debts which should be paid before money receipts—largely from income—again replenish the money balance. Some of the debts to be met are for exact amounts due on definite dates, such as insurance premiums,

¹ Irving Fisher, *The Purchasing Power of Money* (New York, The Macmillan Company, 1911), p. 304.

taxes, and instalment payments. Other payments, however, are not so definite as to amount or the date on which they should be made. Unexpected expenses may arise because of sickness, accidents, uninvited guests, and so on. A portion of the money reserve of most individuals is held against contingencies of this sort.

Another part of the money fund is held to satisfy the sense of caution which is present in some degree in the make-up of most people. They prefer to hold a portion of their resources in the form of money for fear that bonds, stocks, real estate, and other investment assets may shrink in value. Such a fear may or may not have an intelligent basis. This sense of caution is satisfied in large part by the ownership of certain liquid claims which afford some return and which are not here classified as money, *e.g.*, time deposits, United States savings bonds, and short-term, high-grade obligations in general. But there is good reason to believe that the money fund is also importantly utilized to meet this requirement.

A final portion of the money fund is held to satisfy the speculative impulses which most of us possess. Securities or other property may have been sold at what was regarded to be inflated prices and the proceeds may be held temporarily as a money balance. Or again, a reserve of money may be held with the expectation of taking advantage of bargains in investments or in consumers' goods. As in the previous case, this motive is satisfied in part by holding money and in part by holding time deposits and other highly liquid claims. The sum of all the separate demands for money by individuals, business firms, governmental units, and other institutions, whatever the underlying motives may be, constitutes the total demand for money in the country.

The composite nature of the demand for money is not confined to the different motives which, as just described, lead to the demand for money; it is also present in connection with the different types of owners of money and the different phases of economic activity in which money is used. In this regard the information given in Table 13, page 188, is of interest. At the end of January, 1949, individuals (including farmers) owned about 36 per cent of total demand deposits while business firms held about 58 per cent. Manufacturing and mining concerns held 21 per cent, trading firms held 17 per cent, and financial concerns held 9 per cent. Thus, when allowance is made for farmers (included with individuals), a scant third of demand deposits was utilized by the consumers' economy as compared with nearly two-thirds in the business economy (including financial). The ownership of the \$25.2 billions of currency outside banks on this date would, however, show a very different dis-

tribution. While information on this point is lacking, it is reasonable to assume that about three-fourths of the stock of currency is held by individuals. If this is true, the total stock of payment money on this date was divided with the small half in the consumers' economy and the large half in the business economy.

The demand for money, as just developed, is sometimes called "liquidity-preference," following the terminology of Lord Keynes. However, the desire for liquidity is satisfied not only by money, but also by a wide variety of other highly liquid claims.¹ Standing in opposition to the demand for money are certain forces which make for economy in its use. Valuable resources tied up in money yield no return whatever, while investments in securities and other property yield an actual or prospective return. Also, resources in money form owned by consumers are continuously competing for preference with the whole range of consumers' goods available in the market. Thus, each owner of money decides for himself every day how much he wishes to hold, to invest, or to spend on consumption goods. The aggregate of these individual decisions represents the over-all decision of society on the question.

In order to visualize more definitely the relation between velocity of money (V) and the demand for money, it is desirable to introduce a new symbol K . Each spending unit in the economy has a demand for money in relation to anticipated expenditures which may be designated k . The sum of these separate k 's (Σk) equals K which is the aggregate demand for money in relation to total money payments during a given period. That is, it is the ratio M/M_p . This will be recognized as the reciprocal of V which is the ratio M_p/M . $K = 1/V$, and $V = (1/K)$. Thus the concepts V and K refer to precisely the same monetary relationship, only in one case the view is upside down as compared with the other. With this in mind it is now readily possible to write the equation of exchange in cash-balance form as follows:

$$\frac{M}{K} = PT \quad \text{or} \quad P = \frac{M}{KT}$$

It is also apparent that this way of writing the equation is entirely reconcilable with the former statement: $MV = PT$.

In line with the above discussion of the term K , it is sometimes said to stand for the "relative demand" for money—relative, *i.e.*, to anticipated money expenditures. To use a previous illustration, if the average stock of money is \$120 billion and total money payments during the year are \$2.4 trillion, K has a value of $1/20$, and the velocity of circulation

¹ See Chapter XVIII.

(V) is 20. However, K represents only one part of the "absolute demand" for money which may be visualized as the demand for a fund of *real* value in money form. In terms of the cash-balance equation, this "absolute" demand for money is the product of K and the physical volume of trade, T ; that is, $M/P = KT$. This places emphasis on the fact that the absolute demand for money is not a demand for a given number of money units (dollars) *unless* the purchasing power of the dollar is given. Instead, it is a command in money form over goods and other property. If the absolute demand for money (KT) remains the same, it would require twice as many units of money (M) to satisfy this demand if the price level is doubled and only half as many units of money to satisfy it if the price level is halved. When the price level is given, all units of money are demanded and owned by some one: $M = PKT$.

While it is formally correct to think of K as the proportion of anticipated money payments which people desire to hold in the form of money, this explanation does not accurately describe what goes on in the mind of the typical administrator of money balances. The typical owner of money does not think simply in terms of holding a sum of money which bears a certain ratio to his anticipated money payments during the period ahead. Instead, his mental processes are more nearly of this order: He has roughly in mind a schedule of money payments which should be made during the period ahead. Over against this schedule he has in mind a schedule of money receipts which as they arrive will augment his money balance. He aims to keep a balance of such size that payments can be met without reducing it below what he regards to be a safe minimum. In addition, he may wish to hold a reserve of money to satisfy (1) his sense of caution and (2) his speculative motives, as discussed above.

If this is a correct statement of the mental processes of the typical owner of money, it follows that the decisions underlying K are more complex than is indicated simply by the ratio of money held (M) to money payments (M_p). In fact, the decisions regarding the size of the money reserve dictated by motives of caution and speculation may well be more important at times in determining K than the amount of money held to make prospective money payments. The value of K , of course, varies directly with the strength of these motives, and the value of V , its reciprocal, varies inversely.

The way in which K influences the price level should now be evident from the cash-balance equation $P = M/KT$. If for any reason the size of money balances (M) becomes too large in relation to anticipated money payments, the rate (V) at which money is invested or is spent on

consumption goods is stepped up until the desired relation is established through higher prices. Conversely, if money balances become too small in relation to anticipated payments, the rate (V) at which money is invested or spent is retarded until the desired relation is established through lower prices. Thus, other factors remaining the same, the price level moves inversely with changes in the value of K . Also, it may be stated that the price level (P) is determined by the relation between the number of units in the money stock (M) and the "absolute" demand for money (KT). That is, P tends to change directly with M and inversely with (KT).

The reason for couching the analysis of the forces governing velocity of circulation in terms of its reciprocal (K) is that V is an objective fact of the market beyond the conscious experience of the individual. It is an over-all ratio (M_p/M) which can be determined only after the grand total of money payments for the period is known. In contrast, K can be explained in terms of the choices and decisions of individuals as they determine how much money they wish to hold in proportion to expected money payments. All economic facts and changes should, if possible, be traced back to the motives which account for individual decisions. Unless this is done, the explanation is likely to be vague and unrealistic.

FORCES GOVERNING VELOCITY

Some of the factors which govern the velocity of circulation of money exert a long-term influence and have only a minor effect on the short-term changes in V . These factors in general constitute the environmental framework in which the monetary system operates. More specifically, they include business practices with respect to money payments and receipts, the state of development of financial institutions, the state of development of other institutions whose operations indirectly affect monetary processes, and the prevailing attitudes of the people with regard to saving and spending. Other factors which bear on velocity exert principally a short-term influence. These include the following: the amount and nature of liquid claims not classified as money; investment and spending opportunities; the availability and cost of loans; the cost of holding money; changes in the volume of trade; and changes in the stock of money. The long-term and short-term forces will now be considered in turn.

Long-term Influences on Velocity. *Business Payment Practices.* One of the major long-term influences on velocity is the system of business payment practices. This system is the product of a long evolution and its roots lie in the customs, habits, and institutions of a country. Money

receipts may be at different time intervals (daily, weekly, monthly, etc.), and they may be regular or irregular. The same may be said of the schedule of money expenditures. Also, the schedules of receipts and expenditures may or may not correspond closely in amount and timing; in other words there is a greater or less degree of coincidence between them. The bearing which these factors have on velocity can best be visualized by means of a simple illustration.

Let us take first the case of a wage earner whose weekly wage of \$49 is received at 5 P.M. every Saturday. Assume also that he spends his income in equal amounts (\$7) each day at 10 A.M. The amount of his money balance at noon on successive days would be: Sunday, \$42; Monday, \$35; . . . ; Saturday, \$0. His average balance for the week would be \$21. Now suppose that he receives his pay (\$196) at the end of every fourth week instead of weekly and that his wage rate and his schedule of expenditures remain exactly the same as before. The amount of his money balance at noon on successive days would then be: first Sunday after payday, \$189; Monday, \$182; . . . ; last Saturday (next payday), \$0. His average balance for the 4-week period would be \$94.50 compared with \$21 when the interval between receipts was 1 week. If an interval of 2 weeks between paydays be assumed, the average balance would be \$45.50. From this example it should be clear that *the ratio (V) between money payments and the stock of money held tends to become smaller as the interval between money receipts is extended, and vice versa*. Also, V decreases somewhat more than proportionately as the interval is extended, and increases somewhat more than proportionately as the interval is shortened. The fact that the velocity of money in agricultural regions is lower than in the cities is in large part explained by the long interval between money receipts on the farm.

By a small change in the illustration just above, it can also readily be shown that *the velocity of circulation is highest when the schedule of money receipts has a uniform time interval, and that velocity declines as this schedule departs from a uniform interval*. For this purpose, let us compare a fortnightly schedule of receipts with one in which the wage earner receives his pay alternately at the end of 3 weeks and at the end of 1 week. In both cases he will have received the same amount of pay and the same number of payments in a 4-week period. With payment at the end of every 2 weeks, his average money balance would be \$45.50, while with the nonuniform interval his average balance would be \$57.75 (an average balance of \$70 for 3 weeks and of \$21 for 1 week.)

Another aspect of money receipts which affects velocity is that of *expectations* concerning their course in the future. A high degree of

certainly that receipts will continue to be realized regularly makes for a lower average balance and a higher velocity. On the other hand, a feeling of uncertainty as to how much receipts will be or when they may come, makes for higher balances and lower velocity.

Having dealt with the schedule of money receipts independently, it is now necessary to consider this schedule in relation to that of money expenditures. If it be assumed that the two schedules correspond perfectly in timing and amount, the only money needed would be reserves to satisfy the sense of caution and the speculative motive; velocity would be at a maximum. In terms of the illustration, the wage earner, having received his pay at 5 P.M. on Saturday, may be supposed to spend the entire sum on Saturday evening, buying all the things needed for the coming week. His balance held against payments would then stand at zero until the next payday.

If the schedule of payments has shorter intervals than the schedule of receipts, coincidence has to be something less than perfect. In the original illustration, it was seen that when the weekly wage of \$49 was spent in equal amounts daily, the average balance required was \$21.

Conversely, coincidence of the receipt and payment schedules departs from perfection when the payment intervals are longer than the receipt intervals. For this purpose the example may be varied by assuming that the wage earner continues to receive \$49 every Saturday, but spends 2 weeks' pay every other Saturday evening. This would result in an average money balance of \$73.50.

Moreover, perfect coincidence is not necessarily realized when the schedules of payments and of receipts have equal amounts and equal intervals. It is also necessary that the *timing* of payments correspond with the timing of receipts. To illustrate, if our wage earner's weekly wage of \$49 is received at 5 P.M. on Saturday and is held intact until the following Friday afternoon when it is all spent, his average balance would be \$42. But if he spends it all on Saturday evening for the goods needed during the coming week, his average balance during the week would be zero.

Banking and Credit Institutions. The degree of coincidence between the schedules of receipts and payments is greatly enhanced by the widespread use of credit in the business world. The system of open book credit enables the buyer to cumulate his expenses during the month and to make payment during the early part of the following month after the receipt of income. Also, if the income received fails to cover entirely the expenditures of the preceding month, it is frequently possible to carry over a part of the bill until the next payday. The system of instal-

ment credit goes much further in this regard than does book credit. It enables the buyer to purchase expensive products—automobiles, refrigerators, radios, and the like—by a series of payments geared to income receipts, and stretching over 18 months or more. In the field of real estate finance, it is possible to buy or to build a home with a monthly payment schedule which covers 20 years or more.

In contrast, a cash basis of payment would require that the buyer accumulate money and other liquid assets in advance of his purchases. He would also need an additional money reserve owing to greater uncertainties as to the amount and timing of expenditures.

A full appreciation, however, of how the credit system economizes money requires a view of all stages of production and distribution. The consumer buys on open account from the retailer, who buys on account from the wholesaler, who buys on account from the manufacturer, who buys on account from other manufacturers and from raw material producers. Payment on account by the consumer enables the retailer to pay the wholesaler, which enables the wholesaler to pay the manufacturer, and so on through the entire credit chain.

At the hub of this credit wheel stand the commercial banks and other credit institutions. A large part of the job of the commercial banks is to pool the money resources of the community and to redistribute them by loans to those business firms and individuals who need and can utilize them efficiently. By this means, money which would otherwise lie idle is transferred to someone who will put it to work. In this task the commercial banks are aided by all other credit middlemen who bring lenders and borrowers together—savings banks, savings and loan associations, investment dealers and brokers, life insurance companies, trust companies, commercial-paper houses, finance companies, factors, real estate mortgage dealers, and others. In addition, the speed with which money can be transferred to distant places through banking channels reduces the need for money in some measure. This is basically dependent, of course, on the systems of communication and transportation, but it is also dependent on banking facilities for the expeditious clearing, collection, and transfer of checks and other money claims.

The capacity of the commercial banks and other lending agencies to minimize the amount of money needed, however, goes far beyond the process of pooling and redistribution of the existing money stock. The actual amount of money held is much less than it would need to be *if lending facilities were not available*. A business firm with a formal or informal line of credit established at a bank can proceed in its operations

just as if this *potential* money were a part of its bank balance. Even without an understanding with the bank, business firms and individuals keep their borrowing power in mind in deciding upon the size of money balances.

Thus, the banking and credit system in various ways substantially reduces the amount of money needed to make the total money payments. In other words, it makes possible a much higher velocity of circulation.

Habits of Saving and Spending. Another long-term influence on velocity is the basic habit which prevails among the people with regard to saving and spending. A spendthrift is one who spends his income as fast as it is received, or perhaps even before it is received, by purchases on credit. He has a small demand for money relative to his expenditures, a high velocity. In contrast, the man who saves a part of his income is likely to require a larger reserve to satisfy his sense of caution. Also, his savings are likely to rest temporarily at least in his money fund pending investment. He has, therefore, a higher demand for money in relation to expenditures, a lower velocity. In general then, it may be stated that the velocity of circulation tends to be lower when a strong philosophy of saving exists among the people than when a spendthrift attitude prevails.

Nonmoney, Liquid Assets. A final long-period influence on velocity is the availability of nonmoney, liquid assets, such as time deposits; United States savings bonds; high-grade, short-term, readily marketable obligations; and other such assets. These assets do not qualify as money since they are not used to perform either of the two basic functions of money, *viz.*, to serve as a medium of exchange or as a measure of value. Nevertheless, they do provide a means of storing value, and hence they share with money the function of meeting the demand for liquidity. If a large volume of nonmoney, liquid assets is available, there will be a relatively small demand for money to satisfy the desire for liquidity; the velocity of circulation will tend to be higher and the stock of money to be lower in relation to the price level. Conversely, a small volume of nonmoney, liquid assets will make for a lower velocity and a larger stock of money in relation to the price level. It is also necessary to stress the *character* of the available nonmoney, liquid assets. If they consist largely of demand claims on the government and of insured time deposits—as was true in 1948—they serve the need for liquidity more adequately than if they are made up of claims which are not so safe and are less readily convertible into money on short notice. That is, the higher their liquidity, the more they relieve money of serving this need,

and hence the more they tend to increase the velocity of money. This factor is effective both in the long and the short term.

Short-term Influences on Velocity. *Business and Consumer Spending.* The availability and attractiveness of investment opportunities vary widely during the course of the business cycle. In fact, variations in the amount of investment largely explain the entire business cycle. When the prospect for net profit is appraised favorably by enterprisers, business spending is sharply expanded and idle money balances are put to work; velocity of circulation rises. On the other hand, when profit prospects are unfavorable, business spending is curtailed, and velocity declines. Consumers react similarly with respect to the prospective amount and certainty of their income. These forces are usually the dominant ones influencing velocity in the short term during peacetime.

The Rate of Interest. The rate of interest has two opposing influences on the velocity of money. In the first place, since money yields no return, the demand for it tends to change inversely with the rate of interest. When the yield on bonds is high, there is an added stimulus for one to hold less money and more bonds; velocity tends to rise and the stock of money to fall in relation to the higher price level. This condition is typical during the boom phase of the business cycle. But when bond yields are low one has less inducement to buy bonds and can hold money without so great a sacrifice of return; velocity tends to fall and the stock of money to rise in relation to the lower price level. Except for the panic phase, this has been a typical situation during business depressions. In the second place, a low rate of interest is an inducement to business firms to undertake expansion of capital investment and current operations, and to consumers to make outlays for houses and other durable goods. To the extent that the low rate is responsible for larger money expenditures, it exerts an influence to increase velocity. The opposite is true of a high interest rate.

It should be mentioned, however, that the relative impotency of a low interest rate to induce greater money expenditures was amply demonstrated during the depression of the 1930's. The prospect for business profits and for consumer income is the dominant short-term factor governing velocity; it is also a highly important influence on the interest rate operating through the demand for loans.

Costs of Holding and Using Money. In addition to the sacrifice in return (opportunity cost) which the holding of money entails, there may also be direct costs of *holding* or of *using* it. In general, the velocity of money tends to rise when direct costs are assessed against those who own it by the banks or the government. A penalty on money ownership

leads people to keep their money balances at a minimum. A government tax on the amount of bank deposits, such as that employed in some states, has this influence.

On the other hand, charges on the *use* (velocity) of deposits tend to reduce their velocity. People become more careful in the drawing of checks, and are inclined to pay their bills less frequently with the result that deposit balances accumulate. Bank service charges or government taxes based on the number of checks drawn have this effect. This tendency is modified, however, by the greater disposition to shift deposits to currency.

Another feature of bank service charges which makes for reduced velocity of deposit money is that of giving a credit allowance in proportion to the size of the account. Customers are induced thereby to enlarge their balances. Closely allied to this practice is the traditional one of requiring that a customer maintain a certain average balance as a condition to borrowing. In this connection, the well-known "20 per cent rule" has been most common in the United States. It requires that an average balance of \$20 be kept as one of the conditions to \$100 of borrowing power. While this rule has not been rigidly enforced, the general effect has been to increase the size of deposits relative to payments by check, *i.e.*, to decrease velocity.

Bank service charges, as now applied, and minimum balance requirements have the influence of *reducing* the velocity of deposits. Most banks apply a flat readiness-to-serve charge to each account, the effect of which is to discourage people with small incomes from having a checking account at all and to lead them to use currency instead of deposits. But once the decision is made to open a bank account, the flat charge has no tendency to minimize the size of the balance, and hence to increase deposit turnover. The predominant part of service-charge income arises from the activity of the accounts which makes for lower velocity as do also the credit allowance for size of balances and the minimum balance requirements. Incidentally, the marked reduction in the velocity of demand deposits since the 1920's is in part explainable by the rapid growth of service charges on demand deposit accounts.

Available statistics give no clue concerning the influence on the velocity of payment money (M) of the shift from deposit money to currency occasioned by bank service charges. It has been established that currency as a whole has a lower velocity than demand deposits as a whole. But it is impossible to say whether the part of deposits actually shifted would have shown a velocity different from the currency into which they were transformed.

There is little direct effect on velocity of money at present arising from government taxation in the United States. Deposits are not subject to a Federal tax. Certain states, however, levy a tax on the amount of deposits. These taxes have the effect of driving deposits into currency and of increasing the velocity of deposit money as a whole. It should be mentioned, however, that deposits have not always been exempt from taxation by the Federal government. A tax on the number of checks drawn was levied in 1933, but it was repealed in 1934. It is also of interest that Canada taxes demand deposits on an activity basis at the present time (1949).

A final point should be made with respect to the payment of interest on demand deposits. Prior to 1933, the banks usually credited their larger demand deposit accounts with interest at a rate bearing a rough relation to the level of rates in the money market. This practice was made illegal by the Banking Act of 1933, with a resultant tendency to minimize balances, and hence to increase deposit velocity.

Changes in T and M . While the velocity of circulation (V) is an independent factor in the equation of exchange, its actual value is always influenced by the forces which are summarized by T and M . An increase or decrease in the volume of trade is usually accompanied by an increase or decrease in V , although there is no reason to expect the change in V to be proportional. Nevertheless, a study of available statistics reveals that in practice V and T offset each other to a considerable extent with the result that prices are not affected so much as one might expect when viewing only the change in one of them.

Also, the value of V may be heavily influenced for short periods by changes in the stock of money (M). A good illustration of this is provided by the period of the Second World War when the stock of money in the United States increased more than threefold while velocity declined by almost one-third to the lowest level on record. The explanation of this situation lies mainly in the lack of private spending and investment opportunities, owing to rationing, allocation of scarce materials, and other government controls. Thus, it appears that sharp changes in the stock of money are likely to be responsible for inverse, and hence compensating, changes in velocity for short periods. After some delay, however, velocity can be expected to move in the same direction and therefore to reinforce the effect of the change in the money stock.

MEASUREMENT OF VELOCITY

Exact measurement of the velocity of money in the United States is impossible since the total amount of money payments (M_p) is unknown.

If these data were available, V could readily be computed as the quotient of M_p/M . However, reliable estimates of the annual velocity of demand deposits of all commercial banks in the United States are published by the Board of Governors of the Federal Reserve System. Total debits to demand deposit accounts are divided by the average amount of demand deposits during the year. Adjustments are made to exclude interbank deposits and cash items in the process of collection. Chart 10 compares these annual velocity figures with the amount of demand deposits since 1919. The vertical scale is logarithmic in order to measure the comparative rates of change.

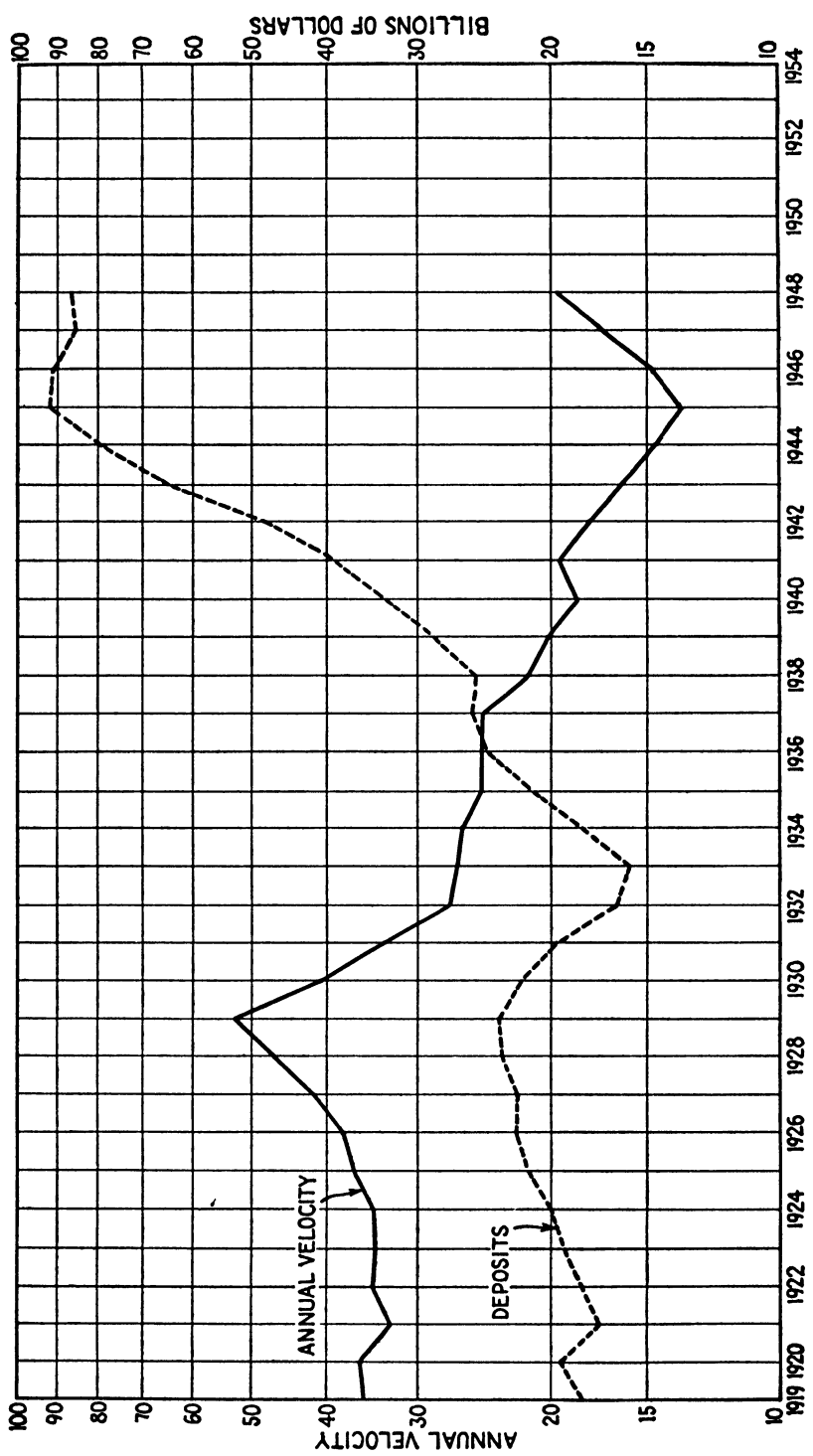
The outstanding lesson to be learned is that before the early 1930's velocity typically moved in the same direction as demand deposits and total money expenditures but was subject to wider cyclical swings. This relationship was firmly established as far back as 1875 by the late Carl Snyder, general statistician, Federal Reserve Bank of New York.¹ For example, velocity rose 64 per cent between 1921 and 1929 compared with a rise of 32 per cent in deposits; and between 1929 and 1933 it fell 50 per cent compared with a decline of 31 per cent in deposits. In other words, cyclical and other short-term changes in total money transactions were met more largely by changes in velocity than by changes in the stock of money. This basic fact was temporarily overshadowed by the vast expansion of deposits during the war and the abnormal conditions of war. But it will doubtless reassert itself again during peacetime. In fact, the marked rise of commodity prices since 1945 has been financed by the increase in velocity. Prices have risen despite a moderate decline in the stock of money and an increase of production.

Another significant fact suggested by Chart 10 is that the inflationary potentialities of a further rise of the velocity of money were far from spent in 1948. An increase of almost one-third would be required to regain even the velocity at the bottom of the depression in 1933, and an increase of two-thirds would be required to reach the average level in the years 1919-1926.

The statistical problem of determining the velocity of circulation of currency (paper money and coin) is a much more difficult one than that of determining the velocity of deposits. There is no practicable way of following directly the movement of particular pieces of currency as they pass from hand to hand. Velocity of currency could be readily determined if both the amount of currency (M_c) and total currency payments ($(M_c)_p$ during the period were known. It would be the ratio $(M_c)_p/M_c$.

¹ Carl Snyder, *Business Cycles and Business Measurements* (New York, The Macmillan Company, 1927), Ch. VII.

CHART 10. ANNUAL VELOCITY AND AMOUNT OF DEMAND DEPOSITS OF ALL COMMERCIAL BANKS IN THE UNITED STATES, 1919-1949.



Source: Board of Governors of the Federal Reserve System.

But while M_c is reliably reported, no statistics concerning $(M_c)_p$ are available. Professor Irving Fisher estimated that the annual velocity of currency varied between 19 and 22 times for the period 1896–1909, as compared with an annual velocity of demand deposits ranging from 37 to 53.¹ These estimates have not been brought up to date, however, and there have been no other authoritative estimates of currency velocity published in recent years.

Review Questions

1. "Velocity is the factor which relates the total *flow* of money to the *stock* of money." Develop this statement.
2. " V is a symbol that embraces components having wide differences." Explain.
3. Discuss the motives which give rise to the demand for money.
4. Comment on the distribution of ownership of payment money.
5. Define "liquidity-preference." What forces are balanced over against liquidity-preference?
6. Define the symbol K and show that it is the reciprocal of V .
7. Distinguish between the "relative demand" and the "absolute demand" for money.
8. Indicate the way in which K influences the price level in terms of the cash-balance equation $P = M/KT$.
9. Demonstrate the incidence upon cash balances maintained, and hence upon the velocity of circulation, of each of the following characteristics of receipt and expenditure schedules: short intervals, irregularity of intervals, high coincidence between receipts and outlays, and lack of confidence in income security.
10. Indicate the effects of the extended use of open book credit and instalment credit on the velocity of money.
11. "The commercial banks in various ways substantially reduce the amount of money needed, and hence contribute to a higher velocity of money." Support this statement.
12. Discuss the bearing which the prevailing habits of saving and spending have on the velocity of money.
13. What influence does the amount and character of nonmoney, liquid assets have on the velocity of money?
14. Describe the relation of business and consumer spending to the velocity of money.
15. Indicate the two opposing influences of the interest rate on the velocity of money. Which of these in your opinion is the more important?
16. What effect would a government tax on the amount of demand deposits have on velocity?
17. Explain the influence of the rapid growth of bank service charges since the early 1930's on deposit velocity.
18. How are changes in the volume of trade (T) related to V ? Changes in the stock of M ?
19. Study and interpret the significant facts brought out by Chart 10.

¹ Fisher, *op. cit.*, p. 304.

20. State the method by which the Board of Governors measures the velocity of demand deposits in the United States. Why cannot the same technique be employed in the case of the velocity of currency?

Advanced Questions and Problems

1. "The concept of velocity applies to payment money rather than to reserve money." Explain.
2. Discuss the reasons for couching the analysis of the forces governing velocity of money in terms of K rather than of V .
3. Is the velocity of money as readily controllable by the monetary authorities as the stock of money? Explain.

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CHAPTER XXII

FORCES GOVERNING THE PHYSICAL VOLUME OF TRADE

The physical volume of trade—the T factor in the equation of exchange—was of necessity given only preliminary consideration in Chapter XIX. At that point T was described simply as the number of physical units of things—goods, services, and securities—paid for with money during a given period, say one year. It is now necessary to carry this analysis further in an effort to learn more about the composition of the T factor and about the forces which govern its size. The discussion may logically be undertaken under two main headings: (1) the physical volume of production and (2) the velocity of circulation of goods.

THE PHYSICAL VOLUME OF PRODUCTION

The physical volume of production may be thought of as including the output of (1) consumers' goods and services and (2) producers' goods and services. Each of these categories may in turn be broken down on the basis of degree of durability, as follows: (*a*) services, (*b*) nondurable goods, (*c*) semidurable goods, and (*d*) durable goods. Services, whether to consumer or producer, have no durability whatever, and are necessarily produced and consumed simultaneously. These may be illustrated for the consumer by the services of a physician or by airplane passenger service; for the producer by the services of a public accountant or of electric power. Examples of nondurable goods for consumers are fresh vegetables and Christmas trees, and for producers are sweeping compound and coal. Semidurable goods may be illustrated in the consumers' field by shoes and tennis racquets, and in the producers' field by truck tires and conveyor belts. Examples of durable goods for consumers are automobiles and houses, and for producers are machine tools and factory buildings.

It will make for clarity if physical volume of production is considered under three headings, as follows: (1) productive capacity, (2) actual utilization of productive capacity, and (3) production for sale.

Productive Capacity. The productive capacity of a nation, and of the world, is limited by two sets of factors which may be labeled (1) technological and (2) economic. The former includes engineering and man-

agerial factors such as the amount and quality of capital equipment, methods of production, and managerial efficiency in organizing and coordinating business operations. The latter embraces the availability of natural resources, the size and efficiency of the labor force, and the complex array of factors that always stand in the way of attaining a level of output which may seem reasonable from a purely technological standpoint. Even in boom times, production falls short of what would appear to be a reasonable goal. This suggests that the economic system may be subject to certain chronic, long-term maladies. Moreover, during the short term, production is further limited by cyclical and seasonal forces and by fortuitous events, such as strikes, political developments, floods, droughts, and the like.

Gross exaggerations of practical productive capacity are frequently indulged in by those who think mainly in technological terms. Prominent engineers and business executives hold the opinion that production experts, if given free rein, could increase output within a year or so to a level several times higher than that ever attained in the past.¹ Such estimates, however, show little appreciation of the economic, political, and psychological aspects of the problem. Oftentimes they are based on the circumstances of a single industry, or on separate studies of the capacity of a number of industries. This approach almost invariably leads to an overstatement, since it fails to consider each industry as a part of the whole economy. For example, one industry might be able to treble output by working three shifts instead of the usual one. But all industries cannot move to a three-shift basis at once without encountering over-all limitations—shortages of labor, transportation, materials, and so forth. Such estimates are also likely to be based on the assumption that equipment and management are brought up to the level of the best current standard, or even to a much higher standard.

While it is interesting to speculate on production potentials under ideal conditions, this does not serve the present purpose. Rather, we are concerned with "practical productive capacity," by which is meant the capacity that can be utilized in practice under expected conditions with respect to materials, managerial efficiency, labor, production methods, and capital equipment. Practical productive capacity cannot be measured without due regard for the realities of seasonal and other periodic variations in each industry during the course of the year. Few industries are exempt from the necessity of operating at variable rates from one season to another, owing mainly to the effects of weather,

¹ See Columbia University Commission, *Economic Reconstruction* (New York, Columbia University Press, 1934), pp. 87-104.

style changes, tastes, and customs. The seasonal flow of agricultural products, many of which are perishable, requires that canneries and meat-packing plants operate on a highly seasonal basis. Annual style or design changes in consumers' goods, such as ladies' apparel and automobiles, make for seasonal peaks in these and related industries. Variations associated with the Christmas season illustrate the influence of customs. There are also shorter periodic variations within the month, the week, and the day which are important in many businesses. Electric light and power companies, for example, experience not only seasonal variations in demand, but also variations among the days of the week and the hours of the day. Since they must be prepared to meet peak requirements, they are burdened with unused capacity during off-peak periods.

Allowances must also be made for unavoidable work interruptions in estimating the practical productive capacity of the economy. Breakdowns of machinery, strikes, congestion of transportation, material shortages, fires, floods, windstorms, epidemics, and other such factors all have a limiting influence. Thus, the practical annual capacity of the economy is well below the grand aggregate of the maximum daily capacity of each business multiplied by the number of working days in the year.

The estimates of the practical productive capacity of the United States made by the Brookings Institution are of considerable interest in this regard. They concluded that production might have been increased 19 per cent during the boom year of 1929, and might have been increased 21 per cent during the so-called prosperous period, 1925-1929.¹ These estimates made due allowance for the various limiting factors discussed just above.

The limits of practical productive capacity have also been keenly experienced during and since the war. With unemployment reduced to a minimum and with about 60 million employed civilians during 1947 and 1948, the current output reached its practical maximum. Yet it was insufficient to meet the demand with the result that a material advance in prices occurred. The authoritative conclusions of the Council of Economic Advisers to the President are of interest in this regard. After calling attention to the near-capacity rate of production in 1947, they stated: "... we should within ten years be able to increase our annual national output by 35 per cent ... above the level of 1947."²

¹ E. G. Nourse and associates, *America's Capacity to Produce* (Washington, D.C., Brookings Institution, 1934), p. 422.

² "The President's Economic Report to Congress," *The New York Times*, Jan. 15, 1948, p. 10.

Since this increase is at an annual rate of 3 per cent, the Economic Advisers do not foresee a miracle of output. In fact, the rate they suggest is about the same rate of long-term growth of production that has obtained in this country since the Civil War.

Determinants of Productive Capacity. The question next arises: What are the basic determinants of the practical productive capacity of the economy? These are to be found in (1) the availability of natural resources, (2) population and the labor force, and (3) the existing state of technology in business.

The first determinant—the availability of natural resources—sets a physical limit on productive capacity. When these resources—climate, soil, minerals, forests, waterways, harbors, topography, and so on—are favorable and abundant, the economic efforts of man are richly rewarded. Such has been the case in the United States. On the other hand, when nature is niggardly, as in Greenland or in the desert wastes of North Africa, the environmental obstacles to production are forbidding. It should be observed, however, that the *availability* of natural resources to a national economy does not necessarily mean physical possession of the source of supply, at least in peacetime. Many small countries have achieved a relatively high standard of living in spite of limited natural resources within their borders. This achievement has been possible because of extensive trade with other countries. The British Isles, Denmark, and Switzerland may be cited as illustrations.

The second basic determinant of productive capacity is population. More specifically, it is the number of productive workers, their hours of labor, their efficiency, adaptability, and mobility. Probably no more than 60 per cent of the population can reasonably be included in the productive-worker group. For various reasons the rest are not directly productive; they are too young, too old, incapacitated, or unwilling to work. The proportion of these nonproductives varies in different countries and areas, and it changes gradually over a period of time. In general, as an industrial civilization develops, the proportion of nonproductives becomes larger, owing to the prohibition of child labor, lengthening of years of education, systematic provision for retirement and care of the aged, specialization of labor, and the growth of a leisure class. These factors are somewhat offset, however, by progress in the prevention of disease and in the restoration of the incapacitated to productive activities.

There is also a tendency for the hours of labor to be shortened as industrial society develops. For example, the average factory laborer in the United States worked 38 hours per week in April, 1949, compared

with 51 hours in 1914—a decline of one-fourth.¹ Thus, the size of the labor force as a productive factor can better be measured in terms of man-hours than in terms of the number of workers. Few would deny that practical productive capacity is materially reduced as the work week is shortened below about 48 hours.

A qualitative ingredient must be added, however, before the labor force can be related to productive capacity, *viz.*, the efficiency of labor. This depends in part on the capacities and training of workers and in part on motivation. A gradual increase in efficiency has taken place, and should continue to take place, as a consequence of improvement in educational programs, both general and technical. Education and training in technical skills, however, are not enough to ensure proper *motivation* of the worker, even though they may importantly contribute to it. Something more is needed to induce him to give his best to the job. The roots of proper motivation draw their nourishment from (1) the sense of moral responsibility which the individual worker feels toward his job, *i.e.*, the extent to which he feels obliged to give an honest day's work in return for fair pay; (2) the extent to which management implements forward-looking personnel policies that consider the welfare of the individual worker as well as that of the company; and (3) the degree to which union labor leaders promote, or destroy, a constructive attitude of workers toward their jobs, and also the degree to which unions adopt general policies that contribute to productivity.

A final factor bearing on the productive capacity of labor is the extent of irreducible unemployment, owing to technological changes, shifts in consumer demand, seasonal fluctuations, and other such causes. This depends largely upon the adaptability of workers, their willingness to move, and governmental arrangements to promote labor mobility.

The third determinant of practical productive capacity is the existing state of technology in business. This applies to (1) capital equipment, (2) production methods, and (3) the efficiency of management. During any short period of time, management must work with the factories, equipment, and other capital facilities that are available. New instruments of production can be built, it is true, but this takes considerable time. Existing capital equipment is limited in both quantity and quality. Much of it is old and inefficient, and part of it is obsolete.

Methods of production and distribution must also be accepted in their present state. New mass production techniques can undoubtedly be applied in backward industries such as building construction, but this cannot be done in a day.

¹ U.S. Department of Labor figures.

Finally, business managers must be taken as they are, with their present abilities to organize and coordinate productive activities and to cope with personnel, labor, and other management problems.

Utilization of Productive Capacity. It is one thing for a country to have a certain practical productive capacity; it is quite another proposition to make full use of this capacity, especially in a private enterprise economy. Maximum production is a goal which we seldom, if ever, attain. In fact, the most serious defect in the private enterprise system, as we know it, is its inability to maintain high-level production and employment. Achievement of this goal is thwarted by numerous obstacles which may be grouped under headings, as follows: (1) business fluctuations, (2) unwise policies pursued by private interests, (3) mistaken policies of action or inaction by government, (4) the inadequacy of effective demand, (5) a lack of coordination between productive capacity and demand, (6) failure to realize international trade cooperation, and (7) war and its aftermath. It is impossible here to give more than a brief comment on each of these obstacles.

1. Business fluctuations are of different types which are often designated as (a) cyclical, (b) seasonal, and (c) fortuitous. It is assumed that the reader is familiar with the business cycle and its succeeding phases of boom, decline, depression, and recovery. No satisfactory solution has yet been found for the avoidance of the decline and depression which follow the high-level production of the boom phase. In a major depression, industrial production declines between one-third and one-half from its former peak. Economic activity as a whole declines somewhat less—usually between 10 and 20 per cent. Thus, the existence of the business cycle is one of the major factors accounting for our failure fully to utilize productive capacity.

To a large extent, seasonal variations in business are unavoidable and beyond the power of management to correct. This portion of these variations must be deducted in arriving at practical productive capacity. In some degree, however, it is possible for management to iron out those effects. In so far as this is possible, seasonal variation may properly be regarded as an obstacle to the attainment of practical productive capacity.

Business fluctuations from fortuitous causes are also unavoidable for the most part, and must be allowed for in the concept of practical productive capacity. This is true of storms, floods, and other acts of nature. Interruptions from strikes, however, are man-made, and perhaps in time other methods of settling industrial disputes can be devised.

2. Private interests are responsible for various policies which are incon-

sistent with full utilization of productive resources. Most of these policies are selfish in nature and are based on monopoly power, whether exercised by management, labor, or some other interest. Management is often guilty of setting prices too high, preferring a wide profit margin on a smaller number of product units to a narrower margin on a larger number of units. This high-price policy must be backed up by an output-limitation policy, since buyers are unable or unwilling to take so much at the higher price. Labor unions are likewise often guilty of forcing wage rates too high at the expense of all other members of the community, and sometimes at their own expense as well. This policy is associated with labor-limiting activities such as spreading the work, slowdowns, featherbedding, closed unions, and strikes.

Policies of this nature on the part of both management and labor make for an economy of scarcity rather than for an economy of plenty. Also, they play a large part in creating the maladjustments which are responsible for cyclical fluctuations.

3. The points of contact between government and business have become so numerous and so vital that mistaken government policies frequently constitute serious obstacles to high-level production. Nothing more than a suggestive outline of this broad field can be presented here.

Government policies are often inconsistent with the basic features of the private enterprise system which is charged with the responsibility of production. More particularly, it is often forgotten (1) that competitive conditions must be preserved in order to give reasonable assurance that products of good quality will be available to consumers at fair prices, and (2) that the profit motive is the chief driving force in a private system. With respect to competitive conditions, it is first necessary to separate the monopoly industries from the competitive industries. The monopoly industries should either be effectively regulated or publicly owned and operated. In the competitive field, on the other hand, monopoly conditions should be promptly destroyed wherever they appear. This done, prices can be determined in a free market, with the result that only a minimum of detailed regulation is necessary. The greatest mistake of public policy in this regard has been that of countenancing monopoly in the competitive field with the accompanying evils of output limitation, unduly high prices, questionable product quality, and excessive profits. Monopoly has also been permitted to grow up in labor unions without its logical counterpart of public regulation.

With respect to the profit motive, it is of prime importance that all government policies be consistent with the basic fact that the profit motive is the main driving force in a free enterprise system. Conse-

quently, if the prospect for profit is seriously undermined by the various policies of government in relation to business, enterprisers quite naturally refuse to assume new business risks. When this mainspring of the business clock is broken, new ventures come to a standstill; employment and production sharply decline. Profit prospects may be dangerously impaired by (1) excessive and inequitable taxation; (2) burdensome regulations; (3) labor laws which unfairly penalize enterprise; (4) direct government competition, or the threat of such competition; (5) broad social reform programs which are pressed so rapidly that business is unable to make adjustments; and (6) unwise over-all government policies mainly in the fields of public finance, monetary control, and international relations.

While government policies should not disregard our fundamental reliance on the profit motive, there are also dangers that arise from excessive profits. If they are too large, speculative activities may be unduly encouraged. Also, the proper balance between consumption, saving, and investment may be broken. That is, the disposition to purchase consumers' goods with the profits share of the national income is less than it is with the wages share, since in general those persons receiving profits belong to a higher income group.

The herculean nature of the task of formulating and administering well-balanced government policies at so many points is clearly evident even from this brief summary. It is not easy to set the profits throttle of the engine of production so as to maximize output and at the same time prevent excessive profits, curb monopoly, permit needed regulation, raise public revenues, provide an adequate social-security program, promote satisfactory labor-management relations, and carry on other government activities.

4. A fourth obstacle to full utilization of productive capacity is the inadequacy of effective monetary demand to purchase the current output of consumers' goods at prices which cover all costs of production. To a large extent, this is a surface evidence of deeper difficulties. It cannot, therefore, be more than partly solved by the provision of more money purchasing power by the government. One of the underlying difficulties usually lies in the distribution of money income. As the national income rises, there is a tendency to save a larger proportion of it and to spend a smaller proportion on consumers' goods. This tendency is all the stronger if the higher income groups receive a larger percentage as the national income expands. Measures designed to bring about a wider distribution of income, such as the graduated income tax, are the principal remedy. Yet these measures cannot be pushed too far without

unduly curbing the profit motive, and thereby reducing the amount of national income to be distributed.

Another underlying difficulty lies in the relationships between costs and selling prices. If wage costs in particular fields, or in general, are too high in relation to selling prices, employment and production decline. On the other hand, if wage rates are too low in relation to selling prices, profits become excessive, consumer purchasing power becomes inadequate, and a depression is generated. The only remedy here is the elimination of such cost-price maladjustments by corrective policies on the part of labor, management, and the government.

Still another important difficulty is the lack of sufficient demand for capital goods by business, with the result that employment and demand for consumers' goods are both below capacity. Again, there is no simple solution. The amount of private capital-goods demand depends on the long-term prospect for profit. This in turn depends on the whole complex of factors which make up the prospective economic environment, including political and social forces and institutions. The greatest contribution of government in the solution of this difficulty is that of promoting a healthy environment for business enterprise on all fronts. Supplementary public investment programs should be undertaken only when it is clear that private investment will be inadequate to support reasonably full employment. Also, such programs, if undertaken, should be planned with careful regard to their repercussions on private enterprise.

5. Closely related to the general inadequacy of effective monetary demand is the lack of coordination between productive capacity and demand. Even on the supposition of adequate effective monetary demand, it would be impossible fully to utilize productive capacity, especially for short periods of time. Unless the enlarged national income were widely distributed, too much would be saved and too little of it would constitute demand for mass consumers' goods. That is, the new demands would not closely correspond with existing excess capacities; shortages in luxury goods and in capital goods would develop in the presence of idle factories and workers in other fields. Moreover, even on the assumption of a wide distribution of the new income, demand would still be imperfectly adjusted to existing excess capacities. Shortages would develop in some industries well before excess capacities were absorbed in others. If the shortage were in a key industry such as transportation, electric power, or steel, its limiting effects would be widespread. Capital expansion would, of course, eliminate the worst of these limitations one by one, but this would require considerable time—two or more years at best. In fact, perfect adjustment of capacity to

demand can never be attained because of the continuously changing pattern of consumer demands, new inventions, new methods, and other changes.

6. Failure to realize the potentialities of international trade cooperation is always an abstacle—often a serious one—to high-level production.¹ Obstructions to the free flow of trade and investment over national borders mean basically that the resources of no nation, and, hence of the world, are being utilized to the best advantage. This is true whether the obstructions take the form of tariff barriers, embargoes, quotas, foreign exchange controls, or other devices. A country with abundant and varied natural resources, such as the United States, is not so severely handicapped by trade restrictions, of course, as a small country with limited resources, such as Great Britain. But no nation is exempt.

The obstacle from this source is particularly serious when international commercial policies are in a period of rapid change. If barriers are raised against the normal exports of a nation, it is not alone the export industries which suffer but also the industries dependent on imported materials. The reduction of exports reduces the amount of foreign exchange available for the purchase of imports. Conversely, if import restrictions to which a nation has become adjusted are suddenly removed, the cheap imports will cause unemployment and large unused capacity in the industries which previously grew up behind the barrier to imports. These ill effects will in part be modified in the whole economy by the stimulus given to the export industries, to those industries using imported materials, and to those industries benefiting from the release of consumer purchasing power.

7. A final obstacle to the full utilization of productive capacity for peacetime goods is the failure of mankind to settle international disputes without resort to war. Preparation for war, actual warfare, and recuperation from maladjustments arising from war have largely shaped the pattern of economic life so far in the twentieth century. The economic costs of war cannot be measured alone by the use of labor and other resources in the production of war goods or by the destruction of existing wealth. There must also be included the crippling effects of war-born maladjustments on the peacetime economy. In the event of a major war, these maladjustments cannot be corrected short of one or more decades.

In conclusion, it should be evident that there are always a host of obstacles which must be surmounted before full utilization of practical productive capacity.

¹ The assumption of a closed economy is dropped for the moment.

Production for Sale. Strictly speaking, it is necessary to make a distinction between total physical production and "production for sale." The former and broader concept includes goods and services which are directly consumed or utilized by the producer, and also those which are bartered without the use of money. The latter concept excludes both of these categories, and includes only the goods and services which are *produced for sale*, *i.e.*, which require the use of money as a medium of exchange. The Vermont farmer who produces a variety of things that are directly consumed by his family—milk, butter, eggs, meat, maple sugar and sirup, vegetables, furniture, and so forth—has no demand for money with respect to these items. Nor is money required if he swaps three pigs for a cow, or four gallons of maple sirup for his neighbor's homemade ox yoke. Thus, only the goods and services produced for sale are a component of the volume of trade (T) factor in the equation of exchange.

However, since the bulk of current output in the modern economy is produced for sale, this distinction may ordinarily be disregarded. Yet it is significant in explaining certain price-level changes. For example, the decline in importance of direct consumption and of barter in the economy has gradually increased the demand for money since the colonial period, and has therefore been a factor making for lower prices over the years. An offsetting factor has been at work, however, especially since the last quarter of the nineteenth century, *viz.*, the growing integration of business. When the Ford Motor Company undertook some years ago to mine its own coal and ore, provide its own transportation, make its own steel, parts, and other materials, the demand for money declined relative to automobiles produced. Transfers of raw materials, parts, and subassemblies which had previously been made between separate business units and had required the use of money, then became purely interdepartmental. In the short term the distinction likewise has significance at times, as when direct consumption and barter increase during the chaotic period following a major war. This reduces the demand for money and makes for higher market prices.

THE VELOCITY OF CIRCULATION OF GOODS¹

Just as the stock of money (M) exhibits a certain velocity of circulation or turnover (V), so also the stock of goods has a velocity of circulation which bears on general prices. In arriving at the volume of trade

¹ In preparing this section, the writer has been most influenced by the penetrating analysis of this topic by Professor Arthur W. Marget. References to his articles and work are given at the end of this chapter.

(*T*), one must know not only the volume of current production for sale but also the turnover of this product. In addition, one must have similar information with respect to the stocks and rates of turnover of all other valuable objects intended for sale during the period.

Definition. The velocity of circulation of goods may be defined as the number of times that goods intended for sale change hands on the average during a given period of time. Theoretically, this velocity could be measured directly by following the course of each good through the market, after which an appropriate average of the individual goods turnovers might be computed. The physical impossibility of keeping such a record, however, requires that an indirect method of measurement, similar to that used in determining the velocity of money, be employed. That is, the velocity of circulation of goods is equal to the ratio:

$$\frac{\text{Physical volume of sales}}{\text{Physical volume of goods on sale}}$$

The numerator of this ratio is composed of the number of physical units—tons of copper, bales of cotton, barrels of oil, and so forth—actually sold during the period under consideration, say one year. The denominator includes the average number of physical units of goods (valuable objects) definitely intended for sale at prevailing prices during the same period. The phrase “at prevailing prices” is necessary in order to draw a reasonably clear line between “goods intended for sale” and “goods not intended for sale.” Wheat which is not on sale at a price of \$1.50 per bushel may be offered at a price of \$1.75. In fact, few goods would not be on sale at some price. This phrase is also needed to prevent the inclusion of goods actually offered at prices far above the prevailing market price. For instance, one may reasonably question the intent of the farmer who lists his land with a real estate broker at \$200 per acre when the prevailing price on similar land is about \$100 per acre.¹ The employment of a representative average of the physical volume of

¹ The difficulty of accurately separating “goods on sale” from “goods not on sale” suggests that this problem be avoided by enlarging the denominator of the ratio to include all goods in existence. But this alternative has the serious drawback of creating a term composed very largely of goods which will seldom if ever be on sale, with the result that the velocity of circulation of goods would be grossly understated for the “goods-on-sale” category and would be grossly overstated for the “goods-not-on-sale” category. For this reason, the use of “goods on sale” is believed to be preferable despite its approximative nature. For a full discussion of this and other alternatives, see A. W. Marget, “The Definition of the Concept of a ‘Velocity of Circulation of Goods’, ” *Economica*, Vol. 12, pp. 431-456; Vol. 13, pp. 275-300.

goods on sale during the period is desirable just as it is in the case of the stock of money when determining its velocity. Theoretically, the average should be computed on the basis of infinitely small time intervals, but an average of monthly reports of goods on sale should be satisfactory.¹

The category "goods on sale" is made up of several components, as follows: (1) goods produced and intended for sale during the current period; (2) goods produced in previous periods but carried over and intended for sale in the current period; (3) secondhand consumers' goods produced and sold to consumers in previous periods but returned to the market again in the current period; and (4) secondhand producers' goods returned to the market in the current period. If our simplifying assumption of a closed economy be abandoned, it would be necessary to subtract "goods exported" from (1) above and to add a fifth component: goods imported and intended for sale.

For analytical purposes it is helpful to separate the velocity of circulation of goods into two elements: (1) the production flow of goods and (2) the marketing flow of goods.

Production is used here in the narrow sense of creating form utilities; it embraces manufacturing, construction, agriculture, and the extractive industries. Production processes mature in a flow of final products, either consumers' goods or producers' goods. The system of business specialization, however, breaks the entire process for most products into many separate steps, beginning with the mining or farming operation and ending with the final product, say an electric refrigerator. The copper coils used in a refrigerator may be traced back to the miner who sells copper concentrate to the smelter who, in turn, sells blister copper to the refiner. The refiner then sells the electrolytic copper to various fabricators of which the copper coil fabricator is one. The latter sells to a sub-assembler, or directly to the refrigerator manufacturer who sells the assembled refrigerator to the retailer. At each one of these stages there is a goods offer and the product thereupon enters the class of "goods on sale"; when sold it becomes part of the numerator "goods sold." Since a different product is on sale in each case, the velocity of circulation of each product is one.

¹ In order to satisfy statistical requirements, a logical system of weighting the physical quantities in the ratio would be necessary. Tons of steel, number of automobiles, yards of cloth, shares of stock, etc., could not, of course, be added to a significant total. One method of meeting this difficulty would be that of weighting (multiplying) the physical quantity of each good by a normal unit price. An aggregate dollar value could then be computed for both the numerator and denominator.

The marketing processes, as here defined, are those which involve middlemen—jobbers, wholesalers, dealers, and retailers—who do not change the physical form of the product. In the example of the refrigerator just cited, jobbers or other dealers might operate between any of the succeeding stages. If a jobber purchased the copper coil from the fabricator and sold it to the manufacturer, then the coil would show a velocity of 2 instead of 1. When production and marketing processes are moving at the same pace, the inventory of goods produced for sale remains the same. But if the marketing flow of goods to consumers and users is more rapid than the production flow, the stocks of goods on sale decline. This would result in a rise of goods velocity, since the volume of goods sold (numerator) would increase and the volume of goods on sale (denominator) would decrease. The opposite would, of course, be true when the marketing flow is less rapid than the production flow. Speculative trading in commodities, real estate, or securities increases the marketing flow and the velocity of goods. In view of the significance of the size of goods inventories in analyzing price prospects and the business outlook, the marketing flow of goods is definitely a useful concept.

Two further questions may be raised concerning the goods velocity ratio: Should securities be included in physical volume of goods? Should services be included? An affirmative answer can be given to the first, and a negative one to the second. Shares of stock, bonds, and other securities can be counted in units just as physical goods are counted, and they likewise exhibit a turnover which has a bearing on the value of money. The weight of argument, therefore, points to their inclusion. Services, however, present a very different problem. Since by nature they must be produced and consumed simultaneously, there is no "stock" of services, and hence there can be no turnover of services. To be sure, they may be embodied in, and may contribute to, the value of a product, but in this case the result is a *different* economic good. Services, therefore, are not included in determining the velocity of circulation of goods.

Relation between the Velocities of Goods and Money. The question is often raised in monetary theory whether the velocities of goods and of money do not exactly cancel each other in the equation of exchange, so that they may be entirely disregarded in price-level determination. On first view, this suggestion may appear to be valid. Is it not true that money changes hands in every transaction in which goods change hands, that there cannot be a purchase in which the buyer parts with money without a sale in which the seller parts with goods? A colorful statement of this view is that of Professor H. G. Davenport, as follows:

In the days of square dances, the figure called the "grand right-and-left" required that four men of the quadrille circle in order to the right and four women to the left—all so returning to their original places—the men and women interweaving and tracing this circular movement, and touching at each passing.

Problem: What would happen were the men individually or in the aggregate to clasp hands with the women twice as often as the women with the men? Billiards also would be perplexing, not to say impossible, were it permitted that some balls be more often kissing than kissed. So again, social and legal complications would multiply were, say, more men than women to enter marriage. . . . Changes of the ordinary sort in the *rate of turnover* either of media or of goods can occur only as the changed rate of the one goes along with the changed rate of the other.¹

In spite of the dramatic plausibility of this argument, it is nevertheless erroneous. It is, of course, true that money is always paid for goods in each transaction, but nothing is said concerning the *terms* of the exchange. How much money is given for how many units of goods? A change of the money price of the article will permit a change in the velocity of circulation of goods without any change in the velocity of money, and vice versa. In fact, since each of these velocities is an independent factor in the equation of exchange, each one may be offset by any one of the several influences summarized in that equation. This is not to say that the two velocities do not in fact show a statistical tendency to rise and fall together, and thus to nullify each other. It is only to say that this is not *necessarily* the case. While the offsetting tendency cited has been typical in most business cycle fluctuations, it has been no more than a rough offset. Indeed, the period 1933–1945 affords an example of a marked decline in the velocity of money accompanied by a *rise* in the velocity of goods.

A simple illustration may clarify the independent character of these two velocities. Assume that 100 men are being fed at a college dining hall at the price of \$10 per week. Let the food served during a typical week represent "goods on sale" and the \$1,000 paid weekly by the students represent the "stock of money." Suppose that a sharp rise in costs requires that the price per week be raised to \$15 for the same quality and portions of food. This would mean that the velocity of money has increased from once per week to $1\frac{1}{2}$ times, while the velocity of goods has remained the same. If the adjustment had been made by cutting down the portions of food instead of by raising the price, the velocity of money

¹ H. G. Davenport, "Velocities, Turnovers, and Prices," *American Economic Review*, Vol. XX, pp. 9ff., 13f., 18f., 1930. Cited by A. W. Marget, "The Relation between the Velocity of Circulation of Money and the Velocity of Circulation of Goods," *Journal of Political Economy*, Vol. XL, p. 296, 1932.

would have remained the same but the velocity of goods would have declined from 1 to $\frac{2}{3}$ times per week. Returning to Professor Davenport's examples, it will be noted that they do violence to the facts of the problem, since in each case the objects selected to represent goods and to represent money were expressed in an indivisible unit, *e.g.*, one person. But units of money and units of most goods are divisible so that the terms of exchange can, and do, change.

THE VALUE OF TRANSACTIONS (PT): A SUMMARY

When the forces underlying the T factor of the equation of exchange are examined, it becomes clear that it breaks down into (1) the physical volume of goods on sale (G), (2) the velocity of circulation of those goods (v), and (3) services sold (T_s). Goods on sale include not only goods currently produced for sale, but also goods and securities already in existence which are returned to the market. The velocity of circulation of goods (v) is represented by the ratio:

$$\frac{\text{Physical volume of sales}}{\text{Physical volume of goods on sale}}$$

It (v) is also composed of two subdivisions: (1) the production flow of goods and (2) the marketing flow of goods.

The velocity of circulation of goods (v) and the velocity of circulation of money (V) are logically independent factors, although in fact they frequently move in the same direction so that they often roughly offset each other.

Giving effect to the various subdivisions of T , the equation of exchange may be rewritten as follows:

$$MV = PT = P_g Gv + P_s T_s$$

where P_g refers to the average price of goods and P_s represents the average price of services.

Review Questions

1. Indicate the chief components of the physical volume of trade (T).
2. Of what categories is the physical volume of production composed?
3. Define the two sets of factors that limit the productive capacity of a nation.
4. Define practical productive capacity. How does it differ from potential capacity under ideal conditions?
5. Why is practical productive capacity frequently exaggerated by those who think mainly in technological terms?
6. Discuss the basic determinants of the practical productive capacity of the economy?
7. List and discuss the obstacles to complete utilization of the economy's practical productive capacity.

8. "Out of the total physical volume of production, only 'production for sale' enters into the T factor in the equation of exchange." Explain.

9. Define the velocity of circulation of goods. How may this velocity be measured?

10. Interpret the term "goods on sale"; point out the categories of goods included or excluded.

11. Distinguish between the marketing flow of goods and the production flow of goods in the determination of the velocity of circulation of goods.

12. Should securities be included in determination of the velocity of circulation of goods? Should services be included? Discuss.

13. Despite some degree of correlation, the velocity of goods and the velocity of money are essentially independent variables. Discuss.

14. Interpret the equation $MV = P_g Gv + P_s T_s$. Why is it appropriate to analyze separately the goods and services components of the value (PT)?

Advanced Questions and Problems

1. "The availability of natural resources to a national economy does not necessarily mean physical possession of the source of supply in peacetime." Develop this statement.

2. "The contribution of the labor force to productive capacity cannot be accurately measured by the number of workers in the force." Support this statement.

3. "One of the obstacles to full utilization of practical productive capacity in the economy is the inadequacy of effective monetary demand to purchase the current output of consumers' goods at prices which cover all costs of production." Expand this statement.

4. Demonstrate that the T factor in the equation of exchange is a dynamic one which importantly influences the general price level.

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CHAPTER XXIII

INTERPRETATION OF PRICE CHANGES: LONG-TERM TRENDS

Up to this point the analysis of the forces which govern the price level has necessarily been general in nature. The equation of exchange has been employed to aid in visualizing a continuous stream of money payments (MV) being made by buyers for a continuous counterstream of valuable physical objects (T) at an average price (P). This over-all approach is essential as a framework for more detailed studies to which we now turn. The object of this chapter is to apply this method in the explanation of long-term trends in prices and production.

THE PRICE SYSTEM

Two aspects of the price system should always be distinguished, *viz.*, the structure of prices and the level or scale of prices. The former refers to the myriad of individual prices and to the various subgroups of prices which are significant in the study of particular problems. Explanation of the price structure requires the general theory of value which makes use of schedules of demand and supply to account for the realized prices of the market. This aspect of prices was developed in Chapter III, and there is no need for repetition here. The price level, on the other hand, is an over-all average of prices which individually exhibit a considerable dispersion from their central tendency. Explanation of the general level of prices requires analytical methods which are provided only by the theory of money and prices as distinct from the general theory of value.

The close relation between market schedules of demand and supply—which govern the individual prices forming the price structure—and the equation of exchange may now readily be discerned. Realized prices and physical quantities are determined by interacting demand and supply schedules. That is, $d = pq$, when d represents the money demand for a product during a given period, p the average realized price, and q the total physical quantity sold. It follows that the sum of all realized money demands is $\Sigma d = MV = PT$. This is the link connecting the general theory of value with the theory of money and the price level.

Thus far, the equation of exchange has been employed only to sum-

marize the forces that govern the price level, but its useful application is by no means limited to this general purpose. By the use of subscripts for the terms it is possible to present the included transactions in any desired detail. For example, if it is desired to separate prices of consumers' goods, prices of producers' goods, and other prices, the equation may be stated as follows:

$$M_1V_1 + M_2V_2 + M_3V_3 = P_1T_1 + P_2T_2 + P_3T_3$$

where subscripts 1, 2, and 3 refer to these subdivisions, respectively. M_1 in this case represents the amount of money held by consumers to meet their expenditures, and V_1 indicates the velocity of M_1 . M_2 represents the money held by producers against their expenditures, and V_2 indicates the velocity of M_2 . It is also possible to present any one of the subgroups separately in a partial equation, for example, $M_1V_1 = P_1T_1$. In this manner, the price structure can be broken down into whatever classifications best serve the problem at hand, whether it be an investigation of farm and nonfarm prices, of wage rates and the cost of living, of raw material and finished product prices, or of other price groups. In view of the wide differences between wage rates, stock prices, and other components of the price system, close analysis always requires an appropriate breakdown for the problem at hand.

The definitions of the general price level and of the price structure given above may suggest an erroneous approach to the theory of price-level determination. Since demand and supply schedules govern individual realized prices, and since the general price level is an average of realized prices, one may be led to the conclusion that the general price level can be definitively explained by the interaction of an aggregate demand schedule and an aggregate supply schedule. But this is not the case. Explanation of the general price level requires the recognition of the broad forces summarized in the over-all equation of exchange, *i.e.*, the stock of money, the velocity of money, and the volume of trade. Demand and supply schedules explain individual prices and price relations within the price structure, and in this capacity they are tools designed for use in the general theory of value. But the position and shape of each demand and supply schedule is conditioned by the positions and shapes of all the others. Moreover, all of them are conditioned by present facts and expectations with regard to the stock of money, its velocity, and the volume of trade as these factors bear on prices. That is, these schedules assume an absolute height of general prices which is what it is because the foregoing factors have reached a temporary balance. If this balance is disturbed by a change in one or more of them, the effects are transmitted

to realized prices through individual demand and supply schedules. Thus, while these schedules are the proximate mechanism through which all actual changes in free prices take place, a more ultimate explanation of the price level—a theory of money and the price level—is an essential supplement to them.

LONG-TERM PRICE TRENDS

For the present purpose a long-term price trend covers a period of sufficient length to be uninfluenced by cyclical movements. This means at least 15 years and preferably longer, so that cyclical and other short-term price swings may be regarded as deviations above and below the trend.

The analytical method already developed in terms of the equation of exchange, $MV = PT$, suggests the general approach which the explanation of any price trend may well take. A rising trend suggests an increase in the ratio between monetary expenditures and the physical volume of trade (MV/T); a declining trend suggests a decrease in this ratio. It is the task of the monetary analyst to assemble all relevant information concerning the forces which are summarized by each of the terms of the equation and to develop therefrom the most reasonable explanation.

Reference to Chart 1, page 30, indicates that there have been seven long-term price movements in the United States as follows:

1. 1789–1814, a rise from 59.0 to 124.8, or 111.5 per cent.
2. 1814–1848, a decline from 124.8 to 56.0, or 55.1 per cent.
3. 1848–1864, a rise from 56.0 to 132.1, or 135.8 per cent.
4. 1864–1896, a decline from 132.1 to 46.5, or 64.8 per cent.
5. 1896–1920, a rise from 46.5 to 154.4, or 232.0 per cent.
6. 1920–1932, a decline from 154.4 to 64.9, or 58.0 per cent.
7. 1932–1948, a rise from 64.9 to 165, or 154.2 per cent.

Space does not permit an explanation of each one of these, but periods 4 and 5 will be studied for purposes of illustration.

The Decline of Prices, 1873–1896.¹ Wholesale prices declined about 50 per cent between 1873 and 1896. While information on the velocity of circulation of money is entirely lacking and other data are incomplete, the following facts provide the basis for a tentative explanation.

As nearly as can be ascertained, total bank deposits (excluding inter-bank balances) and currency rose from about \$2,690 million in 1873 to

¹ The period 1873–1896 is chosen instead of the period 1864–1896 for the following reasons: (1) more complete information is available; (2) the abnormal effects of the Civil War are largely removed; and (3) the world gold price level reached its peak in 1873, followed by a decline until 1896.

\$6,381 million in 1896, an increase of 137 per cent.¹ These figures include time deposits of commercial banks, an element which we have excluded from the money stock (*M*). But lacking a breakdown of deposits, this is the best available representative of *M*.

What change actually took place in the velocity of money (*V*) is unknown. Almost certainly *V* was experiencing a rising trend as a result of the growing use of the bank check and the rapid development of financial institutions. The effect of this rising trend was offset, however, by the fact that 1873 was a year of active business when velocity is typically high, while 1896 was a year of depression when velocity is usually low. Consequently, there is reason to believe that no material change in velocity took place, owing to the presence of these opposing influences.

TABLE 21. THE PHYSICAL VOLUME OF TRADE IN THE UNITED STATES IN 1873 AND 1896

	1873	1896	$\frac{1896}{1873} \times 100$
Index of total basic production ^a (1926-1930 = 100).....	14.35	40.82	284.5
Total population (millions) ^b	38.6	62.9	163.3
Urban.....	9.9	22.1	223.2
Rural.....	28.7	40.5	142.5
Pig-iron production (1,000 gross tons) ^c ...	2,045	8,313	406.5
Bituminous-coal production (1,000 net tons) ^d	31,450	137,640	437.6
Petroleum production (1,000 bbl.) ^e	9,894	60,960	616.1
Copper production (1,000,000 lb.) ^f	34.7	460.1	1,325.0
Railway freight (1,000,000,000 net ton-miles) ^g	19.8	93.6	472.1

^a G. F. Warren and F. A. Pearson, *Gold and Prices* (New York, John Wiley & Sons, Inc., 1935) p. 48.

^b U.S. Bureau of the Census for 1870 and 1890.

^c Carl Snyder, *Business Cycles and Business Measurements* (New York, The Macmillan Company, 1927), p. 242.

^d *Ibid.*, p. 249.

^e *Ibid.*, p. 247.

^f *Ibid.*, p. 245.

^g U.S. Interstate Commerce Commission, *Statistics of Railways*, Class I railways.

Information for the period with regard to the physical volume of trade (*T*) is summarized in Table 21. The index of basic production rose 184.5 per cent. Since this index is a measure of crop production, forest products, minerals, fuel, and water power, it no doubt understates total cur-

¹ SOURCE: *Annual Reports of the Comptroller of the Currency*.

rent production in view of the rapid growth of new industries. That this is true is strongly suggested by the data on pig iron and bituminous coal, both of which rose more than fourfold; and by petroleum and copper, which grew even more spectacularly.

Moreover, the volume of trade almost certainly increased more rapidly during the period than current production. Evidence strongly supporting this view is the notable increase of 372 per cent in railway freight traffic.

It was the golden era of railroad construction; miles of line increased from 70,268 to 182,777, and six new transcontinental systems were completed, so that trade with the Middle West and the Far West grew by leaps and bounds. Further reasons to believe that the volume of trade outstripped production are (1) the more rapid growth of urban than of rural population, and (2) the development of greater occupational and geographic specialization. Self-sufficiency was giving way to economic interdependence; the system was becoming more and more a money-exchange economy.

Despite the lack of adequate data, it is of interest to substitute some of the information at hand in the equation of exchange, assuming that V remains constant. If the change in T is measured by ton-miles of railway freight, the index of prices in 1896 ($1873 = 100$) would be 50 ($P = M/T = 237.2/472.1 \times 100$); if measured by the index of total basic production, the price index in 1896 would be 83 ($237.2/284.5 \times 100$). The almost exact agreement between the actual decline in prices and the expected decline as computed when railway freight is used as a measure of T is indeed remarkable, but is in part a coincidence. The growth of railway freight doubtless overstates the rise of T , and the values used to measure the other factors are only approximations. The discrepancy when the index of basic production is employed is explained partly by the fact that this index understates the rise of T . In any event, the available information establishes the fact that the physical volume of trade grew more rapidly than the monetary factors, with the result that the price level declined.

The Rise of Prices, 1896–1914.¹ Between 1896 and 1914 the BLS index of wholesale prices rose 46 per cent. The following facts provide the basis for at least a provisional explanation of this persistent uptrend.

The stock of money (M) expanded rapidly—from \$3,813 million to \$11,615 million or by 205 per cent.² This was largely in the form of de-

¹ The period 1896–1914 is selected instead of 1896–1920 in order to eliminate the war years which require separate analysis.

² Total demand deposits adjusted and currency outside banks on June 30, as reported by the Board of Governors of the Federal Reserve System.

mand deposits which rose from \$2,839 million to \$10,082 million. Currency outside banks increased from \$974 million to \$1,533 million.

The best available evidence on velocity of money (V) during this period is furnished by a study of Professor Irving Fisher on the basis of which it is estimated that the trend of increase was at the rate of 1.79 per cent per annum which amounts to an over-all rise of 38 per cent.¹ Allowance must be made, however, for cyclical and other deviations from the trend line, an adjustment which can be made by use of Carl Snyder's Index of Velocity of Bank Deposits.² This index stood at 95 in 1896 and at 86 in 1914, a cyclical decline of 9.5 per cent. When this adjustment is made, the rise in V is reduced from 38 per cent to 25 per cent, the figure which will be used.

A rough measure of the volume of trade (T) is given by the index presented in Table 22. This index rose 150.9 per cent between 1896 and

TABLE 22. THE PHYSICAL VOLUME OF TRADE IN THE UNITED STATES IN 1896 AND 1914

	1896	1914	$\frac{1914}{1896} \times 100$
Railway freight (1 billion ton-miles)*	95.3	288.3	302.5
Bank debits adjusted (billions of dollars)†	75.4	156.8	208.1
Index of physical volume of trade‡ (1896 = 100)	100.0	250.9	250.9

* U.S. Interstate Commerce Commission, *Statistics of Railways*, all railways in United States.

† Carl Snyder, *Business Cycles and Business Measurements* (New York, The Macmillan Company, 1927), pp. 277-278; debits to individual account by banks in 141 leading cities of the United States; adjusted for price-level changes by wholesale Price Index of BLS.

‡ A geometric mean of the indexes of railway freight and bank debits ($\sqrt{302.5 \times 208.1}$).

1914. It is based on two series which broadly reflect the volume of trade at two different stages: one at the stage of transportation, the other at the stage of settlement.

Having arrived at estimates of values for the factors, the next step is the substitution of these values in the equation of exchange in order to check the expected and actual change in prices. On the basis of 1896 =

¹ Irving Fisher, *The Purchasing Power of Money* (New York, The Macmillan Company, 1911), p. 304. Fisher computed the velocity of currency to average 19.4 in 1896-1897 and 20.4 in 1908-1909. He computed the velocity of demand deposits to average 38.0 in 1896-1897 and 48.9 in 1908-1909. Weighting the velocity of currency one and of deposits four, the velocity of M rose from 34.3 to 43.2 or at the rate of 1.79 per cent per annum. When this rate of increase is applied to the entire period, 1896-1914, it is the equivalent of an increase of 38 per cent.

² Carl Snyder, *Business Cycles and Business Measurements* (New York, The Macmillan Company, 1927), p. 299.

100, the indexes of M , V , and T were 304.6, 125.0 and 250.9, respectively, so that the expected index of prices would be

$$P = \frac{304.6 \times 125.0}{250.9} = 152$$

This expected increase of 52 per cent compares with the actual rise of 46 per cent which is as close as can reasonably be anticipated by the use of rough measurements. In any event, the point is conclusively established that the monetary factors expanded at a more rapid rate than the volume of trade, with the result that the trend of the price level was upward.

Gold Production and Long-term Price Trends. A number of economists have placed great emphasis on the relation between gold production and the production of goods in explaining long-term price trends since the beginning of the nineteenth century. In general, they have explained a declining trend, such as 1873–1896, by the fact that the stock of gold increased either at a lower rate than the production of goods or at a below-normal rate. In reverse manner, they have explained a rising price trend, such as 1896–1914, in terms of an increase in the gold stock either at a higher rate than goods production or at an above-normal rate.¹

It is entirely proper to stress the importance of the world stock and production of gold in explaining the long trends of the world gold price level, although great care must be taken to avoid oversimplification. Changes in the gold stock are relevant in explaining price trends only in so far as they bear on the stock of payment money (M) or indirectly affect V and T . In gold-standard countries a close logical relation exists between the amount of monetary gold and the amount of credit money in the forms of demand deposits and bank notes. This follows from the

¹ G. F. Warren and F. A. Pearson state: "For 75 years before World War I world monetary stocks of gold had to increase at the same rate as the world physical volume of production in order to maintain stable commodity prices in England. If gold stocks increased more rapidly than other things, prices rose; if they increased less rapidly, prices fell." *Gold and Prices* (New York, John Wiley & Sons, Inc., 1935), p. 94.

Gustav Cassel states that for the period 1850–1910 the gold stock had to increase about 3 per cent per year in order to maintain a stable price level: "The main cause of the secular variations of the general price-level lies in the changes of the relative gold-supply." *The Theory of the Social Economy* (New York, Harcourt, Brace and Company, Inc., 1924), p. 447.

Substantially similar results are reached by J. Kitchin, "The Supply of Gold Compared with the Prices of Commodities," League of Nations, Document C 375, M 161, September, 1930; by R. A. Lehfeldt, *Gold, Prices, and the Witwatersrand* (London, P. S. King & Staples, Ltd., 1919), p. 32; and by L. D. Edie, *Money, Bank Credit, and Prices* (New York, Harper & Brothers, 1928), p. 251ff.

fact that the gold stock constitutes the basic reserve underlying the credit structure and that the ratio between the two usually moves within a range set by law or conventional practice.

But the view of some economists that a stable price level can be maintained by the increase of the monetary gold stock at a certain rate (say 3 per cent) rests on several assumptions, as follows: (1) that the gold standard will be resumed and maintained with gold at a fixed price; (2) that the nonmonetary demand for gold, including industrial uses and Oriental hoarding, will remain in a fixed relation to the world gold stock; (3) that the monetary demand for gold will not change in relation to the world gold stock, which means (a) that the same proportion of the economic world will remain on the gold standard, (b) that the ratio of monetary gold reserves to credit moneys will not be altered, a question which involves laws, government treasuries, central banks, commercial banks and international credit relations, as well as the demand for credit, and (c) that practices with respect to the use of gold and gold certificates in circulation will not change; (4) that the rate of increase in the physical volume of world production and trade will remain the same; (5) that the long-term rate of change of the velocity of circulation of money will be the same as it was during the historical period on which the conclusion was based. Contemplation of these numerous involved assumptions raises very serious doubts concerning the advisability of attempting to predict price trends on the basis of gold production—even under conditions of the gold standard before the First World War, not to mention the twilight interwar gold standard and the postwar monetary situation.

This criticism does not mean, however, that changes in the monetary gold stock should not have a part in the explanation of long-term price trends. In fact, no interpretation of a price trend in a gold-standard country is complete without reference to the gold stock. It is necessary, therefore, to supplement the previous explanations of long-term price trends. Between 1873 and 1896 the world monetary gold stock increased at the rate of only 1.9 per cent per annum compared with a normal rate of about 3 per cent, and with a rate of 4.2 per cent during the period 1850–1873.¹ This is highly significant and is one of the basic reasons why the growth of deposits and currency failed to keep pace with the growth of trade in the 1873–1896 period. Another basic reason is the large increase which occurred in the monetary demand for gold. Country after country adopted the gold standard: Germany (1871); the Scandinavian Monetary Union (1872); Holland (1873); France, Italy, Belgium, and Switzerland (about 1874); Egypt (1885); Russia and Austria (1892); India

¹ Edie, *op. cit.*, p. 253.

(1893); Chile (1895); Venezuela and Costa Rica (1896). With so many additional countries turning to gold in the face of curtailed gold output there was less gold available for the reserves of each one.

During the next period of rising prices, 1896-1914, gold production experienced a spurt. Rich mining areas were discovered and exploited in South Africa, Alaska, and the Rocky Mountains. Improved methods and processes of mining also made profitable the working of low-grade ores. At the same time industrial consumption and Oriental hoarding absorbed a smaller part of current gold output. Consequently, the world stock of monetary gold rose from \$4,359 million to \$8,058 million. This was at the rate of 3.5 per cent per annum compared with 1.9 per cent during the previous period.¹ The amount of monetary gold in the United States increased even more rapidly—from \$600 million in 1896 to \$1,891 million in 1914, or by 215 per cent.² Thus, the expansion of the reserves of gold-standard countries, and particularly of the United States, was an important factor in permitting and encouraging the growth of total deposit money and currency (*M*), which in turn was the most important single influence behind the upward price trend.³

Review Questions

1. State the two major aspects of the price system.
2. Develop the link connecting the general theory of value with the equation-of-exchange theory of the price level.
3. Demonstrate the application of the equation of exchange to subdivisions of the price structure.
4. Illustrate the application of the equation of exchange to indicate the causes of the long-term price movement, 1873-1896.
5. Explain the rise of prices, 1896-1914, in terms of the equation of exchange.
6. To what extent are changes in the gold stock relevant in explaining long trends of the world gold price level?
7. Assuming a constant parity between the rate of expansion of the monetary

¹ *Ibid.*, pp. 235, 253.

² Warren and Pearson, *op. cit.*, p. 151.

³ Perhaps an even more fundamental force behind the long trends of prices in the two periods discussed above is the long wave (48 to 60 years in length) in economic life. Professor N. D. Kondratieff, of the Business Research Institute of Moscow, pointed out the probable existence of such waves in an article published in 1926, a translation of which appeared in the *Review of Economic Statistics*, Vol. XVII, November, 1935. According to this study, the first long wave began in the 1790's and ended 1844-1851, the second wave rose from 1844-1851 until 1870-1875 and declined from 1870-1875 until 1890-1896, and the third wave rose from 1890-1896 until 1914-1920 after which the decline began. The amount of gold production and its influence on prices were in his view subordinate to the rhythm of these long waves.

gold stock and the rate of expansion of economic activity, upon what additional assumptions would the maintenance of a stable price level in the gold-standard area have to be predicated? Explain.

Advanced Questions and Problems

1. "The general price level cannot be definitively explained by the interaction of an aggregate demand schedule and an aggregate supply schedule of goods and services." Support this statement.

2. Does the relative fixity of gold in terms of ounces necessarily mean fixity in terms of gold monetary units? Explain how the trend of the world gold price level would presumably be influenced by (a) an increase in the gold content of the various national monetary units and (b) a decrease in the gold content of monetary units.

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CHAPTER XXIV

INTERPRETATION OF CHANGES IN PRICES AND PRODUCTION : THE BUSINESS CYCLE

Cyclical fluctuations of production, employment, and prices constitute perhaps the greatest threat to the system of private enterprise. Popularly labeled the problem of "boom and bust," they are familiar to all who experienced the troublous 1930's. It is therefore essential that price and production changes of this type be included in the series of interpretations which have already been applied to long-term price trends.

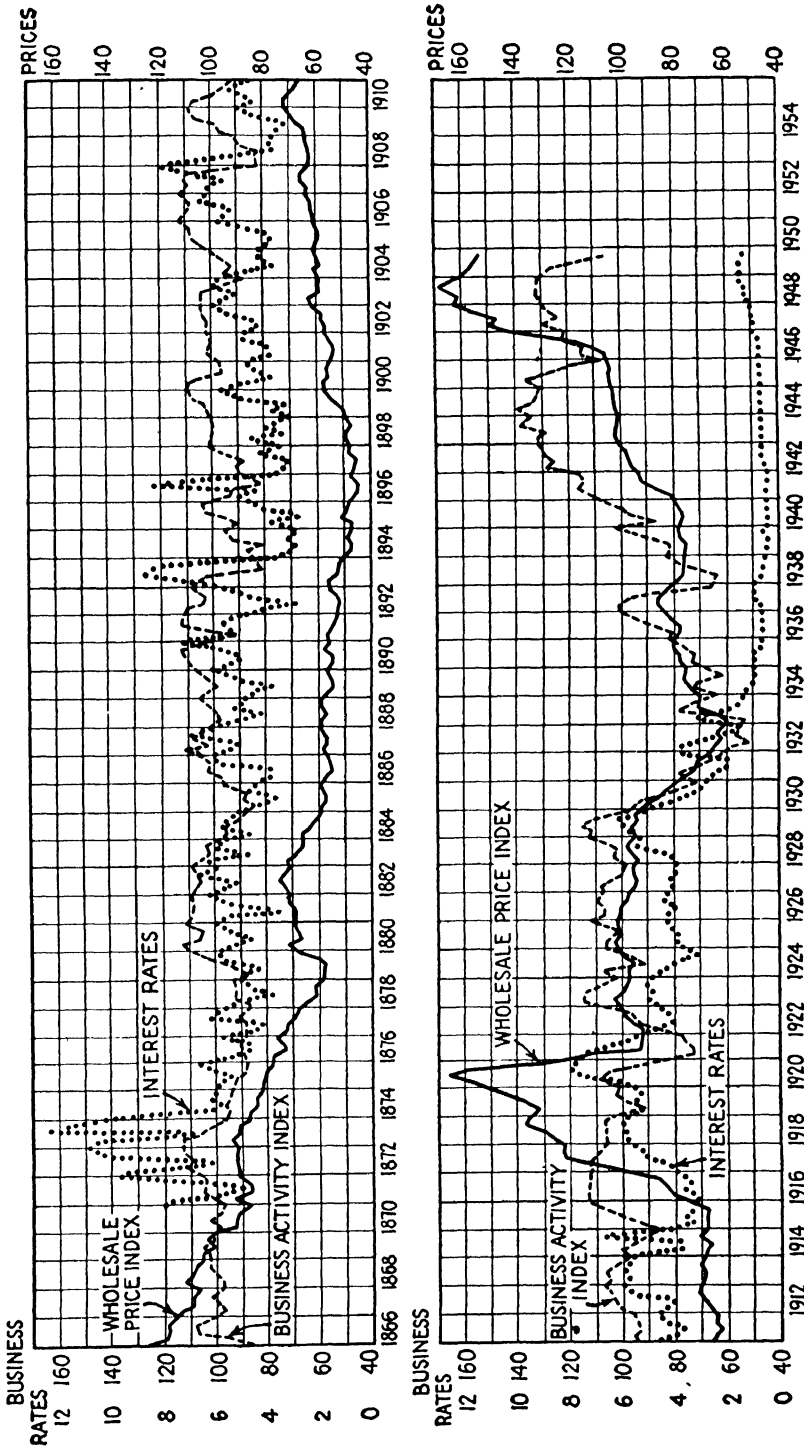
The literature of the business cycle is voluminous, particularly that of recent years when the practical aspects of the problem have confronted businessmen, government officials, laymen, and economists more stubbornly than ever before. In fact, the space allotted to this chapter would be required for a bibliography alone of the many books (some of them two volumes) and articles pertaining to the subject. Not only is the literature extensive; it is also highly controversial. Some writers find the chief cause of the cycle in the monetary system, the so-called monetary theories; some stress the tendency toward "underconsumption" or "oversaving"; some the tendency toward "overinvestment"; others develop "psychological" theories; still others have "agricultural" theories and "mechanical rhythm" theories. Despite these controversies there is a considerable area of agreement, particularly concerning the phases of expansion and contraction; disagreement is most pronounced as regards the "transition" phases or "turning points." Definitive answers to many of these disputed issues—now in the opinion stage—can be given, if ever, only after the test of systematic statistical investigations.

Obviously this is not the place to enter into the details of the various theories, or to discuss fine points of controversy. Rather, the purpose of this chapter is to point out the main features of the cycle, and to summarize the phases of its development in terms of what may be called a synthetic theory.

FEATURES OF THE BUSINESS CYCLE

The business cycle may be thought of preliminarily as simply the wave-like alternations of prosperity and depression in a private enterprise system. A general picture of the cyclical changes in business, prices, and

CHART 11. BUSINESS ACTIVITY, WHOLESALE PRICES, AND COMMERCIAL-PAPER RATES, 1866-1949



Source: Business Activity, Cleveland Trust Co. Index; Wholesale Prices, U.S. Bureau of Labor Statistics, 1926 = 100; Commercial-paper Rates, 4 to 6 months, Standard & Poor's Corporation, Statistics Section.

interest rates since 1866 is presented in Chart 11. The shorter waves (Kitchins)¹ have a length of about $3\frac{1}{2}$ years, and the longer waves (Juglars)² a length of approximately 9 years. However, these periodicities are not dependably regular. Each cycle, while a member of the family, is an individual with different measurements and features. The amplitude of the Kitchins in terms of industrial production is in the range of 5 to 10 per cent above and below the normal trend line while that of the Juglars is 10 to 30 per cent. It should be observed that wholesale prices respond quickly to cyclical changes, rising and falling with business activity. Interest rates, however, respond only after a lag of several months. This is especially true at the upturn, owing to the facts that the banks have large excess reserves and that the first stage of expansion is usually financed in large part by an increase in the velocity of money.

Measurements of the cycle are best made in terms of the basic factors of physical production, consumption, and employment, all three of which usually rise and fall in rough concurrence. In some cases, however, when these factors do not concur, a cycle has to be identified by the qualitative judgment of the analyst. One unfailing feature of the cycle in industrial countries is the far wider swings of durable goods production than of non-durable goods and services. The former rise and fall between two and three times as much as the latter.³ In fact, the cycle is chiefly identified by some writers in terms of fluctuations of durable goods production and employment. The explanation of this feature is to be found mainly in the postponable nature of demand for durable goods during depression years and the multiplicative nature of their demand in prosperous years.

Two other important features of the business cycle are brought out clearly by Chart 12 and Table 23. One of these is that average unit prices of commodities rise and fall to about the same extent and in about the same time relationships as do physical quantities of output. This is especially notable in view of the inverse relation of supply and price when the demand schedule remains the same. Evidently, demand rises more than supply during the expansion phase and declines more than supply during the contraction phase. This is a fact which is established by statistical observation since there is no logical reason why unit prices might not move inversely to quantities, except perhaps during the last stage of expansion when factor scarcities emerge.

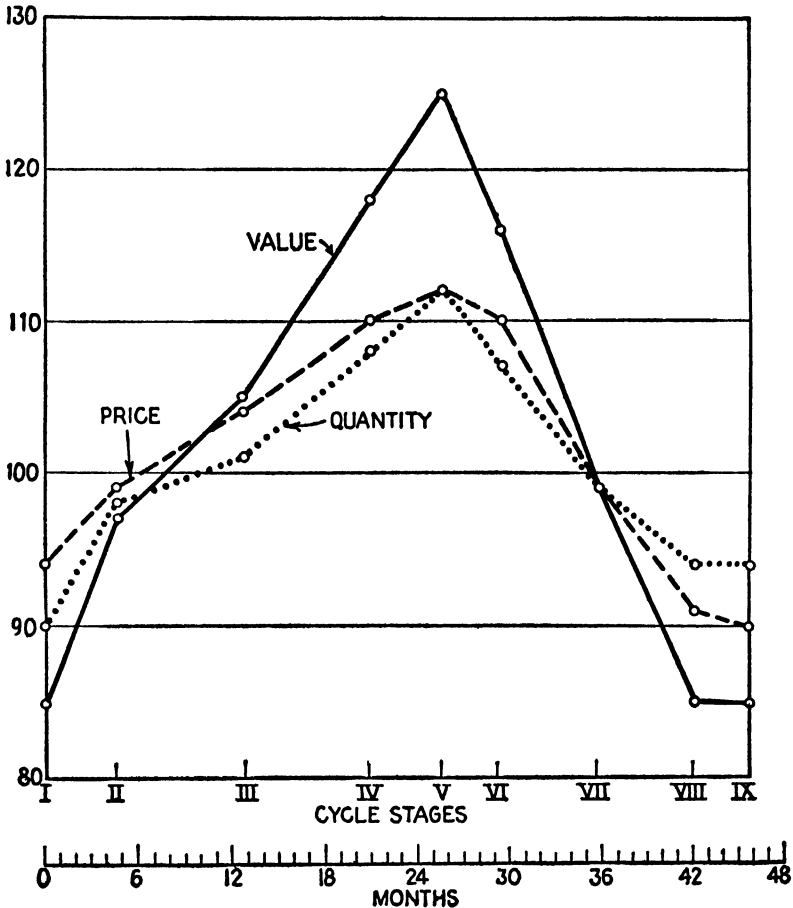
¹ Joseph Kitchin of England is credited with their discovery in 1923.

² Clement Juglar, a Frenchman, whose *Des Crises commerciales et leur retour périodique en France, en Angleterre, et aux États Unis* was published in 1860.

³ As measured by the durable goods and nondurable goods indexes of the Board of Governors of the Federal Reserve System.

The other feature of the cycle brought out by Chart 12 is that the monetary value of buyers' outlays (or sellers' receipts) moves upward and downward in phase with quantities and prices, but with about twice as

CHART 12. AVERAGE MOVEMENTS OF UNIT PRICE, PHYSICAL QUANTITY, AND AGGREGATE BUYERS' OUTLAY IN BUSINESS CYCLES—ALL COMMODITIES, 1858-1938



SOURCE: F. C. Mills, *Price-Quantity Interactions in Business Cycles*, New York, National Bureau of Economic Research, Inc., 1946, p. 57.

wide an amplitude. Thus, changes in unit prices and quantities reenforce each other to magnify the variations in aggregate values.¹ This is a highly significant aspect of the cycle since so many business and economic

¹ The data presented in Table 23 and Chart 12 are derived by Professor Frederick C. Mills from a sample of commodities which constituted in 1937 about one-third of the aggregate value of all agricultural commodities, raw minerals, and manufactured goods produced in the United States. The sample is composed of

problems emerge in terms of aggregate values, rather than separately in terms of quantities or of unit prices, *e.g.*, public and private debts; national income; taxes; gross revenues, costs, and net profits of business firms.

TABLE 23. INDEXES OF AVERAGE MOVEMENTS OF AGGREGATE VALUES, AVERAGE UNIT PRICES, AND PHYSICAL VOLUME OF BUSINESS CYCLES, 1858-1938

Cycle stage	I	II	III	IV	V	VI	VII	VIII	IX	Ex- pan- sion I to V	Con- trac- tion V to IX
Value	85	97	105	118	125	116	99	85	85	+40	-40
Price	94	99	104	110	112	110	99	91	90	+18	-22
Quantity	90	98	101	108	112	107	99	94	94	+22	-18

SOURCE: Frederick C. Mills, *Price-Quantity Interactions in Business Cycles* (New York, National Bureau of Economic Research, Inc., 1946), p. 56.

PHASES OF THE BUSINESS CYCLE

For convenience in analysis, the cycle may well be divided into two phases: expansion and contraction, separated by two stages, the trough and the peak. In addition, the expansion phase may be broken down into three stages (II, III, and IV), and the contraction phase may likewise be divided into three stages (VI, VII, and VIII), making in all eight stages in a complete cycle. The task now before us is that of studying in more detail the characteristics of each phase and stage of a cycle development, and of presenting an underlying theory of this development.

There are two sets of forces which govern the timing, direction, and amplitude of the cycle: (1) the external (exogenous) forces and (2) the internal (endogenous) forces. The former include acts of nature—floods, droughts, storms, and so forth, and man-made institutional disturbances such as wars, political upheavals, and strikes. Such events are largely of a chance nature so that while they cannot possibly explain the cycle, they undoubtedly do exert a strong influence on its pattern. In order to construct anything like a satisfying explanation, it is necessary to introduce also the internal forces of the cycle. These forces are of a self-generating nature and would presumably produce the cycle even in the absence of large external disturbances. That is to say, the expansion and

about 60 commodities since 1919, but its size gradually diminishes for earlier cycles to only two commodities between 1858 and 1870. Frederick C. Mills, *Price-Quantity Interactions in Business Cycles* (New York, National Bureau of Economic Research, Inc., 1946), pp. 25, 119.

contraction processes contain seeds of two varieties which sprout and grow: one of these varieties tends to promote expansion or contraction once underway; the other, and eventually dominant, variety tends to halt the process and to bring about a reversal.

The Expansion Phase. As a starting point, let it be assumed that the expansion phase is ushered in by an increase of money expenditures by consumers whose needs have accumulated and whose belief has grown that prices have reached bottom. Their debts have been reduced and their money balances have risen in relation to transactions and income during the preceding contraction phase. Now they begin to spend more freely by drawing on idle money balances, *i.e.*, their relative demand for money (K) declines.

This leads immediately to an increase in the gross money receipts of retailers, and to a reduction of their inventories both absolutely and in relation to sales. Enlarged orders straightway go to wholesalers and producers of consumer goods as the retailers attempt to rebuild inventories in line with prospective sales. When producers of consumer goods respond by stepping up current production, a train of expansionary effects is set in motion. Materials and supplies are purchased; expenditures for maintenance, repairs, and replacements begin, with the result that employment and wage payments are enlarged. The increase of income accompanied by returning confidence then provides a reinforcement to consumer expenditures.

With the rise of both unit prices and physical volume, the net profits of business firms begin to show improvement, and expectations of still larger sales and profits develop. This leads, in turn, to enlarged capital expenditures in the forms of deferred maintenance, replacements, and new (net) investment. Capital expansion takes place in established concerns as they prepare to exploit new markets, inventions, and improved equipment; it also occurs in new companies that spring up to offer old products at lower prices or to introduce entirely new goods and services. All this contributes again to employment and incomes with the result that sales of consumer goods receive a further impetus, especially in the durable goods field.

This interplay between the expansion of consumer demand and capital expansion is often called the "principle of acceleration" and the "principle of the multiplier." The former refers to the stimulus given to the producers' goods industries by an increase in sales to consumers; the latter to the multiplicative effect on the national income (and thereby on consumption) of an increase in capital expenditures (investment).

The acceleration principle can best be explained by a simple example. Assume that a certain consumers' goods industry, say breakfast cereals,

utilizes 1,000 machines with an average life of 10 years, so that 100 must be replaced each year to maintain efficient capacity. As long as the demand for cereals remains steady, the producers of these machines can expect this replacement demand of 100. Now suppose that the demand for cereals rises 10 per cent in the next year so that 1,100 machines are required. Orders to the machine producers will then increase 100 per cent (100 replacements + 100 additional), or 10 times as much as consumer demand. If cereal demand rises by the same annual increment for several years, machine orders will maintain their new peak level of 200. The secondary and tertiary effects of these demands will also provide a powerful stimulant to all the industries which sell to the machine producers, including construction companies, and employment will tend to rise all along the line.

Next, in order to bring out another aspect of the situation, assume that the increment of increase in cereal demand is halved. This will cut the demand for machines down to 150 (100 replacements + 50 additional) and a downward adjustment in their production schedule will be necessary. Thus, a recession in the producers' goods industries tends to develop with any reduction of the *increment of increase* in consumer demand; it does not wait for an absolute decline in consumer demand. In fact, the demand for machines will drop back to the original 100 replacements as soon as consumer demand stabilizes at the new high level—until the eleventh year when replacement demand will rise to 200 if a constant increment of increase in consumer demand has obtained during the preceding 10 years. Moreover, when a sharp decline in consumer demand takes place, it is likely that the cereal producers will even postpone their replacements, so that the machine producers may have to close down entirely for a time.

As indicated above, the "multiplier effect" refers to the reverse effect of investment outlays on the national income and through this on consumption expenditures. More precisely, the multiplier is the number of dollars of increase in the national income which can be traced to a dollar of increase in investment expenditure during a stated period of time. When contraction has proceeded until depression conditions prevail, an increment of investment expenditure may spark a series of new demands which may have income-generating effects of several times its size. On the other hand, if conditions—including the manner and direction of investment—are unfavorable, the multiplier may be only 1, or even less than 1. It is impossible to estimate in advance with any accuracy what the multiplier will actually turn out to be.

The role of external forces in shaping the expansion phase of individual

cycles has thus far been ignored since we have been dealing with an average cycle. These events—droughts, floods, wars, political disturbances, labor troubles, and so forth—may retard, stimulate, interrupt, or prolong the expansion phase, depending on their nature and magnitude.

The valuable study of Professor Frederick C. Mills, already referred to, brings to light a number of additional features of the expansion phase, as follows:

1. A retardation in the rate of expansion usually occurs between stages II and III. This applies more to physical output than to unit prices, and it is most marked in the consumption and nondurable goods categories (see Chart 12).

2. The average monthly rates of change in buyers' outlays, unit prices, and quantities between stages I and II are typically about twice as high as the rates for the entire expansion phase. After the pause between stages II and III, expansion proceeds at approximately the same rates between stages III and IV, and IV and V.

3. Individual commodity prices respond to cyclical expansion with much greater uniformity than do physical quantities. In more technical language, the dispersion of prices about their average is far less than that of quantities.

4. Price increases are dominantly responsible for the rise in buyers' money outlays for farm products, nondurable goods, and consumer goods, while quantity increases are chiefly responsible in the cases of durable goods, metals, capital equipment, and nonfarm products in general.

5. Expanding money outlays of buyers are most general in the economy between stages III and IV.

6. The proportion of individual commodities contributing to expansion of outlays is reduced between stages IV and V for all commodity groups except raw materials; the reduction is especially marked for foods and consumer goods in general.

Some of the financial aspects of the expansion phase have already been mentioned, but they require considerably more emphasis. During the contraction phase the liquidation of bank credit is usually substantial, so that when the revival stage is reached, the central bank (Federal Reserve banks) and commercial banks hold large reserves in relation to their deposit liabilities. The reserve position of the commercial banks is also likely to be strong at that time, owing to the typical central bank policy of providing surplus reserves as a spur to recovery. All this makes for low short-term interest rates and low yields (high prices) on high-grade bonds. Another feature of the monetary situation as revival begins is the large demand for money balances in relation to money payments

(K); or what is the same thing in substance, the low velocity of money (V). Thus, the financial setting is highly favorable for the cumulative progress of business expansion.

These expanding activities are usually financed by (1) the expansion of bank credit (loans and investments) and (2) the increase in velocity of money (V). The first method creates new deposit money (M_d), which enters the money-payments stream (MV) as it is spent and thereby stimulates trade and prices. The second method—increase of V —was a more important factor than M during the typical expansion phase prior to 1933. For example, the amount of demand deposits in the United States rose 32 per cent between 1921 and 1929 as compared with an increase of 64 per cent in their velocity.¹ Since 1933, however, V has not followed its usual cyclical behavior. For example, during the expansion phase, 1933–1937, the amount of demand deposits rose 62 per cent while their velocity declined 8 per cent. In the usual expansion phase, it is possible to generalize in terms of the equation of exchange as follows: M invariably rises accompanied as a rule by a still more rapid rise in V . T always increases substantially owing both to the increase of current output and the more rapid turnover of goods. P usually rises in about the same proportion as current output. However, the abnormal behavior of V since 1933 raises some doubt concerning any generalization with respect to it.

An integral part of the process of financing expansion is saving out of the rising national income, generated as new money is created and/or the money stock is turned over more rapidly. The amount of capital formation in the United States rose from \$3.3 billion in 1921 (5.5 per cent of national income) to \$10.0 billion (11.5 per cent of national income) in 1929. About two-thirds of the increase was accounted for by the savings of individuals which rose from \$1 billion to \$5.2 billion; the remaining third of the increase represented savings by business firms and governments which rose from \$2.3 billion to \$4.9 billion.² In the early part of the expansion phase (stage II) new capital is raised mainly by the issuance of bonds and other debt securities. As improvement takes place in the financial position and prospects of business, preferred stock becomes more popular and some common stock is offered. Then as expansion progresses accompanied by higher net profits, still better prospects, and rising stock prices, common stocks come to represent a rising proportion of new capital issues.

¹ See Chart 10, p. 328.

² Simon Kuznets, *National Income and Capital Formation, 1919–1938* (New York, National Bureau of Economic Research, Inc., 1941), pp. 269, 276.

The Downturn. The expansion phase of the cycle has been aptly compared with a peculiar type of steeplechase where the horse is bound to fall over one of a series of obstacles. In the earlier stages of the race an obstacle will check his speed, but fresh and strong, he is not so likely to trip. During stage IV, however, he becomes winded and weary, and the obstacles are more formidable so that sooner or later he falls. The external events making for a reversal of the cycle may occur at any time, and their effect depends upon their size and the vulnerability of business to a decline. The internal forces making for a reversal are weak at first, but gain strength, and finally become dominant in the latter part of stage IV.

Why is it that business does not hold stable at a high level once attained instead of degenerating into a slump? Before attempting a detailed answer, let us pose a counterquestion: Would it not be very surprising if business should hold stable at a high level in view of the features of the expansion phase? Expansion grows out of depression when production in the capital-goods industries is a shadow of itself, both absolutely and in relation to consumers' goods production. With the advent of stage IV, the position of capital-goods industries is completely altered: they are running at full blast and their output is large relative to that of consumers' goods. All this implies dynamic changes—new industries, new methods, new markets, new business ventures, new products, and shifts in consumer demands. Changes on such a scale cannot be made without many mistaken business decisions. What could be more likely than a corrective adjustment after a mushroom expansion of this sort?

From the standpoint of pure theory, the downturn may be brought about by any one, or by a combination, of several obstacles to expansion, as follows: (1) flagging consumer demand; (2) scarcity of labor; (3) scarcity of money; (4) unbalanced structure of production; (5) over-optimism of businessmen; and (6) external events.

1. There are reasons to believe that consumer demand is unlikely to maintain the rate of expansion which it has experienced during stages I to IV. As the national income rises a higher proportion tends to be saved—at least in the short run—and a smaller proportion to be spent on consumption goods. This follows from the fact that saving is largely a function of income. The bulk of individual saving is done by the higher income groups whose proportion of total income rises during expansion. In addition, the luxury of saving becomes possible to a wider segment of the lower income classes. Consumers of all classes are subject to some inertia in making an upward adjustment in their scale of living. As a

consequence, the effective demand of consumers finally proves inadequate to absorb the expanded output of consumers' goods at prices which cover costs (including a normal profit). Statistical support to this thesis is given by the recent study of Professor Mills.¹ He finds that buyers' outlays on consumers' goods show a greater proportion of declines between stages IV and V than on any other class of goods, and that declines in physical quantities rather than in unit prices are dominantly responsible.

2. Scarcities in the labor supply usually appear during stage IV. They are evident first in certain classes of skilled workers, more likely in the heavy goods field, and in certain areas where expansion has been most rapid. This leads to rising wage rates as competition among employers becomes keener, and as labor unions become more aggressive. At the same time the efficiency of labor deteriorates, owing both to a breakdown of morale and to the fact that the least efficient laborers are employed last. All these factors combine to raise wage costs per unit of product more rapidly than selling prices, so that profit margins may be seriously reduced in certain fields.

3. Another obstacle to further expansion may arise in the form of a scarcity of money. This was particularly true during the gold-standard era prior to the First World War when the stock of deposit money and currency was limited by the amount of monetary gold. In addition, the art of central banking was relatively undeveloped in this period. The United States had no central bank (Federal Reserve banks), and the central banks of Europe usually lived by the gold-standard rules. Under these circumstances, the commercial banks could finance expansion only so far; to go further would put them into a deficit reserve position. Interest rates rose sharply when surplus reserves were utilized, and loan applications often had to be denied. This meant that many expansion plans were abandoned either because of the high cost of credit or its complete unavailability.

Since the First World War, the check to expansion provided by the monetary system has been less automatic and more a matter of government or central bank policy. The gold standard has been adhered to only spasmodically, and governments and central banks have dominated the monetary situation. There is no limit to the quantity of legal-tender money which a government can print, and central banks have wide latitude in regulating the reserve position of the commercial banks. Consequently, if a check on expansion arises from the monetary system, its origin is likely to be found in deflationary policies of the government

¹ Mills, *op. cit.*, pp. 102, 115.

and/or the central bank. An example of the application of such policies may be drawn from the expansion which came to a halt in 1937. The Federal government cut expenditures sharply in an effort to balance the budget for the 1936-1937 fiscal year. At the same time, the Board of Governors doubled the legal reserve requirements of the commercial (member) banks between August, 1936, and May, 1937.

4. We have already touched upon the unbalanced structure of production which develops during the expansion phase. Under the combined influences of the acceleration principle and the multiplier, expansion sets a pace which cannot be maintained. The durable producers' goods industries in particular develop a capacity which is far in excess of a normal relationship with the consumers' goods industries. Having reached a crest, these industries (producers' goods), like the tide, must recede until the economy once more needs new capital equipment. The unbalanced condition, however, is not confined to the producers' goods—consumers' goods relationship. Changes in the economy are so extensive during the expansion phase that mistaken decisions are numerous in all fields. A period of adjustment is necessary to correct and absorb these errors.

5. It is entirely natural that a spirit of overoptimism should develop among businessmen during stages I to IV. They become used to expansion and come to accept it as a permanent feature of the economy. Time after time their expectations with respect to sales and profits have been surpassed by realities. This in the end arouses false expectations which fail to take into account the various obstacles to expansion just discussed. There comes a time when realities are a distinct disappointment—when sales decline and profits turn to losses in many firms. A reversal of business sentiment is at hand with the result that expansion plans are postponed or abandoned. This is the outstanding feature of stage V (downturn).—

6. While the downturn may take place as a consequence of purely internal cyclical forces, its timing may be altered by external events. For example, heavy government expenditures in preparation for war may prolong expansion, while a harsh deflationary policy may hasten the downturn.

Sometime during stage V, a panicky financial situation, often called the "crisis," is likely to develop. Such a situation may be precipitated by the failure of some important financial institution, or by any severe shock to the prevailing spirit of overoptimism. A feature common to all panics of this sort is a sharp break in the stock market which frequently uncovers additional weaknesses. The change in direction of general

business activity is usually sudden and sharp in contrast with the upturn which develops more gradually.

The Contraction Phase. The contraction phase into which the downturn merges is in many respects simply the reverse of expansion. Nevertheless, it has a number of unique features that require explanation. Any one, or combination, of the retarding factors just discussed may bring about the downturn. But for the sake of illustration, let it be assumed that the effective reason is a decline in the sales of retailers. This leads to a rise in inventories, both absolutely and in relation to diminishing sales, with the result that orders to wholesalers and producers of consumers' goods are sharply reduced. Whereupon the latter cut back current production schedules, cancel orders for materials, supplies, and equipment, and postpone capital expansion plans. All this means a reduction in employment and wage payments which, in turn, has the effect of lowering still further the demand for consumer goods. The cumulative spiral of contraction is then in full swing. As it proceeds, the producers' goods industries are the hardest pressed of all, since orders amount to only a small fraction of their freshly expanded capacity. Many plants are closed entirely. By this time, management adopts defensive policies of retrenchment all along the line. Not only does new investment virtually disappear, but normal replacements are postponed, and maintenance expenditures are curtailed. Business losses become general, failures rise sharply, and a spirit of deep pessimism prevails.

A notable feature of contraction is the fact that the principle of the multiplier operates in reverse. When investment is reduced by a given amount, the effects are likely to be so widespread that the national income is reduced by a multiple of this amount. This in part accounts for the stubbornly progressive nature of contraction once it is underway.

Thus far, in discussing contraction we have had in mind an average cycle, and have therefore purposely disregarded the role of external forces. Just as in the expansion phase, these forces may play an important part in shaping the course of contraction. They may hasten its coming; retard or accelerate its course; prolong it or bring it to a premature end.

Several additional features of the contraction phase may be summarized from the previously mentioned study of Professor Mills, as follows:

1. Declines in physical quantities of sales rather than in unit prices are dominant in generating contraction as stage V merges into stage VI.
2. Maximum rates of decline in buyers' outlays for most commodity groups take place between stages VI and VII.

3. Declines in prices rather than in quantities are dominant in the contraction of buyers' outlays between stages VI and VIII, when contraction is most general in all commodity groups.

4. Individual prices respond to cyclical contraction with much greater uniformity than do physical quantities.

5. Price decreases are dominantly responsible for the declines in buyers' outlays for farm products, nondurable goods, and consumers' goods, while quantity decreases are chiefly responsible in the cases of durable goods, metals, capital equipment, and nonfarm products in general.

The various financial aspects of the contraction phase require separate comment. Just before contraction begins (stage V), the credit of the commercial banks is usually overextended. Total earning assets (loans and investments) are at a peak, and consequently so is the amount of deposit money (M_d). Moreover, in order to support the large volume of deposits, it is usually true that borrowings of reserve money at the central bank (Federal Reserve banks) are large. That is, central bank credit is also extended, and the basic monetary reserves are supporting a top-heavy credit structure. Under these conditions, interest rates are likely to be high, including the yield on high-grade bonds. Common stock prices are still in the top range even though they may have already suffered a severe break from the peak. The demand for money balances in relation to money payments (K) is typically low; in other words, the velocity of circulation of money (V) is high.

With this setting in mind, let us now turn to the course of financial developments. One of the most sensitive factors is the demand for money balances in relation to money payments (K). With the downward turn of prices, individuals and business firms desire to hold a larger proportion of their assets in the form of money. At first, this desire is gratified for the most part by spending less (saving more) of current money income. Later, when the belief in lower prices grows, liquidation of commodities, securities, and other property takes place. All this contributes to further price declines and to the contraction in general. The rise in K (decline in V) continues with jagged interruptions throughout the contraction phase. For example, the annual velocity of demand deposits in the United States dropped from 53.6 in 1929 to 26.8 in 1933, or by 50 per cent.¹

Before the decline in the velocity of money has proceeded far, it is joined by a decline in the stock of payment money (M). Deposit money (M_d) is reduced steadily as the total earning assets of the banks are con-

¹ See Chart 10, p. 328.

tracted. All classes of bank loans are subject to heavy liquidation, but this may be offset in part by an increase of investments if bank reserves permit. Currency (M_c) also declines in amount throughout the contraction phase, unless confidence in the banks is impaired. With the reduction in retail sales and payrolls, less currency is needed by the public. But if doubts arise concerning the soundness of the banks, especially if they are confirmed by bank failures, currency hoarding takes place. This may lead, as it did in 1933, to a rise in currency well above its amount at the expansion peak. In so far as such hoarding occurs, demand deposits are reduced when the currency is withdrawn. The total stock of payment money in the United States declined from \$26.5 billion on December 31, 1929, to \$20.0 billions on June 30, 1933, or by 24.5 per cent.¹ Such a decline contributes materially to lower prices and output.

Another feature of contraction is a sharp reduction in short-term money rates. This usually begins early in stage VI as the reserve position of commercial banks improves. At the same time the yield on high-grade bonds declines, *i.e.*, bond prices rise. If a financial panic is avoided, low interest rates continue throughout stages VII to IX. But if currency hoarding, bank failures, and gold exports take place, bank reserves become deficient. This leads to a sharp rise in money rates as the commercial banks are forced to borrow at the central bank and to liquidate investment securities. A good illustration of this situation is afforded by the period, October, 1931, to July, 1932, when rates rose abruptly after having steadily declined from the peak in October, 1929. Subsequently, the decline was resumed, although interrupted by the culmination of the banking crisis in March, 1933. It should also be mentioned that central bank policy is typically directed toward low money rates during the contraction phase as one means of encouraging recovery.

Other financial developments include the steep decline in common stock prices and the almost complete cessation of new issues of securities. Standard & Poor's Corporation index of common stock prices dropped from 237.8 in September, 1929, to 35.9 in June, 1932, or by 84.9 per cent. New security issues (new capital) declined from \$10.1 billion in 1929 to \$0.7 billion in 1933. Even more striking was the drop in the issue of common stocks (new capital) from \$4.4 billion in 1929 to only \$10 million in 1932.²

In summary, it is possible to generalize the contraction phase in terms

¹ Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*, p. 34.

² *Ibid.*, p. 487.

of the equation of exchange, as follows: M invariably declines and V usually declines in even greater degree; T also declines owing both to a reduction in current output and to a fall in the velocity of goods; but the percentage drop of T is usually about half that of (MV) , so that P and T decline in roughly the same proportion.

The Upturn or Revival. As contraction progresses, certain internal forces develop the strength, first to retard the process and then to produce an upturn. There is considerable resemblance (in reverse) to the manner in which such forces operate during the expansion phase to bring about a downturn.

For various reasons consumers may increase outlays during stages VIII and IX(I), particularly for nondurable and semidurable consumption goods. During stages V to VII prices decline sharply and there is a prevailing belief that they will decline even further. This of course prompts consumers to restrict expenditures until the markets touch bottom. In addition, jobs are insecure and there is the fear that wages and other incomes will be reduced. Under these circumstances, household inventories are gradually depleted: food stocks are low, clothing becomes threadbare and out of style; and equipment becomes so badly worn that repairs are needed. There thus comes a time when physical necessity requires that consumers spend more freely even though they may still anticipate somewhat lower prices. But by this time the rate of price decline is slowing down since the worst situations requiring wholesale liquidation have already been cleaned up, and many people begin to feel that the bottom is at hand. This also contributes to enlarged consumer expenditures. The repercussions of this returning demand then spread to the entire business system in the manner already described in the section on expansion.

The high probability of consumer demand taking a lead in revival is firmly established by Professor Mills who states: "The groups that take the lead in contributing to a business upturn in the terminal stages of general business recession are farm products and goods in shape for final purchase by consumers. In the primary farm markets and in the markets for finished consumer goods the forces of recovery are manifest while the tide of business at large is still ebbing." He also finds that increases in physical quantities, rather than in unit prices, are principally responsible for the enlarged consumer expenditures.¹

It is possible that revival may start in the field of producers' goods rather than in consumers' goods. Mills finds, however, that this is distinctly the exception and that increases in outlay typically occur last in

¹ Mills, *op. cit.*, p. 114.

metals, durable goods, and capital equipment.¹ In the exceptional case where revival begins in this field, its development usually takes the following course. Anticipating a favorable turn in consumer demand and in prices, business firms begin to prepare for the enlarged sales which lie ahead. They begin first to catch up on deferred maintenance and repairs and on deferred replacement of equipment. Then they commence the practical development of new products and of cost-saving inventions which have been brought to the blueprint stage during contraction. Business spending for these purposes thus starts the familiar spiral of increased employment and wage payments, increased consumer demand, reinforcement of business spending, and so on.

A necessary condition to initiation of revival through business spending is that costs of production become so adjusted to selling prices that there are prospects of realizing net profits on the anticipated sales volume. Cost adjustments result mainly from reductions in interest rates, labor costs, material prices, and from write-downs of capital values. Interest rates, as previously indicated, drop to an abnormally low level by stage VIII. This automatically takes place as the supply of loanable funds rises in relation to demand. Moreover, the automatic forces are usually supplemented by government and central bank policies directed toward plentiful credit and low rates. Interest costs are not only reduced on new capital, but many corporations are able to refund outstanding debts at lower rates.

Labor cost per unit of output declines during contraction as a result of both a drop in hourly wages and an increase in labor efficiency. Wage rates drop most in fields where labor is unorganized and least in the industries which have strong unions. Wages are now less flexible than formerly, owing to the rapid growth of unions in recent years. Labor efficiency increases since the less productive workers tend to be laid off first and laborers are inclined to work harder when jobs are scarce. In addition, improved production methods and personnel relations may contribute to efficiency.

Little needs to be added concerning the reduction of material costs. It is only necessary to recall that prices of raw materials decline more sharply during contraction than finished goods prices.

Write-downs of capital values bring about a reduction of current charges for depreciation and obsolescence during the contraction phase. They are most marked in the sector of business failures where assets are often sold for a small fraction of original cost, or are drastically written down on the books of reorganized companies. But write-downs of capi-

¹ *Ibid.*, p. 90.

tal assets are also extensive and substantial among going concerns, especially when a change in management takes place.

In general, it may be said that the conditions of supply become more and more favorable for recovery as the means of production become more readily available to entrepreneurs. New activities can be undertaken by the use of unemployed labor, idle plants and equipment, abundant materials, and low-cost credit.

The above discussion of revival in demand touches only incidentally on the monetary aspects of the problem. An increase in the money demand for goods is mentioned, but nothing is said about the demand for money balances in relation to money payments (K). A marked rise in K occurs during the contraction process when money is preferred to goods, owing to anticipation of lower prices and to uncertainties in general. This preference is expressed by a greater propensity to save current income and by the liquidation of nonmoney assets. But there is an elastic limit beyond which it is difficult for K to go. When it approaches this limit, like the ball attached to a rubber band, there are forces pulling it back toward a normal position. Resources in the form of money yield no income, so that excess money balances constantly seek investment opportunities. Also, holders of excess money balances are constantly tempted by the great variety of attractive consumers' goods. Moreover, as prices fall the stock of money (M) commands a rising proportion of the real national wealth and income. This proportion has a saturation point under given conditions at which people decide to consume and invest rather than to hold more money. K then begins to fall, and conversely V begins to rise.

As in the preceding stages of the cycle, the external forces may play an important role in changing the timing of revival and in hastening or retarding its speed. In particular, it is probable that in the future more positive recovery measures will be taken by governments and central banks, rather than to permit unemployment to rise as high as it would before natural forces bring about the upturn.

Sometime during stages VIII or IX the liquidation process may culminate in a financial panic, especially if the contraction is heavy. Owing perhaps to a rising rate of bank failures, confidence in the banks may become impaired which often leads to currency hoarding and in gold standard countries to an external drain of gold reserves. This in turn may force the banks to liquidate bonds on a declining market and to call loans—a condition which is likely to spread liquidation to the stock market and the commodity markets. Under these circumstances, bank failures may rise still further and the deflationary spiral may proceed

until it becomes necessary to close the banks and to make a fresh start. A good illustration of this process in the United States is provided by the period September, 1931, to March, 1933. All banks were finally closed by a presidential proclamation on March 6, 1933. The United States has been particularly vulnerable to financial panics, owing to its unit banking system and to the lack of a central bank before 1914.

According to the best available evidence, revival typically begins, as we have seen, in the consumers' sector of the economy and is first manifest by increases in physical quantities of buyers' outlays. But as the turn is rounded during stage IX(I) revival spreads to other commodity groups and the lead is quickly taken by durable producers' goods in which increases in physical volume rather than price are dominant. By this time, however, price increases have become more important than quantities in the expansion of outlays for consumers' goods and farm products.¹ This brings us back again to our starting point as the upturn merges into the expansion phase.

A STATISTICAL INTERPRETATION

A concrete interpretation of the forces at work during a period of rapid economic change may be useful at this point since the preceding sections of this chapter have necessarily been couched in general terms. It is proposed, therefore, to examine the changes between the prewar year 1939 and 1947 by the use of the best statistical information available for substitution in the equation of exchange, as follows:

$$P(100) = \frac{1939 \quad M(100 \times V(100))}{T(100)} \quad P_c = \frac{1947 \quad M(313.4 \times V(86.6))}{T(142.3)} = 190.7$$

The value of the factors in 1939 are represented by index numbers of 100, and their values in 1947 are percentages of the 1939 base figures. The stock of payment money (M)² rose from \$35.6 billion in 1939 to \$111.6 billion in 1947, giving an index in the latter year of 313.4. The velocity of circulation of money, (V) as measured by the annual turnover of demand deposits of all commercial banks dropped from 20.2 to 17.5—an index of 86.6 in 1947.³ The index of the physical volume of trade (T)

¹ *Ibid.*, pp. 90, 116.

² Sum of currency outside banks, adjusted demand deposits, and U.S. government deposits.

³ Board of Governors of the Federal Reserve System.

rose between the two dates to a level of 142.3.¹ Solving the equation, the computed price index (P_c) for 1947 is 190.7. This compares with 196.8 and 160.2, respectively, for the official U.S. BLS indexes of wholesale prices and consumer's prices (adjusted to 1939 = 100). The discrepancy is no greater than would be expected in view of the lack of complete information on any factor except the stock of money.

While complete accuracy is impossible, the equation values can be used to explain the principal forces at work. It is evident that the large rise in the stock of money was the inflationary force and that this force was offset in part by the deflationary influences of a small decline in the velocity of money and a substantial rise in the volume of trade.

MONEY ELASTICITY AND THE CYCLE

The great elasticity of modern monetary and banking systems unquestionably accentuates the swings of the business cycle. When the amount of deposit money may be a multiple of commercial bank legal reserves which consist of central bank credit which, in turn, may be a multiple of basic reserve money (gold or other lawful), a scarcity of money is unlikely to provide an automatic check to boom conditions. Instead, the creation of new money by the banks during the expansion phase adds more fuel to the fires. If a monetary check to the boom is applied at all, it must arise from deflationary policies made effective by the government and/or the central bank authorities.

When the contraction phase arrives, the banks again intensify and prolong its course by the destruction of deposit money which takes place as they reduce the amount of their total loans and investments. Government and central bank policies are usually designed to prevent these deflationary developments, but they have thus far had nothing more than a modifying effect.

This raises the question whether the business cycle can be partly or wholly eliminated by appropriately changing the stock of money. But it is desirable to postpone discussion of this point until a later chapter which deals with the problem of monetary control.

Review Questions

1. Define the business cycle.
2. Compare the shorter waves (Kitchins) with the longer waves (Juglars).
3. Bring Chart 11 up to date, and interpret it.

¹ T is measured by the gross national product deflated by an average of the wholesale and consumers' price indexes of the U.S. Bureau of Labor Statistics—\$90.4 billions in 1939 and \$128.6 billion in 1947, which gives an index of 142.3 for the latter year.

4. Compare the fluctuations of durable and nondurable goods production during the round of the business cycle. How do you explain this difference?
5. What features of the cycle are brought out by Chart 12?
6. Indicate the phases and stages of the business cycle.
7. Distinguish between the external and internal forces which are operative in the cycle.
8. Describe the expansion phase of the cycle.
9. Discuss the financial aspects of the expansion phase.
10. Why is it that business does not hold stable at a high level once attained instead of degenerating into a slump?
11. Name the obstacles to business expansion which singly, or in combination, may bring about the downturn.
12. What reasons are there to believe that consumer demand is likely to flag somewhat during stages IV and V?
13. Why are wage costs per unit of product likely to rise more rapidly than selling prices in stage IV so that profit margins may be seriously reduced in certain fields?
14. Describe the contraction phase of the cycle.
15. Discuss the financial aspects of the contraction phase.
16. Explain the upturn or revival stage.
17. Where are the increases that point toward business revival most likely to appear, according to Professor F. C. Mills?
18. Discuss the monetary aspects of revival in business.
19. Interpret the changes in prices, physical volume of trade, stock of payment money, and the velocity of money between 1939 and 1947 in the frame of the equation of exchange.

Advanced Questions and Problems

1. Define and illustrate the principle of acceleration.
2. Define and discuss the principle of the multiplier.
3. Compare the effectiveness of scarcity of money as an obstacle to economic expansion in stage IV of the cycle under the gold-standard era prior to the First World War and under present (1949) monetary conditions.
4. Discuss the relation of monetary elasticity to the swings of the business cycle.
5. Interpret the changes in prices, physical volume of trade, stock of payment money, and the velocity of money between 1947 and the last year for which annual data are available by substitution of index numbers in the equation of exchange.

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CHAPTER XXV

MODERN THEORIES OF PRICES AND PRODUCTION

Since the First World War, new methods and concepts have been developed in the interpretation of dynamic changes in prices and production. While the description of the business cycle given in the preceding chapter makes use of certain of these concepts, it follows more closely the conventional lines of analysis. Before leaving this topic, therefore, it is necessary to give consideration to some of these new methods and concepts. In particular, we shall be concerned with the meaning of the national income and with the theoretical systems of Lord Keynes (John Maynard Keynes) and of the modern Swedish (Stockholm) school.

THE SPECIAL SIGNIFICANCE OF INCOME PAYMENTS

Modern monetary economists give special emphasis to income payments as contrasted with nonincome payments. Income payments are money transactions which represent either payments to income receivers or payments out of these received incomes for consumption or investment purposes. Incomes are received largely in the forms of wages, salaries, profits, interest, and rent. Nonincome payments refer to the much larger category of intermediate transactions—interbusiness payments, speculation, financial transactions, and the like. More precisely, they are the residual after deducting income payments from total money transactions in a given period.

The unique status of income payments arises from their association with the final goal of economic activities, *viz.*, the output of finished goods and services together with their consumption or use. The amount of money income per capita in relation to the height of prices of consumers' goods and services indicates the real standard of economic welfare. Consumers are more directly concerned with the payments which make up their incomes than they are with the payments of business firms for raw materials, parts, supplies, and the other things which represent cost of sales. Likewise, they are more directly concerned with the retail price of clothing than with the price of raw cotton or wool at wholesale. It is proper, therefore, that a special emphasis be given to income payments in the theory underlying changes in prices and production.

Meaning of the National Income. A short digression is necessary at this point in order to develop the concept of the national income and to examine the official income data of the U.S. Department of Commerce. Five different national income aggregates are published: (1) national income, (2) gross national product or expenditure, (3) net national product or expenditure, (4) personal income, and (5) disposable income. These are defined by the Department as follows:

National income is the aggregate earnings of labor and property which arise from the current production of goods and services by the Nation's economy. Thus, it measures the total factor costs of the goods and services produced by

TABLE 24. NATIONAL INCOME BY DISTRIBUTIVE SHARES IN 1939 AND 1948
(In billions of dollars)

	1939	1948
National income.. .. .	72.5	224.4
Compensation of employees.....	47.8	139.4
Income of unincorporated enterprises*....	11.3	43.4
Corporate profits*	5.7	29.2
Rental income of persons	3.5	7.4
Net interest income	4.2	4.9

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 724.

* Includes inventory valuation adjustment.

the economy. The Nation's economy in this context refers to the labor and property supplied by residents of the Nation. Earnings are recorded in the forms in which they accrue to residents of the Nation, inclusive of taxes on these earnings. As such, they consist of the compensation of employees, the profits of corporate and unincorporated enterprises, net interest, and the rental income flowing to persons. [See Table 24.]

Gross national product or expenditure is the market value of the output of goods and services produced by the Nation's economy, before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods. Other business products used up by business in the accounting period are excluded. . . . Gross national product comprises the purchases of goods and services by consumers and government, gross private domestic investment, and net foreign investment. [See Table 25.]

Net national product or expenditure is the market value of the net output of goods and services, produced by the Nation's economy. All business products used up by business in the accounting period are excluded to avoid duplication. . . . Net national product comprises the purchases of goods by consumers and government, net private domestic investment, and net foreign investment. [See Table 27.]

Personal income is the current income received by persons from all sources inclusive of transfers from government and business but exclusive of transfers among persons. Not only individuals (including owners of unincorporated enterprises), but nonprofit institutions, private trust funds, and private pension

TABLE 25. GROSS NATIONAL PRODUCT OR EXPENDITURE, 1939 AND 1948
(In billions of dollars)

	1939	1948
Gross National Product.	90.4	254.9
Personal consumption expenditures	67.4	177.7
Gross private domestic investment	9.0	39.7
Net foreign investment.	0.9	1.5
Government purchases of goods and services	13.1	36.0

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 725.

TABLE 26. PERSONAL INCOME AND DISPOSITION OF INCOME, 1939 AND 1948
(In billions of dollars)

	1939	1948
Personal income:	72.6	213.6
Wage and salary receipts	45.2	132.3
Other labor income	0.5	2.0
Proprietors' and rental income	14.7	50.9
Dividends	3.8	7.8
Personal interest income	5.4	9.5
Transfer payments	3.0	11.1
Less: Personal tax and nontax payments	2.4	21.0
Equals: Disposable personal income	70.2	192.6
Less: Personal consumption expenditures	67.5	177.7
Equals: Personal saving	2.7	14.9

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 725.

and welfare funds are classified as "persons". Personal income is measured as the sum of wage and salary receipts, other labor income, proprietors' and rental income, interest and dividends, and transfer payments. [See Table 26.]

Disposable income is the income remaining to persons after deduction of personal tax and other payments to general government.¹ [See Table 26.]

A more concrete idea of national income in its various aspects may be gained from Tables 24 to 27 which show the components of national

¹ *Survey of Current Business*, National Income Supplement, July, 1947, p. 8.

income, gross national product, personal income, and gross savings for a prewar year (1939) and the third postwar year (1948).

The national income as shown in Table 24 can be secured by adding the factor incomes *paid out* (or retained) by business, government, households, and institutions, and the net payments of factor income to the United States by the rest of the world. It can also be secured by adding the factor incomes *received from* business, government, households, and institutions and the retained factor incomes transferred to capital. The

TABLE 27. RELATION OF GROSS NATIONAL PRODUCT, NATIONAL INCOME, AND PERSONAL INCOME, 1939 AND 1948
(In billions of dollars)

	1939	1948
Gross National Product....	90.4	254.9
Less: Capital consumption allowances..	8.1	14.4
Equals: Net national product	82.3	240.5
Plus: subsidies minus current surplus of government enterprises.....	0.5	0.0
Less: indirect business tax and nontax liability . . .	9.3	19.8
Business transfer payments	0.5	0.6
Statistical discrepancy..	0.5	-4.4
Equals: national income	72.5	224.4
Less: corporate profits inventory valuation adjustment... .	5.8	29.2
Contributions for social insurance . . .	2.1	5.1
Plus: Net interest paid by government.	1.2	4.6
Government transfer payments.....	2.6	10.5
Business transfer payments . . .	0.5	0.6
Equals: Personal income	72.6	213.6

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 724.

most striking feature of Table 24 is the threefold increase of national income between 1939 and 1948. This was partly a result of an increase in physical output and partly a consequence of a rise in prices. It should also be observed that compensation of employees constitutes about two-thirds of the national income.

Gross national product, or expenditure, as shown in Table 25 is computed by adding the purchases of consumers and government, gross private domestic investment, and net foreign investment. It can also be secured by summing the gross product originating in the business, government, personal, and international sectors of the economy. During the Second World War, gross national product was a relevant con-

cept in planning war production. With the life of the nation at stake, consumption of existing capital was of remote importance. Deductions for depreciation and other allowances for capital consumption were therefore not justified in determining potential wartime production. But in peacetime the concepts of national income and net national product are generally more relevant in measuring the performance of the economy. Consumption of capital cannot be disregarded when the economic goal is maximum consumer welfare. For short periods, however, when the gross flow of current output is the object of interest, the concept of gross product is appropriate in peacetime.

The data on personal income as given in Table 26 are basic in determining the market for consumers' goods. The sales of the different types of such goods usually show a close functional relation to the amount of personal consumption expenditures. Also, the amount of personal saving is a fundamental item in any problem of capital formation.

The relations between the main national income aggregates—gross national product, net national product, national income, and personal income—are summarized in Table 27. In studying these relations attention should be focused on the principal items. All minor items are included in order to present a definite quantitative reconciliation.¹

Income Payments and the Equation of Exchange. The special significance of income payments raises the question of the adaptability of the equation of exchange to an analysis which accords proper emphasis to them. Income payments may readily be distinguished from non-income (intermediate) payments by a proper subdivision of the terms. Income may be isolated for analysis by the partial equation

$$M_4V_4 = P_4T_4$$

where M_4 is that part of the money stock held for the purpose of making such payments, V_4 is the velocity of this income money (M_4),² and P_4 represents the price level of the physical goods and services (T_4) included in the income sector of transactions. This sector includes all trans-

¹ For a more complete explanation of the concepts and statistical procedures employed in determining the national income, see *Survey of Current Business*, National Income Supplement, July, 1947. The foregoing discussion is based largely on this official report.

² Income theories of the value of money usually make use of a concept of "income" or "circuit" velocity of money. V_4 may be thought of as a *refined* measure of income velocity, since it relates total income payments to the stock of money *held against such payments*, M_4V_4/M_4 . The most common definition of income velocity, however, represents a *crude* measure, since it relates total income payments to the *total stock* of money, M_4V_4/M .

actions which represent the payments that, taken together, comprise the national income during the given period. All other money transactions (nonincome or intermediate) may likewise be isolated in the partial equation

$$M_5 V_5 = P_5 T_5$$

where M_5 is that part of the money stock held for the purpose of making nonincome payments, V_5 is the velocity of M_5 , and P_5 is the price level of the physical goods and services (T_5) included in the nonincome sector of transactions. Since all money transactions fall in one or the other of these two categories, we have, by addition of the two equations

$$(MV)_4 + (MV)_5 = (PT)_4 + (PT)_5$$

This method of statement may perhaps convey a false impression of separateness between income and nonincome transactions. While they may be separated for analytical purposes, they are in fact closely intertwined. The bulk of income received by individuals is paid by business firms with money which is raised principally from gross sales but may also be raised by bank borrowing and the issuance of securities. Only a small part of net income received is paid directly out of the net income of someone else. Moreover, in the disposition of received net income the greater part of such payments enters into the gross sales of retailers instead of becoming immediate net income of others. The point must not be overlooked that the nonincome transactions are part and parcel of an organic process of net income generation. They empty into the stream of net income received, and are in turn fed by the disposition of net income.

A corollary of the interwoven pattern of income and nonincome payments just discussed is the relation between M_4 (income money) and M_5 (nonincome money). Dollars which are held and disbursed by General Motors for wage payments to tens of thousands of employees largely return to retail firms as gross sales. The greater part of these gross sales is paid to wholesalers, manufacturers, and other firms to purchase inventories, supplies, equipment, structures, services, and so on; a smaller part becomes net income at this stage, being paid as wages and salaries and retained as net profit. This process is repeated, in turn, at each of the several higher stages, with only a small part of gross income becoming net income. Thus, it would be a game of hide-and-seek to follow the course of particular dollars as they are transferred back and forth between the income and nonincome money funds. Nevertheless, the concepts of these separate funds are distinct, even

though particular dollars move in and out through channels of interconnection.

THE CYCLICAL THEORY OF LORD KEYNES

No economist since the days of Adam Smith and David Ricardo¹ has influenced economic theory and public policy so profoundly as Lord Keynes of England. In the field of theory he has developed a new approach which uses a different set of analytical tools, concepts, and terminology from those of the so-called classical economists. This appears in his last book, published in 1936, *The General Theory of Employment, Interest and Money*, which is concerned with the problem of cyclical unemployment. This work has served to split the ranks of economists into the "Keynesians" or "moderns" and the "non-Keynesians" or "neoclassicists." While the differences between traditional theory and Keynes's doctrine are much less fundamental than was first believed to be the case, a number of important divergences exist. Many of the apparent conflicts arise from an analysis of the same phenomenon by means of dissimilar terms, tools, and assumptions, but with no difference in substance.

In the field of public policy Keynes's influence has been no less potent than in the sphere of economic theory. Indeed, he has already proved the observation in the concluding paragraph of his book: "... the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist." The policies of the Roosevelt New Deal found their chief intellectual justification in the philosophy of Keynes and his followers. His ideas have also strongly influenced and continue to influence, the direction of public policies in England, Sweden, Australia, and most other countries of the democratic world.

For these reasons, it is essential to become familiar with the terms and concepts developed by Keynes, and to undertake at least a summary of his theory of the business cycle.

Keynes's Theoretical System. The greater part of Keynes's book is an elaboration of the terms of two simple equations, as follows:

$$(1) \qquad Y = C + S$$

¹ Smith published *The Wealth of Nations* in 1776, and Ricardo published *On the Principles of Political Economy and Taxation* in 1817.

$$(2) \quad Y = C + I$$

The term Y stands for the total national income during a given period in about the same sense as gross national product. That is, Y is the value of national income produced before deductions for depreciation and other allowances for the consumption of capital values. C represents that part of the national income which is expended on consumption and S the remaining part which is saved (not consumed). Consumption (C) is identified with the purchase of finished goods and services by consumers. This definition differs from the traditional one which envisions consumption as the using-up of wealth values by consumers. For example, C is increased by the entire retail price of a household refrigerator at the time of purchase, whereas according to conventional usage the *services* of the refrigerator are gradually consumed over its entire life. Thus, all income received is either spent on consumption goods or is saved: $Y = C + S$.

The term I represents that part of total income (Y) which is earned in the production of investment goods, including increases in business inventories. It also includes the production and sale of capital replacements, since gross investment rather than net investment is contemplated. Now since all income is earned in the production and sale of either consumption goods (C) or investment goods (I), $Y = C + I$. It follows from Eqs. (1) and (2) that by definition saving and investment are always equal. That is, by transposition,

$$(1) \quad S = Y - C$$

$$(2) \quad I = Y - C$$

Therefore

$$S = I$$

According to Keynes's theoretical system the amount of the national income (Y) (and of employment) is determined by the interactions of three basic factors: (1) the propensity to consume, (2) the marginal efficiency of capital, and (3) the rate of interest. Each one of these requires further explanation.

The propensity to consume is defined as the relation between consumer expenditures and the total national income, or C/Y . In an average year the value of this ratio is less than unity, since a part of income is saved and invested. In depression years, however, the ratio may have a value of more than unity, since saving and investment may have a negative value; *i.e.*, consumer expenditures may exceed the national income if capital values are not maintained.

When the propensity to consume is used in a marginal sense, it is called the "marginal propensity to consume." This refers to the proportion of a new increment of income which will be consumed, or $\Delta C/\Delta Y$. Keynes believes that the marginal propensity to consume depends mainly on the level of income—that it declines as the national income increases and rises as income declines. Economists are in general agreement on this point as a short-run proposition, but there is considerable doubt concerning its validity over a long period of time.

The relation between the marginal propensity to consume and the "multiplier" should also be observed at this point. It will be recalled that the multiplier (k)¹ is the number of units of national income which are generated by a new increment of investment, or $\Delta Y/\Delta I$. This relationship can be demonstrated by a simple algebraic process, as follows:

$$\text{The marginal propensity to consume} = \frac{\Delta C}{\Delta Y}$$

$$\text{The multiplier} \quad k = \frac{\Delta Y}{\Delta I}$$

$$\text{But } I = Y - C, \text{ so that} \quad k = \frac{\Delta Y}{\Delta Y - \Delta C}$$

$$\text{Dividing by } \Delta Y, \text{ we have} \quad k = \frac{1}{1 - (\Delta C/\Delta Y)}$$

$$\text{Inverting and transposing, we have, } \frac{\Delta C}{\Delta Y} = 1 - \frac{1}{k}$$

Thus, the marginal propensity to consume is merely another way of expressing the magnitude of the multiplier. If the value of the former is unity, *i.e.*, if all the new increment of income is consumed, the multiplier has a value of infinity. At the other extreme, if the marginal propensity to consume is zero, *i.e.*, if all the new increment of income is saved, the multiplier has a value of 1.

If the propensity to consume (C/Y) is the relation between consumption expenditures and income, then the "propensity to save" is its arithmetic complement, that is, $Y = (C/Y) + (S/Y)$, since all income is either consumed or saved. The "marginal propensity to save"—the proportion of a new increment of income which will be saved—is represented by $\Delta S/\Delta Y$. It also has a definite relation to the multiplier (k),

¹ The symbol k used by Keynes to represent the value of the multiplier is not to be confused with the symbol K used in this text to stand for the relation between the money stock (M) and the amount of money transactions (MV).

being merely another way of expressing the magnitude of k . That is, $\Delta S/\Delta Y = 1/k$, and $k = \Delta Y/\Delta S$.

The second basic factor in Keynes's theoretical scheme is, as indicated, the marginal efficiency of capital. This may preliminarily be thought of as the rate of profit anticipated on a new increment of capital investment over its lifetime. More specifically, when a business firm builds a new plant for \$10 million a series of net returns is *expected* over its economic life, say 20 years. The marginal efficiency of this particular type of capital is then the rate at which this series of net returns must be discounted in order to give a present value equal to the cost of production. Thus, if a net return of \$1 million is expected each year, the marginal efficiency of this type of capital would be 7.758 per cent, the rate at which \$1 million receivable at the end of each year for 20 years must be discounted to have a present value of \$10 million. The marginal efficiency of capital over the whole field is the *highest* of the marginal efficiencies of the different types of capital goods which may be produced, since new capital tends to seek the most promising avenues of investment.

It is helpful to visualize the marginal efficiency of capital as a schedule listing the amounts of investment which would be made during a given period at each of a series of marginal efficiency rates. Such a schedule is constructed under the assumption of a fixed rate of interest. It may be presented diagrammatically with marginal efficiency, the independent variable, measured on the horizontal x axis and amounts of investment, the dependent variable, measured on the vertical y axis. On such a diagram the curve would be a rising one, *i.e.*, with the amount of investment increasing as marginal efficiency rises.

The factors which underlie the marginal efficiency of capital are of a complex nature. In general, any influence which improves profit prospects, such as an anticipated increase in sales or an expected decrease in operating costs, makes for a rise in marginal efficiency, and vice versa. A decrease in the current cost of production of capital goods, or the expectation of a rise in the cost of production of such goods, tends to increase marginal efficiency, and vice versa. Also the level of marginal efficiency is influenced by the scarcity or abundance of existing capital goods.

The third basic factor, the rate of interest, is viewed by Keynes as purely a monetary phenomenon. Interest is defined as the price for the use of money capital, *i.e.*, the price for which the lender agrees to part with money for a specified period and which the borrower agrees to repay in addition to the principal at the end of the period. The rate

of interest is the ratio between this price and the principal sum, usually expressed as a certain per cent per annum. It is determined by the interaction of two factors: (1) the stock of money and (2) the schedule of liquidity-preference. No additional comment is required on the first of these, except that Keynes prefers to include time and savings deposits in the stock of money. Such deposits are excluded from the money stock in this text, it will be recalled, for reasons developed at an earlier point.¹

Liquidity-preference refers to the desire of people to hold resources in the form of money rather than in the form of any other asset. The motives behind this desire are classified by Keynes as (1) the transactions motive, (2) the precautionary motive, and (3) the speculative motive. The transactions motive applies to the need for money to meet personal and business payments. Ordinarily, this motive accounts for the greater part of the money held. The precautionary motive refers to the desire for money on hand to meet definite money liabilities and unforeseen contingencies. The speculative motive has "the object of securing profit from knowing better than the market what the future will bring forth."² Thus, it seeks to avoid losses from a possible decline in the prices of nonmoney assets and to be in a position to purchase such assets at low prices. The transactions motive is satisfied principally by holding demand deposits and currency, while the precautionary and speculative motives are fulfilled more largely by time deposits, although in part by demand deposits and currency.

² Liquidity-preference may be thought of as a schedule which indicates for a given period the amounts of money which the community would wish to hold on the average at each of a series of interest rates. In general, the demand for money balances rises as the interest rate declines. This is true for three reasons:

1. The opportunity cost of holding money is less as the rate falls; *i.e.*, a low yield on high-grade bonds offers less inducement to invest.

2. As the rate declines below a normal level, there is a growing risk in owning high-grade bonds, the prices of which move inversely with interest rates.

3. A low rate of interest tends to encourage business activity and to raise prices, so that more money is needed to meet an enlarged amount of money payments. The response of business to low rates, however, may be very slow unless other conditions to expansion are also favorable.

Thus, the rate of interest tends to rise as the consequence of a decrease

¹ See Chapter XVIII.

² J. M. Keynes, *The General Theory of Employment, Interest, and Money* (New York, Harcourt, Brace and Company, Inc., 1936) p. 170.

in the stock of money and/or an increase in the schedule of liquidity-preference; it tends to fall as the result of an increase in the stock of money and/or a decrease in liquidity-preference.

Great care is taken by Keynes to differentiate between the rate of interest and the marginal efficiency of capital, since he believes that much confusion has arisen from a blurring of this distinction. The amount of investment depends on the relation between these two factors. No investment is profitable when marginal efficiency drops below the interest rate; only replacements are justified when the two rates coincide; and new investment increases in amount as marginal efficiency rises further and further above the rate of interest. Thus, the absolute level of the interest rate is not so important in itself as the *spread* between the two rates. It is true that marginal efficiency tends to become equal to the rate of interest. When it exceeds the rate of interest, investment expansion tends to lower marginal efficiency and the pressure on bank reserves leads to a higher interest rate, so that the discrepancy is eventually removed; when it is below the interest rate, capital consumption (disinvestment) tends to increase marginal efficiency and surplus bank reserves make for a lower interest rate, so that the discrepancy is eventually removed. But this does not mean that the two rates refer to the same thing, or that they are in fact equal, except perhaps for very brief periods.

While Keynes's three basic factors—the propensity to consume, the marginal efficiency of capital, and the interest rate—are independent variables in the sense that a change in each of them influences the national income, they are nevertheless closely interrelated. A change in one of them is likely also to evoke changes in the other two. For example, a rise in the propensity to consume may lead to an increase in the national income which may in turn bring about a rise in the marginal efficiency of capital. From this may follow an expansion in the amount of investment which contributes further to the increase in income. In order to finance this general expansion, it is likely that commercial bank credit will be increased and that the new deposit money will be needed to meet enlarged money payments. The effect of this development which eventually tends to raise the rate of interest may be offset for a time, however, by a decline in liquidity-preference as fears of a further drop in the prices of nonmoney assets are replaced by prospects of a rise. Similarly, a change which begins with either of the other basic factors will have a train of repercussions.

One of the notable contributions which Keynes has made to the theory of economic change is the prominent place which he gives to future ex-

pectations. Business decisions today are based largely on anticipations of sales, costs, incomes, prices, and other factors. However, the most important influence on expectations is past experience. If sales have been high, there is a tendency to believe that they will remain at a high level in the absence of very convincing evidence to the contrary. Thus, expectations have a large part in determining the value of each of Keynes's psychological factors—the marginal efficiency of capital, the propensity to consume, and liquidity-preference.

With this summary of Keynes's theoretical system, we are now in position to consider its application to the business cycle. To begin with, it should be observed that this system in itself implies no particular theory of the cycle. It might be employed to expound an underconsumption (oversaving) theory, an overinvestment theory, a monetary theory, or some other. The fact that Keynes's observations concerning the movements and relationships among his basic factors are presented along with his theoretical scheme has rather generally created the false impression that the two are inseparable. One may entirely accept his methodology but disagree in part, or even completely, with his conclusions.

Before presenting Keynes's own interpretations of changes in national income, employment, output, and prices, it is desirable to consider the more general conclusions which follow from his theoretical system.

First, the forces that make for a short-term expansion in the national income are a rise in the propensity to consume, or an increase in the marginal efficiency of capital, or a decline in the rate of interest; conversely, a short-term decline in the national income is promoted by a decline in the propensity to consume, or a decrease in the marginal efficiency of capital, or a rise in the rate of interest.

Second, the conditions of equilibrium at full employment require a proper balance of the three basic factors. This implies that the relation between the rate of interest and the marginal efficiency of capital will have to be such that the amount of investment will result in a flow of consumers' goods which will be purchased by consumers at prices covering cost, including a normal profit.

Third, if expansionary forces are still in the ascendancy when full employment is attained, they will enlarge the national income only by raising prices, except for the slow increase in production which may occur with the growth of the labor force and the rise of productive efficiency.

Last, the influence of the stock of money is brought to bear on the national income indirectly through its effect on the interest rate, rather than by directly affecting the level of income.

The dominant factor in causing the business cycle in Keynes's own view is the wide fluctuation in the marginal efficiency of capital. Dur-

ing the expansion phase it rises well above the rate of interest, so that the amount of investment increases sharply. In the last stage of the boom, overoptimistic expectations concerning the future yield of capital goods develop, with a failure to give due regard to the growing abundance of such goods, the rising cost of production, and the rising rate of interest. When the actual yield proves to be disappointing, a sudden collapse in marginal efficiency takes place and precipitates the "crisis." Previous errors of optimism are then supplanted by errors of pessimism. The contraction phase is marked by a drop in marginal efficiency well below the rate of interest even despite a sharp decline in the latter. This phase, like expansion, is cumulative. Considerable time is required to permit a recovery in marginal efficiency. This must await the wearing out and obsolescence of capital and the using up of surplus stocks of goods.

Keynes does not ignore, however, the effect of other factors in the cycle, although he assigns them a minor role with the possible exception of the propensity to consume. In view of the great emphasis on his "fundamental psychological law," in discussing the propensity to consume,¹ it is surprising that this factor is not accorded a more positive place in his later interpretation of the business cycle.² This psychological law is that when the national income (Y) rises or declines, consumption (C) will also rise or decline but at a lower rate than the change in income. Since he places particular stress on the application of this law in the short run,³ it would seem to form the basis for an underconsumption theory of the cycle. That is, one would expect Keynes to say that the collapse in the marginal efficiency of capital at the end of the boom is due to prior evidence of lagging consumption. But he does not say so, even though he gives the underconsumption theory his general blessing.⁴ On the contrary, he calls attention to the tendency of the propensity to consume to increase during expansion as capital values generally appreciate and to fall during contraction as they decline.⁵

As regards the rate of interest, Keynes recognizes that its rise at the end of a boom "may certainly play an aggravating and, occasionally perhaps, an initiating part" in bringing on the crisis. But "the explanation of the crisis is, not primarily a rise in the rate of interest, but a sudden collapse in the marginal efficiency of capital."⁶ During contraction emphasis is placed on the inability of the rate of interest to decline below a

¹ *Ibid.*, Ch. VIII.

² *Ibid.*, Ch. XXII.

³ *Ibid.*, p. 97.

⁴ *Ibid.*, p. 324.

⁵ *Ibid.*, pp. 92-93.

⁶ *Ibid.*, p. 315.

minimum level with the result that investment cannot be revived until marginal efficiency once more regains and finally surpasses that level. Both the rise in liquidity-preference and the contraction of the stock of money prevent the rate from declining as much as would be expected in view of the smaller volume of money transactions. Liquidity-preference becomes well-nigh insatiable at a long-term rate in the vicinity of 2 per cent, so that willing holders absorb all or most of additions to the stock of money at the minimum rate. During the first two stages of the expansion phase, the decline in liquidity-preference and the increase in the stock of money combine to prevent more than a nominal rise in the rate despite the expanding amount of money transactions.

Based on the foregoing theory, Keynes proffers a great many opinions and observations concerning appropriate policies to control the cycle. These are far more controversial than his theoretical framework.

THE CYCLICAL THEORY OF THE SWEDISH SCHOOL

If Lord Keynes emphasizes the role of expectations in his theory of economic change, it receives still more stress in the modern Swedish (Stockholm) school of thought.¹ These writers use the concepts of income, consumption, saving, and investment in about the same sense as Keynes. There is also much similarity in their use of the concepts of propensity to consume, marginal efficiency of capital, and rate of interest as basic determinants of economic change—although the emphasis given to them varies.

The principal differences between the theoretical system of the Swedish school and that of Keynes lie in their use of "period analysis" and in their great care to separate realized experiences of the past (*ex post*) from plans for the future (*ex ante*). In the words of Professor Ohlin:

To analyze and explain what happens or what will happen in certain circumstances it is necessary to register the relevant events. One needs a system of book-keeping which is relative to time. Not only is the time sequence of events as a rule important, the same is often true of the time-lags. It is therefore practical to use periods of time as a basis for book-keeping. At the end of each period one can survey the registrations which refer to that period. This answers what has happened during a passed period. It is an account *ex post*.

This, however, explains nothing, for it does not describe the causal or functional relations. As economic events depend on man's actions, one has to investigate what determines these actions. They always refer to a more or less distant future. Hence, one must study those expectations about the future which

¹ The best known figures in the Swedish School are Professor Erik Lindahl, Dr. Erik Lundberg, Professor Gunnar Myrdal, and Professor Bertil Ohlin.

govern the actions, keeping in mind that expectations are based on the experience of the past, although only partly the *immediate* past. This analysis of the forward-looking type can be called *ex ante*. . . . Obviously a combination of *ex post* and *ex ante* analysis amounts simply to this: after a description of actual events during a certain finished period, and of the differences between these events and the expectations which existed at the beginning of the period, there follows an account of those expectations for the future which more or less govern actions during the next period. The registration of events during this second period reveals again that expectations do not all come true, a fact which influences expectations and actions during the third period, *etc.*¹

The analysis deals with entrepreneurs or consumers whose purchases of goods and services are intended either for investment or for consumption. Investment plans are based on the entrepreneurs' knowledge of their existing productive situation and on profit expectations which refer to the expected revenue from an investment over its life after deduction of anticipated costs, including interest. Consumption plans are based on the consumers' knowledge of these existing situations and on expectations concerning future income, prices, and future needs in comparison with present needs. The length of the period does not have an exact time dimension but is such that plans are not changed until the beginning of the next period; this would make it very short—a few days at most.

An *ex ante* equation is distinguished from an *ex post* equation by the use of the subscript *a*, meaning *anticipated*, *expected*, or *planned* instead of *realized* saving, consumption, investment, and income. For example,

$$Y_a = S_a + C_a$$

There is no reason why planned saving (S_a) and planned investment (I_a) should be equal since plans to save are made by one group of individuals and firms under one set of motives, and plans to invest are made mainly by another group under another set of motives. But by definition, as in Keynes's system, the amounts of realized investment and realized saving are always equal. That is, *ex post*, $Y = S + C = I + C$, and therefore $S = I$. An inequality in S_a and I_a sets in motion a process which causes realized income, saving, and investment to differ from Y_a , S_a , and I_a . These differences are called *unexpected income*, *unintentional saving*, and *unexpected investment*. The adjustment process is illustrated as follows:

The business man who, after the closing of his accounts, finds that he has a larger net income than he expected and that therefore the surplus over and above his consumption is greater than his planned savings, has provided "unin-

¹ Bertil Ohlin, "Some Notes on the Stockholm Theory of Savings and Investment," *Economic Journal*, Vol. XLVII, pp. 58-59.

tentional savings" which is equal to his extra surplus. Unexpected new investment which, like unintentional saving, may, of course, be negative, can mean simply that stocks at the end of the period are different from what the entrepreneur expected.¹

The following schematic example of period analysis may give a more definite idea of its application:

Period 1		Period 2		Period 3		Period 4	
<i>Ex post</i>	<i>Ex ante</i>	<i>Ex post</i>	<i>Ex ante</i>	<i>Ex post</i>	<i>Ex ante</i>	<i>Ex post</i>	<i>Ex ante</i>
<i>C</i> 90	<i>C_a</i> 95	95	97	97	97	97	
<i>S</i> 10	<i>S_a</i> 5	7	7	13	13	7	
<i>I</i> 10	<i>I_a</i> 10	7	13	13	7	7	
<i>Y</i> 100	<i>Y_a</i> 100	102	104	110	110	104	

Suppose that the registration of the realized (*ex post*) values in period 1 are as given and that the planned (*ex ante*) value of consumption rises five points at the expense of planned saving with no change in expected investment or income. This would result in a rise of retail sales in period 2 to 95, of which two points may be assigned to the *unexpected* income of retailers which also raises their *unintentional* savings by two points. The remaining three points may be assigned to a reduction in retailers' stocks, so that *unexpected disinvestment* is likewise three points.

Assume now that the enlarged income realized in period 2 causes *ex ante* consumption and savings to rise two points each above the *ex ante* values in period 1 and that *ex ante* investment rises three points in order to rebuild inventories. If planned consumption and investment are carried out, the *ex post* income of period 3 will become 110 and unintentional saving will amount to six points.

Finally, assume that a deterioration takes place in the prospect for profitable investment, so that *ex ante* investment in period 3 drops six points. If these plans are carried through, the *ex post* income and savings of period 4 will also decline six points owing to curtailed investment activity.

Emphasis in explaining economic changes is placed by the Swedish school on the discrepancy between *ex ante* investment and savings. However, they are careful to point out that expansion or contraction may take place when *S_a* and *I_a* are equal. This would happen when a change in expected income and therefore in planned and realized consumption

¹ *Ibid.*, p. 65.

occurs. The Swedes are also disposed to deemphasize the direct mechanical effects of changes in the quantity and velocity of money. They stress instead the speed of reactions, "... the time-sequences and the time-lags between the various reactions—both psychological reactions and the actual transactions—which govern the process much more than the construction of the monetary and banking system. . . . It is better to direct attention to the circumstances which make people change supply and purchases, and to analyze the speed of these reactions, studying the monetary mechanism only as one factor among several."¹

In concluding this brief summary of the Swedish approach, attention should be called to the pioneer work of Professor D. H. Robertson of the London School of Economics in developing the technique of period analysis.² While space does not permit discussion of his method, it is essentially the same as that employed by the Swedish School, but with less emphasis on *ex ante* plans.

COMPARISON OF METHODS

Some of the apparent differences between conventional monetary analysis, the method of Keynes, and the method of the Swedes have real substance; some are merely matters of emphasis; others are pseudo differences in words only. In view of the vagueness which surrounds these differences it is important that we examine them with care.

First, both Keynes and the Swedish school have an "income" theory of the price level. That is, only income payments are given consideration in the determination of the price level; nonincome payments (intermediate transactions) have no part, or at most a hidden part, in the process. In this respect they are in step with a mode which has gained favor, especially since the First World War.

This preoccupation with income payments is in part constructive and in part most unfortunate. It is constructive in that these payments are accorded the heavy emphasis which they deserve. But it is unfortunate that nonincome transactions are given no explicit recognition whatever, even though they are between 10 and 15 times larger in amount. A theory which fails to include them can be no more than a partial theory. That this is true is evident from the equation just developed, $(MV)_4 + (MV)_5 = (PT)_4 + (PT)_5$. While it is proper to isolate income payments in the partial equation $(MV)_4 = (PT)_4$, this equation does not summarize

¹ *Ibid.*, pp. 67-68.

² This method was introduced in Professor Robertson's book, *Banking Policy and the Price Level* (London, P. S. King & Staples, Ltd., 1932), pp. 59ff.; it was developed further in an article "Saving and Hoarding," *Economic Journal*, Vol. XLIII, pp. 399-413.

all the forces affecting the general price level. Changes in the *nonincome* partial equation, $(MV)_s = (PT)_s$, have a definite influence on the *income* partial equation. Each term, being part of a balanced system, must have a value consistent with that of all the other terms. More specifically, an increase in the demand for money held against nonincome payments (a decline in V_s) would tend to lower P_4 , as would also a rise of T_s . All categories of money transactions compete for the stock of money, and therefore exert an influence on the price level.¹

Second, both Keynes and the Swedish school minimize the *direct* influence of the stock of money on the price level and on economic change in general. In Keynes's system, it will be recalled, the stock of money and liquidity-preference (virtually $1/V = K$) are the determinants of the interest rate, and their influence is exerted *indirectly* through it. The same is true in the Swedish method. This has the serious defect, however, of overlooking the fact that when newly created money is spent it enlarges incomes, and thereby tends to increase output and/or prices. The conventional approach on the other hand emphasizes the importance of M and V by including them as definite terms in the equation of exchange. Their indirect influence on the rate of interest and in turn its influence on prices and production must then be dealt with by interpretations.

Moreover, in line with their general disposition to minimize the importance of money and its velocity, Keynes and the Swedish school think of the price level as being determined by marginal costs of production. "In a single industry its particular price-level depends partly on the rate of remuneration of the factors of production which enter into its marginal cost, and partly on the scale of output. There is no reason to modify this conclusion when we pass to industry as a whole."² But prices do not depend solely on marginal cost in a single industry, especially in the short term. Marginal utility (demand) must be given a coordinate place with marginal cost; in fact, the former is frequently dominant. If this is true with regard to particular commodities, it is still more true over the whole field of business. The price level is determined as the flow of money demand (MV) meets the counterflow of goods and services (T). Marginal costs of production are effective as one of the main factors governing *individual* prices and price relations.³

Third, the concepts of the Keynesian and Swedish systems are more

¹ See Arthur W. Marget, *The Theory of Prices* (New York, Prentice-Hall, Inc., 1938), Vol. 1, Ch. XIII, for a more complete statement of this view.

² Keynes, *op. cit.*, p. 294.

³ See Chapter XXIII for a more detailed discussion of this point.

subjective than those of the conventional approach. The propensities to consume or to save, the marginal efficiency of capital, the amount of investment, and liquidity-preference all spring from the decisions of individuals. This is a definite merit, since the most satisfying economic analysis rests on this ultimate foundation. By comparison the equation of exchange is more objective and mechanistic. It is less so, however, than appears to be the case on first view. By the use of the concept $K(I/V)$, it will be recalled, the forces determining the velocity of money may be explained in terms of individual decisions. Moreover, every money transaction which occurs is a result of individual decisions, of which the equation is simply an aggregate expression. The subjective aspects of the economic situation must be introduced more largely by interpretations.

Fourth, the role of expectations is emphasized more by Keynes, and still more by the Swedes, than in the conventional analysis. By the explicit separation of the *ex ante* period (looking forward) from the *ex post* period (looking backward), the Swedish method is designed to provide a place for expectations. But Keynes's concepts and approach *per se* give little more stress to anticipations than the conventional method. The latter provides a place for anticipations in the demand and supply schedules of commodities, the interactions of which determine individual prices. Likewise, anticipated changes have a part in all the individual decisions which give rise to money transactions. The fact that Keynes's personal interpretations of economic change place heavy emphasis on expectations does not necessarily mean that his method is better adapted to doing so. Nor does it mean that equally heavy emphasis cannot be given to expectations by use of the conventional method if one is so disposed. That is to say, Keynes's notable contribution in elevating expectations to their rightful place in economic decisions is more an outgrowth of emphasis than of method. One may usually reach the same goal by the use of either method when properly interpreted, and choice depends to a large extent on habits of thought.

Fifth, the ingenious use of period analysis by the Swedish school to describe a dynamic process of economic development is a distinctive feature of their theoretical system. Since this has already been discussed, it is merely necessary to mention the fact at this point.

Last, considerable differences exist in the interest rate theories of Keynes, of the Swedes, and of the so-called neoclassicists. The importance of this subject is such that the Chapter XXVIII is entirely devoted to its discussion.

In retrospect, the three methods have much in common despite the

differences in substance and emphasis. All use the concepts of stock of money, demand for money, physical volume of production, and the price level in their analytical systems, albeit with varying stresses. For illustration, a short-term expansion of the national income may be explained in Keynesian terms as a consequence of a rise in the marginal efficiency of capital in relation to the rate of interest, with the result that investment expands and income increases. Under conditions of unemployment, both output and prices are likely to rise, but when full employment is reached only prices will rise. The same development may be explained conventionally as follows: A rise in the prospect for business profits in relation to costs of production (including interest) leads to an expansion of both current and investment activities. The money stock (M) is increased as commercial banks extend credit and the velocity of money (V) is likely to rise, both of which make for higher prices. The increase in physical volume of trade (T) prevents prices from rising sharply under conditions of unemployment. But when full employment is reached, a further increase of (MV) finds its outlet almost entirely in rising prices. As an over-all consequence of these developments, the amount of total money transactions—of which the national income is a part—expands..

Review Questions

1. Discuss the special significance of income payments as compared with non-income payments.
2. Define: (a) national income, (b) gross national product, (c) net national product, (d) personal income, and (e) disposable personal income.
3. Point out and account for the principal changes which have taken place in the national income between 1939 and 1948 as given in Tables 24 to 27.
4. Demonstrate how the equation of exchange may be adapted to analyses which emphasize income payments rather than total payments.
5. Define the terms in the two basic equations of Keynes's theoretical system.
6. Prove that saving (S) equals investment (I) according to these definitions.
7. Define (a) the propensity to consume, (b) the marginal propensity to consume, (c) the propensity to save, and (d) the marginal propensity to save.
8. Define and discuss the marginal efficiency of capital.
9. Define and discuss liquidity-preference.
10. Summarize Keynes's theory of determination of the rate of interest.
11. How does the amount of investment depend on the relation between the rate of interest and the marginal efficiency of capital? Explain.
12. What place do expectations occupy in Keynes's theory of economic change?
13. Summarize the general conclusions which follow from Keynes's theoretical system with respect to (a) changes in the national income, (b) conditions of equilibrium, (c) price level, and (d) influence of stock of money.
14. Present Keynes's interpretation of the causes of the business cycle.
15. "The principal differences between the theoretical system of the Swedish school and that of Keynes lie in their use of 'period analysis,' and in their great

care to separate realized experiences of the past (*ex post*) from plans for the future (*ex ante*).” Develop this statement.

16. Interpret the schematic example of period analysis given on page 396.

Advanced Questions and Problems

1. Compare the concepts, income velocity of money and total money transactions velocity. How do they compare quantitatively? Which one is the more significant in an explanation of changes in the general price level?

2. Distinguish between a *refined* and a *crude* measure of income velocity of money. What justification is there for regarding the *crude* measure as “a hybrid conception of no particular significance”?¹

3. Analyze the relation between the marginal propensity to consume and the multiplier.

4. “While Keynes’s three basic factors—the propensity to consume, the marginal efficiency of capital, and the interest rate—are independent variables, they are nevertheless closely interrelated, so that a change in one of them is likely to evoke changes in the other two.” Develop this statement.

5. “Both Keynes and the Swedes have an ‘income’ theory of the price level.” Support this statement.

6. “Both Keynes and the Swedes minimize the *direct* influence of the stock of money on the price level and on economic change in general.” Explain.

7. “The concepts of the Keynesian and Swedish systems are more subjective than those of the conventional approach.” Discuss this statement.

8. What do the three systems—Keynesian, Swedish, and conventional—have in common? Explain.

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¹ See J. M. Keynes, *A Treatise on Money* (New York, Harcourt, Brace and Company, Inc., 1930), Vol. II, p. 24; A. W. Marget, *The Theory of Prices* (New York, Prentice-Hall, Inc., 1938), Vol. I, Ch. XIV.

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CHAPTER XXVI

INTERNATIONAL FINANCE: FOREIGN EXCHANGE

Much has been heard in recent years about the aim of "one world." Proponents of this objective point out that national boundaries cannot confine atomic energy, ideas, scientific knowledge, and economic, political, and social relations. Hence, they conclude that a world community is a logical necessity if civilization is to develop, or even to survive. Advocates disagree widely concerning the nature of a workable world community, ranging from a strong world government to a maximum of co-operation among nations with a minimum surrender of sovereignty. But whatever one's view may be concerning these practical arrangements, the realities of this age point to the logical necessity of "one world" in some sense of the term.

Only tentative progress toward a world community has thus far been achieved in the political field, but considerable progress has been attained in the cultural, scientific, and economic spheres—especially since the middle of the nineteenth century. Few people appreciate the extent to which their standard of life depends on such international cooperation. The best way to grasp the extent of economic interdependence is by a detailed study of the movements of goods, services, and investments across national boundaries. Another way is to note the proportion of the value of exports to national income in the nations of the world—which ranges from about 7 per cent to more than 40 per cent. But this proportion by no means measures the importance of world trade. This can be measured only in terms of the sacrifice to standards of living in the absence of international trade. On this premise starvation would be the lot of many peoples, and no nation would be exempt from an almost unbearable reduction of the amount and variety of consumption goods.

With unimportant exceptions, all foreign trade must be financed. That is, an acceptable means of payment must be given by the buyer to the seller. International trade and finance are inseparable in much the same manner as domestic trade and finance.

Up to this point monetary problems have been discussed primarily from a national viewpoint. Monetary functions and the forces governing the value of money have been considered mainly as related to the

domestic economy. It is now necessary to see that money also has international functions and international values. Its primary world function is to provide a standard and a means of payment for foreign trade and investment. This in turn promotes efficiency in the use of world resources, and it furthers the basic objectives of high-level production, stable employment, and a rising standard of living. The international values of money are measured by the prices of foreign moneys, *i.e.*, by the foreign exchange rates in each country.

ECONOMIC BASIS OF INTERNATIONAL FINANCE

International finance has its basis in the exchange of goods and services among countries. Apart from political controls, such factors as mineral resources, climate, soil qualities, topography, stage of industrial development, and acquired skills of different peoples are the main determinants of the amount and nature of foreign trade. The United States needs the coffee, bananas, tin, copper, oil, and nitrates of Latin America while they need our automobiles, business machines, airplanes, machine tools, and motion pictures.

The products of industry are usually sold where they will bring the highest price, whether in the domestic or the foreign market. But underlying price relations, which apparently direct the flows of trade, are the production cost structures of the various countries. These costs in turn reflect the basic factors enumerated just above. A nation tends to export the products in the production of which it enjoys the greatest comparative advantage or has the least disadvantage and to import the products in the production of which it has the least comparative advantage or the greatest disadvantage. Thus, absolute advantage in production is not essential to profitable export trade. Country X may have an absolute advantage over Country Y in producing articles A, B, and C. Nevertheless, X may find it profitable to import these items from Y and to use its resources in producing articles D, E, and F with respect to which it enjoys an even greater advantage. The incomparability and differences in the exports of nations, however, blur the evidences of this principle, and also in practice limit its application.

The International Transactions Account. The economic basis of international finance can best be visualized by reference to the international transactions account of a nation. This account is presented in Table 28 for the prewar year 1940 and the postwar year 1948 in the United States. In general, it shows the transfers of goods and services to foreign countries from the United States, and vice versa, and how the difference was financed. It summarizes under Receipts the ex-

TABLE 28. INTERNATIONAL TRANSACTIONS OF THE UNITED STATES, 1940 AND 1948
(In millions of dollars)

Item	1940	1948
I. Receipts, total.	5,780	18,373
A. Goods and services, total.....	5,355	16,791
1. Goods.....	4,124	13,445
2. Income on investments.....	564	1,263
3. Other services ...	667	2,083
B. Unilateral transfers.....	59	451
C. Long-term capital, total	366	1,131
1. Movements of U.S. capital invested abroad	209	1,022
2. Movements of foreign capital invested in United States	157	109
II. Payments, total.....	4,344	18,689
A. Goods and services, total.....	3,636	10,481
1. Goods.....	2,713	7,697
2. Income on investments.....	210	291
3. Other services.....	713	2,493
B. Unilateral transfers	269	4,860
C. Long-term capital, total	439	3,348
1. Movements of U.S. capital invested abroad	192	3,073
2. Movements of foreign capital invested in United States	247	275
III. Excess of receipts (+) or payments (-), total..	+1,436	+1,157
A. Goods and services.....	+1,719	+6,310
B. Unilateral transfers.	-210	-4,409
Net goods and services and unilateral transfers	+1,509	+1,901
C. Long-term capital ...	-73	-2,217
IV. Net inflow (+) or outflow (-) of funds on gold and short-term capital account, total....	-2,713	-926
A. Net increase (-) or decrease (+) in U.S. gold stock	-4,243	-1,530
B. Net movement of U.S. short-term capital abroad	+177	+129
C. Net movement of foreign short-term capital in United States....	+1,353	+475
V. Errors and omissions	+1,277	+1,242

SOURCE: U.S. Department of Commerce, Office of Business Economics.

ports of goods, services, and long-term securities to all other countries. These items are termed "credits," and they have the effect of increasing the international monetary purchasing power of the United States.

"Unilateral transfers" of a receipt nature include goods or money given by foreigners to the people or government of the United States without any obligation to repay, *i.e.*, they neither create nor extinguish a debt.

Long-term capital movements classed as receipts are usually designated capital imports. They include decreases in foreign capital assets (equities and obligations) owned by the people or government of the United States and increases of foreign-owned capital assets in the United States. Equities and obligations with an original maturity of over one year are classed as long-term capital items.

Payments, or debits, include the imports by the United States of goods, services, and long-term securities from all other countries. These items have the effect of increasing the monetary purchasing power of foreigners in the United States. Unilateral transfers represent contributions to foreigners, such as lend-lease aid during the war, UNRRA aid after the war, and personal remittances. Long-term capital exports represent acquisitions of foreign capital assets (equities and obligations) by the people or government of the United States and decreases of foreign-owned capital assets in the United States.

An excess of Receipts over Payments of a country must be met by a net inflow of gold and short-term claims on foreigners. Conversely, an excess of Payments over Receipts of a country must be met by a net outflow of gold and by short-term borrowing abroad.

In general, it should be observed that the supply of foreign exchange at the disposal of a country arises from the Receipts (credits), and that the demand for foreign exchange grows out of the Payments (debits).

Emphasis should be placed on the intimate interrelations among the various Receipt and Payment items of the account. For example, the export of goods and services in 1948 valued at \$16.8 billion was possible only because of the net increase in long- and short-term foreign investment of \$1.6 billion, gifts of \$4.4 billion, and a net inflow of gold of \$1.5 billion. In abstract theory, an enlarged receipt (credit) item may have its counterpart in increases of payment (debit) items, decreases of other receipt items, or a combination of the two. The converse is of course true of an enlarged payment item.

Under real conditions there is considerable difference in the adjustability of the various items. Shifts in bank balances and commercial credit ordinarily adjust temporary discrepancies. Then if the disequilibrium persists, a balancing movement of gold may occur. Next in the order of adjustability come shifts in long-term investments and in cer-

tain relatively flexible subdivisions of the goods and service items. Exceptions to this usual order of adjustability arise in periods of great internal and external uncertainty. A flight of short-term and long-term capital may then take place from the weakest to the strongest countries. The factor of safety then transcends the delicate incentives of yields, exchange rates, and price relations. This situation has obtained intermittently since the early 1930's, with attempts of foreigners to convert domestic assets into dollar assets.

Another basic aspect of the international transactions account is its dependence on the prevailing environment. The transactions take place within a framework of the productive capacities of the various countries, price relations, foreign exchange rates, and government regulations of international trade and finance. A change in one or all of these factors involves a change in the account, both in aggregate and in composition.

In further interpretation of Table 28, it should be noticed that United States exports of goods exceeded imports of goods. This feature, known as an active merchandise trade balance, has characterized the foreign trade of this country since the 1880's. Generally speaking, it is the mark of a debtor nation as principal and income are repaid to foreign creditors. The active balance has persisted since the First World War—when we emerged as a creditor nation—mainly because of our growing foreign investments. Also, since the war our large gifts for relief and reconstruction have been an important factor. The huge active merchandise balance of \$6 billion in 1948 represents a temporary postwar situation which cannot persist since the United States will be unwilling to give and invest for long at this rate. Moreover, as recovery proceeds in foreign countries they will be in position to export a greater amount to the United States. But an active trade balance on a smaller scale may be maintained for many years if we continue to lend and give freely to other countries.

The large increase of gold in 1940 was part of the continuous inflow that began with devaluation of the dollar at the end of January, 1934. A decline in the gold stock took place during the war, but the inflow was resumed in 1946 and continued through 1947 and 1948. Finally, comparisons of the accounts of 1940 and 1948 are misleading in real terms in view of the doubling of commodity prices between the two dates. While exports of goods nearly quadrupled in dollar value, they were only about twice as large in physical volume.

FOREIGN TRADE INSTRUMENTS AND FINANCE

Trade Transactions. Foreign trade, like domestic trade, is financed largely on a credit basis; cash transactions are the exception rather than

the rule. But unlike domestic trade in the United States, little use is made of the open book account except between branches or subsidiaries of a parent concern. Instead, a time draft, known as a bill of exchange, is usually drawn by the seller on the buyer. As a simple illustration, assume that an American exporter of raw cotton fills an order of a well-established Belgian textile firm for 1,000 bales¹ at a price of 32 cents per pound. Before shipping, the exporter draws a time draft (say 60 days' sight) on the importer in terms of francs when the current rate of exchange is \$0.0228 per franc. This amounts to 7,017,543 francs. He then takes the draft, known as a commercial bill, to his bank which buys it at the current rate for such bills. The exporter thus receives dollars immediately and is out of the transaction unless some unforeseen difficulty arises. The bank is secured by an ocean bill of lading giving title to the cotton, by marine insurance, and by the contingent liability of the exporter. The bill is then sent to a Belgian correspondent bank which presents it to the importer. Upon the latter's acceptance, he is given the bill of lading which entitles him to receive the cotton when the vessel docks. The American bank may hold the acceptance as a short-term investment, or direct its sale in the Antwerp or Brussels discount market. In the first case, the American bank finances the Belgian textile firm and assumes the risk of a decline in the dollar price of francs. Repayment at the end of 60 days enlarges its franc balance in Belgium. In the second case, the Belgian bank that purchases the bill finances the importer and assumes the risk of a rise in the dollar rate, and the franc balance of the American bank is immediately increased.

While foreign trade is usually financed on a credit basis, the buyer sometimes pays cash in advance or at the time of receipt of the goods. In the latter event the American exporter would draw a sight draft instead of a time draft on the Belgian firm. The bill of lading giving title to the cotton would then be released to the importer upon payment rather than upon acceptance.

The foregoing example is the exception rather than the rule since exporters seldom have sufficient confidence in foreign importers to ship goods on credit without more certain assurance of payment. This assurance is usually provided by a "letter of credit" from an internationally recognized bank which agrees to accept and honor time drafts drawn on it. For illustration, assume the case of an American importer who, having agreed with a foreign exporter as to product, price, and terms, applies to his bank for a "letter of credit." In this contract the bank agrees to accept time drafts up to a specified amount and within a definite period,

¹ 500 pounds per bale.

covering the sale and shipment of goods by the foreign exporter; in turn, the importer agrees to provide the bank with funds to redeem the acceptances at maturity and to keep the bank adequately secured by title to the goods, or otherwise. The importer sends the letter to the foreign exporter who upon its receipt ships the goods and draws the draft on the American bank. After attaching the bill of lading, consular invoice, and insurance policy, the exporter discounts the instrument at his bank, receives the proceeds in money, and is out of the transaction unless subsequent difficulties arise. The foreign bank sends the draft with documents attached to its American correspondent bank which presents it to the importer's bank for acceptance. After accepting it and detaching the documents as security, the importer's bank returns the bankers' acceptance to the American correspondent bank which usually sells it to a dealer. The dealer then disposes of it to the final investor—ordinarily a commercial bank or a Federal Reserve bank. When the acceptance matures, the holder presents it to the importer's bank for payment, the importer presumably having already provided the funds.

While the foreign exporter of goods to the United States usually takes the initiative in drawing the draft on the American bank, as indicated in the preceding illustration, this is not always the case. In some instances the standing of the American importer is so high that the foreign seller is willing to ship the goods with assurance that the importer will accept a time draft or pay a sight draft when the shipment arrives. In order to finance the transaction, the American importer may arrange to have his bank accept a time draft to be sold in the acceptance market. The life of this second draft is usually long enough to cover the period until the importer realizes money from the sale of the product. The bank is safeguarded by retaining title to the goods. In this case, there is no need for a letter of credit.

Bankers' acceptances used to finance exports from the United States often arise under simpler conditions. Having shipped the goods, the exporter draws a draft to the amount of the sale price on the foreign importer. At the same time he draws a second time draft on his own bank to be accepted by it, and for approximately the same amount. After acceptance, this second draft is sold in the market and the exporter immediately realizes the proceeds. The bank takes the foreign draft for collection and usually protects itself by retaining title to the goods until payment is received. The maturity of the second draft is arranged so that collection of the foreign draft will furnish funds for payment of the acceptance. In this instance no letter of credit is needed. But if the credit of the foreign importer is not of the highest, the Ameri-

can exporter may require a letter of credit from a bank in the United States. This would be obtained by the importer through the intermediation of his bank, which would guarantee payment.

The use of dollar acceptances in financing trade between two foreign countries is so similar to that of an import to the United States that a separate illustration is unnecessary. The main difference is that the foreign importer, through his bank, provides the foreign exporter with a letter of credit authorizing him to draw his draft in dollars on a bank in the United States with which the importer's bank previously has opened an "acceptance account." Such an account permits the foreign bank to draw, or to authorize others to draw, time drafts for acceptance by the United States bank up to a specified amount, provided adequate collateral security is furnished and certain other conditions are observed. The draft accompanied by the bill of lading and other documents is sent through correspondent bank channels to be accepted by the bank in the United States. After acceptance, the instrument is usually sold to an acceptance dealer in New York City. When the acceptance is paid at maturity, the amount is deducted from the deposit account of the foreign bank which in turn presumably receives the wherewithal from its customer, the importer. Thus, by this method a shipment of foreign goods which never touches our shores is actually financed by the buyer of the dollar acceptance in the United States.

When the goods reach their foreign destination, they are frequently stored in a warehouse pending sale or use. Dollar acceptance credits may continue to be used in financing such storage, provided the goods are readily marketable staples and the warehouse meets specified standards. The accepting bank in the United States is secured by warehouse receipts which convey title to the goods. Foreign storage of this type may likewise grow out of exports of readily marketable staples from the United States. Also in some cases, the storage of goods abroad financed by dollar acceptances may be entirely independent of prior foreign shipment and dollar financing. In any event the owner of the dollar acceptance in the United States actually provides the funds.

Finance Transactions. While movements of short-term funds between countries are predominantly associated with foreign trade, they may take place under the stimulus of other forces: (1) interest rate differences, (2) prospective changes in foreign exchange rates, and (3) flights of capital seeking safety.

If interest rates are 4 per cent in New York and 2 per cent in London, an inducement to move funds from London to New York exists. In the simplest case, the Midland Bank in London may lend £1 million to the

Chase National Bank of New York and credit the balance of the latter by this amount. The Chase National Bank may then sell a draft on its new foreign balance to a foreign exchange dealer in New York and loan the dollar proceeds at 4 per cent to a security broker. At a later date, say 90 days, the Chase National may call the loan with interest and purchase sterling exchange to repay the Midland Bank. The profit would consist of the difference in rates applied to the principal sum if the sterling exchange rate remains the same. If the price of pounds in dollars has declined, the profit would be enlarged correspondingly, but if it has risen, the profit would be reduced. The profit on the transaction may then be divided on a prearranged basis.

In practice, the Chase National would be more likely to draw a 90-day draft on the Midland Bank which the latter would accept and sell to an acceptance dealer in London. The proceeds would be credited to the sterling balance of the Chase National. Technicalities aside, the main difference is that the Midland Bank advanced the funds in the former case, while in the latter the London acceptance dealer provided them. In both instances the transaction would be called a *dollar* loan. If the Chase National had loaned a 90-day sterling bill of exchange instead of dollars, the transaction would be known as a *sterling* loan. In this case the banks would not be subject to the risk of a rise in the dollar-sterling rate.

As implied in the preceding examples, the main stimulus to dollar loans in New York may come from a prospective decline in the dollar price of pounds as well as from interest rate differences. The larger the decline, the greater the profit derived from the excess of the sale price of sterling over the subsequent purchase price. Under healthy international conditions, such loans made seasonally have the effect of stabilizing the dollar-sterling rate. They tend to furnish more sterling at a time of scarcity and to increase the demand for it when seasonal exports swell the supply. They likewise have the effect of equalizing interest rates between the two money markets.

But when monetary systems break down—as they have since the early 1930's under the stress of depression and war—movements of capital between countries are likely to lose their equilibrating influence and to aggravate the difficulties. "Flights" of capital from countries in the weakest monetary position to those in the strongest position take place. The motive is mainly one of safety from further domestic and international depreciation of the local money. Once underway such a flight spreads fear and feeds on itself until the foreign value of the local money depreciates more rapidly than its domestic value. Also, the external

depreciation actively reacts to produce still higher domestic prices. The United States has acted intermittently like a huge magnet for international funds since the First World War. This situation led many countries to set up systems of foreign exchange control in the 1930's. These were tightened during the war and for the most part remain in effect in 1949.

THE FOREIGN EXCHANGE MARKET

Characteristics. During the gold-standard era before the First World War the foreign exchange market was the freest and broadest market in the world. Dollars, pounds, francs, marks, and lire were bought and sold in leading cities at closely corresponding rates. The moneys of most other countries were also traded on a smaller scale. In addition to its freedom and breadth, the market was also extremely sensitive to changing economic and political conditions the world over.

During the First World War and until the middle 1920's these features were replaced by exchange controls in most countries. The return of England to gold in 1925, followed soon by the sterling bloc¹ and other nations, ushered in once again a broad and relatively open market. But its life was short, since the world depression beginning in 1931 forced Austria, Germany, the sterling bloc, and eventually the other nations off gold. Exchange controls soon followed, and with the advent of war they were further tightened. Since the war, despite the efforts of the International Monetary Fund to bring order and freedom into the market, the United States is the only important country that has been able thus far to abolish exchange controls.

Functions. The primary function of the foreign exchange market is to bring buyers and sellers together and to establish rates that equate the supply and demand for foreign exchange. In this process the claims on foreign moneys of one country growing out of exports are sold to importers who need foreign money to pay for valuable things purchased abroad. Thus, one set of claims largely cancels the other so that only a small balance has to be settled in gold and short-term capital funds under healthy world conditions. The domestic credit cancellation process, which begins in the individual bank and is expanded to the nation by clearing and collection arrangements, is extended to the world through this market.

The vital role of the market can be appreciated only by visualizing the

¹ The sterling bloc in 1925 included the British dominions and Australia, New Zealand, South Africa, the Straits Settlements, British India, and certain other countries whose moneys were closely linked to sterling, *viz.*, Argentina, Denmark, Norway, and Sweden.

character of multilateral trade. Exports from the United States to each of the other nations are not balanced by imports from each of them, country by country, *i.e.*, there is not a bilateral balance of payments. For example, since 1941 the exports of goods and services from the United States have exceeded imports from the British Empire, but exports to Latin America have been less than imports. In turn, Latin America has bought more from the British Empire than it has sold. Thus, dollar claims accruing to Latin American countries were transferred to the British Empire through the foreign exchange market so that the latter could pay the United States.¹

Parties to the Market. The foreign exchange market like others is made up of sellers, buyers, and middlemen—dealers and brokers.

The parties to the selling group and to the buying group can best be understood by reference to Table 28, page 405. Exporters of goods, services, and securities have claims on foreign money which they wish to convert into domestic money. The goods category is ordinarily the predominant one. On the other hand, importers of goods, services, and securities need claims on foreign money to make payment. The claims of the exporting group are bought by dealers whose foreign balances are enlarged upon collection or sale of the claims abroad. The dealers are then in position to sell foreign exchange to the importing group.

Foreign exchange dealing in the United States is largely concentrated in the foreign departments of a few large-city commercial banks, among which those in New York City are predominant. Smaller banks then make arrangements to handle foreign exchange transactions through city correspondents. The metropolitan banks have representation abroad through correspondent banks and in some cases through their own branches. Likewise, foreign banks are represented in the United States through correspondents and branches. In addition to the large dealers there are many specialized dealers who often act as the agents of business firms in the market, and there are numerous independent brokers.

FOREIGN EXCHANGE RATES

Foreign exchange rates are the prices in one country of foreign money units payable in the respective foreign nations. Thus, such rates constitute merely a broadened aspect of the domestic value of money, *viz.*, its *external* purchasing power. In view of the fact that these rates govern both the costs of imports and the selling prices of exports, they have a

¹ See U.S. Department of Commerce, *International Transactions of the United States during the War, 1940-1945* (Washington, U.S. Government Printing Office, 1948), Ch. IV.

profound effect upon the whole economy of a trading nation. When, for example, the price of the pound sterling in New York dropped from \$4.86 in September, 1931, to \$3.25 in December, 1931, owing to England's departure from gold, our export trade was seriously crippled. The United States became an expensive place in which to buy. As a consequence, unemployment in the export and related industries became more serious. At the same time, many of our established industries sought additional tariff protection against foreign imported goods that almost overnight became one-third less expensive.

Rate Determination in Free Markets. The most satisfying explanation of the determination of rates in a free market is in terms of supply and demand schedules. To refer again to Table 28, page 405, the supply of foreign exchange arises from the export of valuable things—goods, services, claims, and gold. Similarly, the demand grows out of imports of valuable objects—goods, services, claims, and gold. The price of foreign moneys in terms of domestic money then emerges from the interaction of these two schedules in the same manner as any free-market price; it is the rate that equates realized demand and realized supply.

Underlying the day-to-day market rate is a normal or equilibrium rate at which demand and supply of exchange tend to be equated over longer periods. Market rates fluctuate around this moving normal, being drawn back to it by the basic forces at work. For example, if wheat is taken as representative of all internationally traded goods and services, and if its price per bushel in New York and London is, respectively, \$1 and 5s., then the equilibrium rate of exchange is £1 = \$4. Stated somewhat differently, exchange equilibrium is that rate which eliminates any unusual profit from selling or buying things in the American market as compared with the English market.

International movements of goods, services, claims, and gold are the means by which the actual exchange rate is constantly driven toward exchange equilibrium. To continue the preceding illustration, if the actual rate on London should rise to £1 = \$5, then it would become highly profitable to buy American wheat and securities and sell them in England. The excessive profit in such trade would finally be eliminated by competition, and the rate would be driven back to the vicinity of £1 = \$4. Incidentally, it should be observed that relatively free trade and capital movements between countries is a necessary condition to the working out of this adjustment process.

This explanation raises no important controversy up to this point, but differences in emphasis exist regarding the forces which underlie the schedules of supply and demand. Some prefer to stress the balance of

international transactions and changes therein; others to stress the relation between the prices of one country and those of other countries. The former may be termed a balance-of-transactions theory; the latter a price-level theory.

The Balance-of-transactions Theory. The balance-of-transactions theory places emphasis on changes in the terms of trade between countries and on international capital movements as determinants of foreign exchange rates and internal prices. For example, if the foreign demand for American cotton and machinery rose substantially while our demands for foreign goods remained the same, changes in exchange rates and prices would be necessary to establish a new equilibrium. Under fiat paper standards, the adjustment would doubtless occur mainly through a rise in the international value of the dollar. Also, the prices of cotton and machinery in the United States would tend to rise, and the prices of imported products to fall. A similar effect might be expected from heavy purchases of our securities by foreigners.

While the validity of this analysis is almost beyond dispute, there is still room for criticism of the overemphasis given to this line of causation. It is true that prices are affected by capital movements and changes in the terms of trade. But in periods of dynamic change it is more often true that monetary expansion or contraction affects prices, which in turn influence the balance of transactions and exchange rates.

The Price-level Theory. The distinguishing feature of the price-level theory is that the exchange rate between two countries is believed to depend upon the ratio between their respective price levels, or subdivisions thereof. That is, causation proceeds from prices to the character of the balance of transactions and thence to exchange rates.

The leading exponent of the price-level theory—often called the purchasing-power parity theory—was Professor Gustav Cassel of Sweden. He originally set forth, in 1918, an *absolute* version of the theory: that the normal equilibrium rate of exchange between two countries is the quotient of their general price levels. That is, when a pound purchases four times as much in England as a dollar does in the United States, then the equilibrium rate is £1 = \$4. This represents a normal about which market rates fluctuate and to which actual rates tend to return.

A few years later Cassel revised the doctrine to a *comparative* basis which was somewhat more valid. According to the new statement, the current equilibrium rate is an old normal rate, assumed to exist in a selected base period, multiplied by the ratio between the two countries' price indexes, measured from a common base period. To use a concrete example, the wholesale price indexes of England and the United States

(translated to a common basis of 1930 = 100) stood at 220 and 196, respectively, in September, 1948. If the mint par be used as the normal rate in 1930, then the purchasing-power parity for September, 1948 would be $196/220 \times \$4.866 = \4.33 . The actual rate on this date was \$4.0315, so that by this measure the pound was undervalued in the market by about 7 per cent.

Even the comparative version of the purchasing-power parity theory is, however, subject to serious limitations.

First, it is assumed that the exchange rate of the base year is an equilibrium rate. This is unlikely to be true in a strict sense, and the error may be a very considerable one.

Second, it is assumed that there has been no change in the relative prices of domestic and export commodities in either country. But in fact such changes are constantly in progress.

Third, since services do not enter into the formula, it is assumed that no change has occurred in the relative prices of commodities and export services in either country.

Fourth, the assumption is made that no change has taken place in the relation between the prices of the things exported by the two countries, *i.e.*, that the terms of trade have remained the same.

Fifth, it is assumed that the price indexes are representative and comparable measures of price changes in the countries.

Last, the assumption is made that no change has occurred in the various regulations influencing the flow of commodities and securities between the countries. In this age of tariffs, export subsidies, exchange quotas, embargoes, and interference with capital movements, the discrepancy from this source would necessarily be large. Altogether, these important limitations reduce the usefulness of the formula to that of giving a rough approximation of the equilibrium exchange rate when it is known that the disturbing changes have been small.

Upon analysis it seems evident that neither the balance-of-transactions theory nor the price-level theory presents a complete explanation of the demand and supply of foreign exchange, although both contain elements of truth. When properly integrated, they become complementary and do provide a satisfactory explanation. Ordinarily the relation between prices of internationally traded goods in the various moneys is paramount in determining the equilibrium rates of exchange. Domestic monetary and fiscal policies strongly influence the prices of each country, and, in turn, rates of exchange largely reflect intercountry price relations.

The influence of balance-of-transactions factors is always present, however, modifying the net result in greater or less degree. Intensities of

foreign demand for the products of the various countries change as do also their capacities to export. This implies changes in the terms of trade among them. Under certain circumstances the nature of the balance of transactions may temporarily become far more important in the explanation than is usually the case. European countries during the early postwar years may be cited as an example. With productive capacity destroyed and disorganized, they were unable to export enough to the United States and elsewhere to pay for needed consumption goods and for raw materials required in production. Yet their need for imports was so imperative that prices paid were not controlling. Thus, the items in the international balance of transactions became causative to an extraordinary extent in determining the supply and demand for foreign exchange.

Case of the Gold Standard. The determination of foreign exchange rates between gold-standard countries is a special case under the general principle just developed. The "par of exchange" is the ratio between the respective treasury prices of a given weight of gold, say 1 ounce. The prewar par between the English pound (sovereign) and the dollar was £1 = \$4.866; i.e., $\$20.67 \div \pounds 4.25$. The fluctuations of the rate were limited to a narrow range above and below par determined by the costs of importing and exporting gold.¹

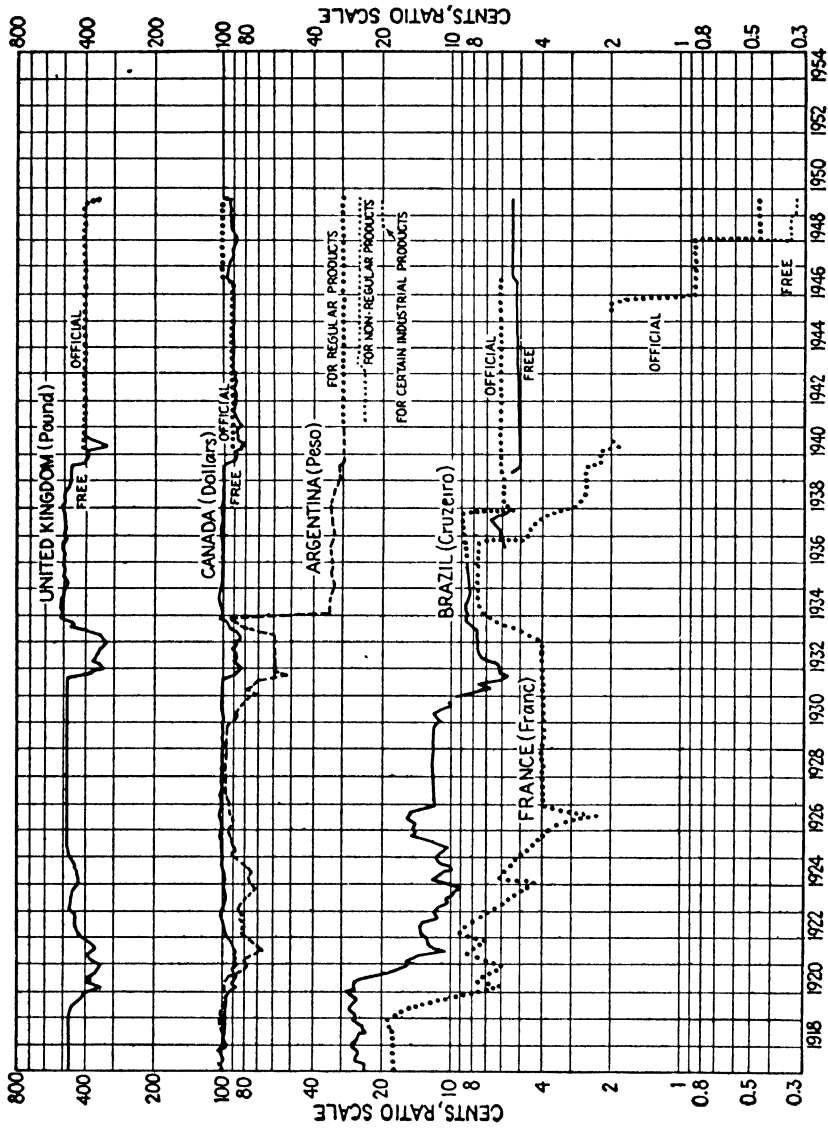
The special analysis which is applicable to the gold standard, however, is not inconsistent with the general supply and demand approach, or with the broader concept of an equilibrium rate of exchange. The equilibrium rate is the one toward which market rates are drawn, whether the gold standard or some other standard prevails. Under gold the adjustment of price levels and balances of transactions must be such that the general exchange equilibrium rate falls within the gold import and export points. Otherwise, the gold movement will persist until the gold-losing nation will have to cut away from its former gold mooring.

In contrast with the gold-standard case, exchange rates are free to change under independent monetary standards in response to intercoun-try changes in price levels and balances of transactions. In fact, changes in rates become the chief means of reaching international equilibrium when independent domestic monetary objectives are followed in the various countries.

Rates since the First World War. Changes in rates of selected foreign moneys since 1917 are shown in Chart 13. During the four decades preceding the First World War, the rates on Canada, France, and the

¹ See Chapter V for an explanation of the automatic corrective forces under the traditional gold standard.

CHART 13. FOREIGN EXCHANGE RATES, * 1917-1949



Source: Adapted from *Federal Reserve Charts*; monthly averages of daily figures.
* New York cable transfers, in cents per unit of foreign currency.

United Kingdom would appear as a straight line on the chart since the gold standard prevailed. Rates were pegged during the First World War, but all the moneys declined when free markets were again permitted. The United Kingdom and Canada returned to gold on the prewar basis, but the franc was devalued in 1927 to about one-fifth its former weight in gold. In the early 1930's, under the influence of world depression, all the moneys again declined with the exception of the franc. It was in a strong position, having been undervalued in gold in 1927, and France resisted the world tide of money depreciation until late 1936. The franc rose sharply when the United States cut away from gold in 1933.

With the advent of the Second World War rates were again pegged, and they were still under strict control in 1949 on a multiple rate basis. Of the moneys included on the chart, the franc is the outstanding example of depreciation—about one-sixtieth of its value before the First World War. But the decline of the franc is mild compared with the moneys of several other countries. For example, the Chinese yuan was quoted at 12 million to the dollar in August, 1948, compared with 3.33 per dollar in 1938.¹

Exchange Arbitrage. Arbitrage transactions are engaged in by dealers whenever a profit can be made because of a difference in the price of a country's money in two or more international money markets. The money is purchased in the cheapest market and sold in the dearest one until equivalence is established, *i.e.*, until the discrepancy—and along with it the profit opportunity—is eliminated.

For example, if sterling cables are quoted at \$4.035 in New York and at \$4.03 in London, a New York bank may sell £1,000,000 for \$4,035,000 in New York and then direct its London branch simultaneously to sell \$4,030,000 in London to cover the sale of pounds in New York. The gross profit would thus be \$5,000. Such transactions have the effect of lowering the dollar value of sterling in New York and of raising the sterling value of dollars in London until equivalence is established, say at \$4.0325 in both markets. Oftentimes an opportunity for arbitrage profit appears in which the moneys of three or four countries are involved. While transactions of this kind are more complex, the principle remains the same.

Exchange Control. The foregoing discussion of exchange-rate determination has assumed a relatively free market. But this condition has not obtained since the early 1930's. Instead, many governments brought

¹ On August 19, 1948, China issued a new yuan at the official rate of four to the dollar.

international transactions and exchange rates under control during the depression, and applied far more rigid controls during the war. To date (1949) some relaxation has taken place, but foreign exchange markets remain for the most part regulated rather than free. This means that the principles of rate determination in free markets do not explain existing rates, except to the extent that freedom exists. In most cases then the rates of today must be explained very largely by the government regulations that apply. Further discussion of this topic is undertaken in the next chapter.

The Structure of Foreign Exchange Rates. For the sake of simplicity the discussion thus far of foreign exchange rates has given the impression that there is a single rate on each country. But this is not the case at all. Rather, there is a structure of rates representing the different types and maturities of exchange, as indicated by the following quotations of sterling exchange on December 6, 1948:¹

Basis	\$4.03
Cables.....	4.03 $\frac{1}{4}$
Demand.....	4.03 $\frac{1}{4}$
30 days'.. . . .	4.03 $\frac{1}{16}$
60 days'.....	4.02 $\frac{13}{16}$
90 days'.....	4.02 $\frac{3}{8}$

The "basis" refers to the official certified rate under the International Monetary Fund. This rate remains fixed unless arrangements for a change are made between the United Kingdom and the Fund. No commercial transactions take place at this rate unless by coincidence the market rate exactly corresponds.

Banks usually look upon the rate on cables as the *base* for all other rates in the market. This is because the time element is not a factor in this rate. A London exporter may receive payment in pounds within a few hours after the New York importer buys a cable transfer. In such a transaction the amount in pounds is deducted from the balance of the New York bank in the London bank.

Demand or sight exchange is composed of bills of exchange payable in pounds in London when presented to the drawee. This means that they will not be cashed for a day or so if flown by air mail, and not for five to seven days if sent by boat. Meanwhile, the selling bank has possession of the funds in both markets. For this reason, demand drafts almost always sold before the war at a lower rate than cables. The difference in price was mainly accounted for by the interest that could be earned on the funds in the New York market during the interim before collection.

¹ *The New York Times*, December 7, 1948, p. 51.

But air mail has reduced this difference in sterling to a nominal one, and on December 6, 1948, the cable and demand quotations were identical, except that the cable charge (not included in quoted rate) exceeded postage.

In the case of time drafts on London, interest becomes a more important element. In the quotations given above, the 90-day rate was $\frac{7}{8}$ cent lower than the cable rate. This can be explained in the main by the fact that the discount rate on 90-day bills in London was $17\frac{1}{32}$ per cent per annum. The discount rate in London rather than in New York is relevant since the bill would be discounted, if at all, in the London money market. From this it will be noted that the spread between cable and time rates depends largely on the discount rate for the type of bill in question and the maturity of the bill. The higher the rate of discount and the longer the maturity, the greater the spread; the lower the rate of discount and the shorter the maturity, the less the spread.

Rates of exchange on time drafts are often confused with *forward* rates of exchange. The latter are quoted on, and appear in, contracts calling for *future delivery* of exchange. Dealers contract to deliver demand or cable exchange on a future date and to buy time bills for future delivery; there is no immediate payment in domestic money. By contrast, in the spot market all exchange is paid for immediately with domestic money whether in the form of cables, demand, or time drafts.

Rates in the forward market may also best be explained in terms of supply and demand. The supply of forward exchange arises from exporters of goods, services, and securities who draw time drafts on foreign importers in terms of foreign money. In order to hedge against a decline in the cable or demand rate by the time of maturity, they may immediately enter into a forward contract to deliver a definite amount of foreign exchange at a stated rate on the maturity date. "Bear" speculators may likewise add to the supply in the belief that they will be able to purchase cover for the contract at a lower rate.

The demand for forward exchange comes from importers of goods, services, and securities who must make a foreign payment at a future date. As a means of eliminating the risk of a rise in the rate, they may contract immediately to purchase cable or demand exchange at a definite price on a future date. "Bull" speculators may also contribute to the demand.

Forward rates of exchange then emerge, like all free-market prices, from the interactions of the supply and demand schedules. Since the forces at work are to a large extent independent of those operating in the spot markets, the rates may at times rise above the cable rate, and at other times may go well below the cable rate.

The widespread government controls of foreign exchange rates during the war and until the present (1949) have narrowed the market for forward exchange until no leading financial paper now carries quotations. When and if international financial relations are reestablished on an orderly and relatively free basis, the forward market may be expected to revive.

Review Questions

1. State the primary international function of money.
2. Is absolute advantage in production essential to profitable export trade by a country? Explain.
3. Describe the main features of the international transactions account of a country. What is included under (a) receipts (credits) and (b) payments (debits)?
4. What circumstances made possible the huge active merchandise trade balance of \$6 billion in the international transactions account of the United States in 1948?
5. Give an illustration of financing an export of goods from the United States.
6. Illustrate the use of dollar bank acceptances in financing trade between two foreign countries.
7. Give an example of a finance transaction growing out of an interest rate of 2 per cent in New York and 4 per cent in London.
8. Indicate how finance transactions may arise out of (a) prospective changes in foreign exchange rates and (b) flights of capital seeking safety.
9. State the primary function of the foreign exchange market.
10. Distinguish between multilateral and bilateral trade.
11. Characterize the parties which are represented in the foreign exchange market.
12. Define the term "foreign exchange rate."
13. Explain the determination of current rates of foreign exchange under the assumption of a free market.
14. Develop the concept of a normal or equilibrium rate of exchange. How does this differ from the day-to-day rate?
15. Summarize the balance-of-transactions theory of foreign exchange rate determination.
16. Summarize the price-level theory of foreign exchange rate determination. What are its limitations?
17. Integrate the balance-of-transactions theory and the price-level theory into a more satisfactory explanation than either provides by itself.
18. Explain the determination of foreign exchange rates between gold-standard countries.
19. Interpret the changes in foreign exchange rates since 1917 as shown in Chart 13.
20. Define foreign exchange arbitrage and give an example of this type of operation.
21. Why is it more accurate to speak of a structure of foreign exchange rates on a given country rather than a single rate?
22. Why is the cable rate regarded as the base for other rates?

23. Define (a) demand or sight foreign exchange and (b) rates of exchange on time drafts.
24. Explain the main features of the forward market in foreign exchange.

Advanced Questions and Problems

1. Outline different methods of measuring the importance of world trade.
2. Show that the analysis of foreign exchange rate determination between gold-standard countries is a special case under the broader concept of exchange equilibrium and that it is also consistent with the supply and demand approach in explaining current rates.
3. Bring Chart 13 up to date, and interpret the most recent changes in foreign exchange rates.

CHAPTER XXVII.

INTERNATIONAL FINANCE: RECENT DEVELOPMENTS

During the half century preceding the First World War, international financial relations—except for minor interruptions—proceeded in an orderly manner. Leading commercial nations were on the gold standard, so that foreign exchange rates were stable. Much of the orderliness grew out of the dominant position of England in the international field. London was the leading financial center of the world, and a large part of international trade was financed in terms of the pound sterling. Moreover, the free-trade policies of England promoted international movements of goods, services, and capital, and thereby encouraged world economic cooperation.

But the First World War brought this orderly peacetime era to an abrupt end and ushered in a period of dynamic change and uncertainty. The domestic economies of the nations involved were left prostrate and international trade relations were disrupted. War finance resulted in unmanageable government debts, inflationary issuance of money, and disorganized monetary systems. On top of all this, the peace settlements saddled Germany with heavy reparations which were viewed by the Allies as the main source of war-debt payments to the United States. Thus, the legacy of the First World War was such that there was little prospect of attaining international equilibrium in the economic field for a decade or more.

Monetary reconstruction was a slow process. Dollar exchange rates, which had been “pegged” during the war, rose sharply in European countries as soon as the controls were lifted. This was partly in response to the demand for American exports and partly to flights of capital to the United States in search of safety. Not until the middle or late 1920's did the main commercial nations return to a managed form of the gold standard. This brought stable exchanges again for a brief period which ended with the advent of the world depression. From this point on to the outbreak of the Second World War, government controls of foreign exchanges became widespread, although certain countries—notably the United States, the United Kingdom, and France—maintained relatively free markets. These controls become more sweep-

ing and rigid during the war, and little relaxation of them took place during the first four postwar years.

EXCHANGE CONTROL DURING THE 1930's

The decisions of leading nations in the mid-1920's to return to gold were based on a rather definite international economic philosophy. First, emphasis was placed on the large importance, and the encouragement, of international movements of goods, services, and capital, *i.e.*, on maximum economic cooperation. As a means of encouragement to such cooperation, stable exchange rates were elevated to one of the major national aims. Also, an expressed or implied part of the policy was relative freedom from such trade obstructions as high tariffs, import or export quotas, planned exchange depreciation, and various types of exchange control. Second, the philosophy accepted the necessity of making domestic adjustments in order to realize equilibrium in the international transactions account without disturbing the gold parity with other moneys. In the event of an overvaluation of a country's money in gold this meant a willingness to face for a time higher interest rates, declining commodity prices, reduced production, and unemployment. Conversely, it meant a willingness to permit a gold inflow to have an inflationary effect on the domestic economy.

A sharply contrasting philosophy emerged in the early 1930's under the impact of the great depression. In September, 1931, the United Kingdom led the sterling bloc off gold, and one by one the other nations of the world followed suit. Some of them were forced to take the step, but many took it consciously rather than face deflationary internal adjustments. From this point on the new philosophy prevailed, *viz.*, that the health of the domestic economy was paramount and that international economic relations were secondary. If maintenance of gold with its stable exchanges entailed seriously declining prices and unemployment, then gold must go.

The principal aim of foreign exchange policies in these years was the control of the international transactions account in the apparent interest of the nation. This often led to insulation of the domestic economy from the effects of changes in the account and to conscious efforts to promote exports. Space does not permit a detailed description of exchange control practices, but it is desirable to summarize the main methods employed: (1) exchange stabilization funds; (2) foreign exchange standards; (3) exchange depreciation; and (4) government monopoly and rationing of foreign exchange.

Exchange Stabilization Funds. An understanding of the principles

and practices of exchange stabilization funds can best be gained by brief description of the two principal funds—the British Exchange Equalization Account and the United States Exchange Stabilization Fund.

The British Account was established in mid-1932 as an agency of the British treasury with resources consisting of short-term treasury obligations (bills). Within the limits of resources the Account was then in position to support or depress sterling exchange in accordance with existing policies. When the object was to depress sterling in terms of dollars, the Account would convert its bills into deposits and purchase dollar exchange in the market. Conversely, when it was desired to support sterling, dollar exchange could be sold. In the event that the foreign exchange resources of the Account became depleted, they might be replenished by foreign borrowing or by gold exports.

The Exchange Stabilization Fund of the United States was set up in January, 1934, as a division of the Treasury. Gold resources of \$2 billion were assigned to it out of the gold profit from devaluation of the dollar on the same date. When dollars were needed, the Fund could deposit gold certificates to its deposit account in the Federal Reserve Bank of New York. Foreign exchange resources could be obtained by purchase in the market, or by export of gold. Thus, having both dollar and foreign exchange resources, the Fund was able to support or depress dollar exchange in accordance with current policies.

A number of exchange stabilization agreements have been made by the Treasury with other countries, including Mexico, Ecuador, Cuba, Brazil, India, and the United Kingdom. For example, in the agreement with Brazil the Fund undertakes to buy as much as \$100 million of cruzeiros and the Treasury agrees to sell up to \$300 million of gold to Brazil for the purpose of stabilizing the dollar-cruzeiro exchange rate.¹ It is of interest that the Fund owned \$56 million of foreign exchange at the end of 1948. The remainder of its resources was mainly composed of cash (\$71 million), gold (\$155 million), and United States bonds (\$20 million). During 1946 and 1947, \$1,800 million of the Fund's gold was transferred to the International Monetary Fund as part of the subscription of the United States. The net profit of the Fund between January 31, 1934, and December 31, 1948, was \$89.4 million.²

The main purpose of exchange stabilization funds is to preserve an orderly market by offsetting the influence of forces that disturb rates temporarily. In the absence of direct control of the supply and demand for exchange, a fund cannot hold the rate at an artificial level for long

¹ *Annual Report of the Secretary of the Treasury*, fiscal 1945, p. 94.

² *Treasury Bulletin*, May, 1949, pp. 48–49.

periods of time. To do so would either mean acquisition of more foreign exchange than is justified (depressing local money) or larger gold exports and foreign borrowing than are justified (supporting local money).

Foreign Exchange Standards. Closely allied to the formal use of exchange stabilization funds was the policy adopted by many small countries of linking the foreign value of their money to that of a major nation. An outstanding feature of the return to gold in the middle 1920's was the widespread adoption of the gold-exchange standard. A number of small nations that were economic satellites of the United Kingdom and the United States undertook to stabilize the value of their moneys in terms of the pound sterling or the dollar. For example, the Indian rupee was pegged to the pound sterling, and the Philippine peso to the dollar. When the United Kingdom abandoned gold in 1931, her satellites followed the same course. Most of them continued the policy of stabilizing their moneys in terms of sterling with the result that their monetary standards might well be termed "foreign exchange" standards, or more specifically "sterling exchange" standards. This meant that the exchange policies of the entire sterling bloc were very largely determined by the United Kingdom. Likewise, the Philippines and certain Latin American countries continued their dollar peg when the United States left gold in 1933.

Exchange Depreciation. In the early 1930's certain countries waged a mild form of economic warfare by encouraging depreciation of the foreign value of their moneys. For a time this stimulated the exports and depressed the imports of these countries, since foreign exchange rates rose more rapidly than internal prices. The sterling bloc and Japan were accused by the gold-standard countries of pursuing this policy, especially during 1932.

When foreign exchange rates are in equilibrium, one country can gain advantage from exchange depreciation only at the expense of others. Moreover, its advantage is almost certain to be short-lived. Prompt retaliation from other nations can be expected in the forms of competitive depreciations, import quotas, and exchange controls. Also, to the extent that exports temporarily exceed imports, the prices of foreign moneys in terms of domestic money tend to decline. A nation adopting this policy must also bear in mind that while it may give relief when the foreign value of a money is too high, the cost of imports rises and the terms of trade become unfavorable. From the standpoints of the world economy and of international cooperation the policy is a destructive one. In recognition of this fact in September, 1936, the United States, the United Kingdom, and France entered into the so-

called Tripartite Agreement which provided for joint cooperation in exchange stabilization. It condemned competitive exchange depreciation, but recognized the desirability of adjusting the foreign value of a money in response to basic changes in international transactions accounts.

Government Rationing of Foreign Exchange. In contrast to the overall types of exchange control thus far discussed, many countries went much further and set up a more or less complete government monopoly. All, or the bulk of, foreign exchange arising from exports and other sources had to be sold to the foreign exchange authority. In turn, the authority rationed the exchange among importers under a scale of priorities. Necessities for consumption and for industrial raw materials needed were usually given highest priorities, while luxuries and capital outflows were given the lowest.

Often coupled with the rationing arrangement was a system of dual or multiple exchange rates. Imports of highest priority could be paid for at the official rate; other import categories had to be paid for at higher rates in terms of domestic money. On the other hand, exchange arising from exports of highest priority was frequently purchased at the highest price in local money, while exchange growing out of less favored exports had to be sold at lower prices. Foreign investments were often strictly limited or even entirely prohibited. To this end, deposits of foreign banks and businesses were blocked. Of all countries, Germany developed detailed exchange control to the greatest degree. While the official exchange rate was maintained at about 40 cents, a maze of discount marks for various purposes ranged on down to about 4 cents at the end of 1938. This structure of rates was complemented by a system of exchange rationing, clearing agreements, and bilateral trade. Exchange rationing and multiple rates also prevailed in Latin America, and have persisted since the war. In fact all but two of the thirteen countries—Honduras and Venezuela—had multiple rates in 1948. As an illustration, in May, 1949, there were three rates for the Argentinian peso: (1) regular products, 29.773 cents; nonregular products, 25.125 cents; and certain industrial products, 20 cents.¹

The immediate aim of such rationing and multiple systems was, and is, to achieve a balance of international transactions without subjecting the internal economy to undesired adjustments. There was also a desire to give the appearance of stability by maintaining the official rate unchanged. Limitation of imports to the amount of exports was the object of greatest concern, although certain exports were encouraged.

¹ *Federal Reserve Bulletin*, June, 1949, p. 753.

In general, the system was shortsighted except as a very temporary measure. By limiting imports and engaging in bilateral trade, the purchasing power of other nations to buy exports was also limited. This meant that all nations suffered the sacrifices of restricted economic cooperation.

FINANCIAL RECONSTRUCTION

During the Second World War the requirements of allied nations were met in the main by lend-lease aid. To June 30, 1947, the gross amount of such aid was \$50.4 billion, and the net amount, after allowing for reverse lend-lease and repayments, was \$40.9 billion.¹ The bulk of exports from the United States was composed of lend-lease transfers. But with the end of hostilities this type of aid was terminated, and it became necessary to finance the large dollar requirements of other countries in a different manner. These requirements were met largely by gifts through UNRRA (United Nations Relief and Rehabilitation Administration), loans by the Export-Import Bank, the Anglo-American Financial Agreement, loans by the International Bank for Reconstruction and Development, and grants by the Economic Cooperation Administration (Marshall Plan). Monetary reconstruction was advanced by the International Monetary Fund.

The Export-Import Bank. One of the first steps in the transition period was enlargement of the limit on loans and guaranties of the Export-Import Bank from \$700 million to \$3.5 billion.² The Bank was already a going concern, having been established in 1934 to make loans and guaranties in the promotion of the export and import trade of the United States. The policies which have guided the Bank in its lending operations have been as follows: (1) to lend only for specific purposes; (2) to make loans only when there is reasonable assurance of repayment; (3) to finance only purchases of materials, equipment, and technical services of American firms and individuals; and (4) to lend only when credit is not available from banks and other private sources.

At midyear 1948 the total of loans and undisbursed credit authorizations of the Bank was \$2.9 billion. Thus, only \$600 million of uncommitted lending power remained. Some idea of the wide distribution of activities is given by the fact that 55 countries were recipients of loans and authorized credits. Europe was the largest beneficiary with outstanding loans and undisbursed credit of 1.9 billion—about two-thirds of the total.³

¹ *Annual Report of the Secretary of the Treasury*, fiscal 1947, p. 117.

² Export-Import Bank Act of 1945, approved July 31.

³ *Sixth Semiannual Report of the Export-Import Bank*, 1948, pp. 1, 35.

The Anglo-American Financial Agreement. Another important step in solving pressing postwar problems was the Anglo-American Financial Agreement, ratified on July 15, 1946. There were three related aspects of the agreement.

First, the United States extended a credit of \$3,750 million to finance necessary imports of the United Kingdom.

Second, a further credit of \$650 million was granted by the United States to cover final settlement with respect to lend-lease and other war claims. The combined credit of \$4.4 billion with interest at 2 per cent was to be repaid in 50 equal annual instalments beginning on December 31, 1951. Provision was made, however, for waiving the interest portion of the debt in case the United Kingdom experienced serious difficulty in meeting the scheduled payments.¹

Third, the United Kingdom agreed to lift foreign exchange controls on current transactions and on accumulated sterling balances as soon as possible. Exchange restrictions on current transactions with the United States were to be lifted immediately, and most of the others within one year. By July 15, 1947, sterling arising out of current transactions had been made freely convertible into foreign moneys. But convertibility could not be maintained, owing to a mounting deficit in the international account. At the end of August only \$400 million of the \$3,750 million dollar credit remained. Consequently, the United States agreed on August 20, 1947, to a temporary suspension of convertibility which still obtains in early 1949.

Last, both countries agreed to adopt commercial policies designed to encourage multilateral trade by relaxing trade barriers and eliminating trade discriminations. This phase of the agreement and the preceding one concerning a free exchange market were of large significance. The two greatest trading nations were assuming leadership toward a maximum degree of international economic cooperation, and were attempting to lift the maze of obstructions to multilateral trade which developed during the 1930's.

The International Bank. In contrast with the two preceding steps which were emergency measures, the International Bank for Reconstruction and Development had its origin in plans that took form long before the end of the Second World War. Proposals for the Bank were agreed on at the International Monetary and Financial Conference at Bretton Woods, New Hampshire, in July, 1944. The legal existence of the Bank began on December 27, 1945, when agreements were signed by governments with about 80 per cent of total subscriptions of the 44 nations

¹ Canada also loaned 1,250 million Canadian dollars to the United Kingdom in 1946.

officially represented at Bretton Woods. It did not begin operations, however, until midyear 1946, and the first loan was made in May, 1947. The head office was established in Washington, D.C.

The principal purpose of the Bank was to finance postwar reconstruction and development both by its own loans and by guarantees of, or participations in, private loans. This was to be done in such manner as to revive private foreign investment and to promote a balanced growth of international trade.

Subscriptions to the Bank and voting power were based roughly on financial resources, although bargaining of course played a part. On June 30, 1948, total subscriptions were \$8,286 million, of which the share of the United States was \$3,175 million, or 38.3 per cent; voting power of the United States was somewhat less, 33.9 per cent. Only 20 per cent of subscriptions were called. The remainder may be called only if needed to meet losses. While the subscriptions fix the limits of liability, they do not limit the loans to particular countries. Total subscriptions also have a special significance in that the aggregate of the Bank's loans and guarantees may not exceed its subscribed capital, surplus, and reserves. It is evident that the bulk of the Bank's funds must be derived from the sale of obligations, since only 20 per cent of subscribed capital is available to make loans.

Some of the principles that govern the lending operations of the Bank are prescribed by its Articles of Agreement; other policies have been adopted by the Governors of the Bank. They may be summarized as follows:

1. Loans must be for reconstruction and development; they may not be made for relief or for political purposes.
2. There must be a reasonable prospect of repayment of loans.
3. A loan will not be made if the borrower is able under reasonable terms to obtain the funds elsewhere.
4. While the Bank will not make imprudent loans, it is prepared to accept a reasonable degree of risk in order to assist in establishing conditions under which private capital will again play its part.
5. Priority will be given to credits that promise the greatest possible increase in world production in the shortest possible time.
6. Credit will not be extended when the borrowing nation is able to finance the project.
7. The Bank plans to keep in close touch with borrowers to see that credits are put to their intended use.
8. The rate of interest on loans must be such as to cover costs and provide for appropriate reserves.
9. In European loans the program of the Bank will be harmonized

with the European Recovery Program (ERP). In view of the insufficiency of ERP funds, the Bank intends to assist by loans for additions to productive capacity.

10. The Bank contemplates loans to the underdeveloped countries of Latin America, Asia, Africa, and the Middle East in so far as assistance promises to expand production and in so far as its resources permit. When conditions are such that the productive purposes and repayment of these loans are uncertain, the credit will be conditioned on measures to bring about financial and monetary stability.¹

The first loan granted by the Bank was to France in May, 1947 (\$250 million); the second was to the Netherlands in August, 1947 (\$195 million). Since that time smaller loans have been extended in a number of countries. The total of loans disbursed by midyear 1948 was \$470 million.

In order to finance lending operations the Bank made its first public offering of bonds (\$250 million) in the United States on July 15, 1947. Its second borrowing operation was in Switzerland on June 1, 1948—17 million francs (about \$4 million).²

The Bank is thus a venture in international financial cooperation. Assuming wise management, it has promising potentialities in the years that lie ahead to assist in the economic reconstruction and development of the world.

The European Recovery Program (ERP). With the UNNRA aid program coming to an end in 1946, the plight of Western Europe became increasingly apparent. The deficit of its international current account was nearly \$6 billion in 1946 and nearly \$8 billion in 1947. After long negotiations and debate in the United States and Europe, the Economic Cooperation Act was approved on April 3, 1948. Meanwhile, the United States met the most urgent needs by an interim aid program. The Act authorized financial assistance by the United States until June 30, 1952, and made \$5 billion available for that purpose during the following 12 months. The Economic Cooperation Administration (ECA) was established to administer the program. Shortly afterward the 16 participating countries of Europe and Western Germany signed an agreement establishing the Organization for European Economic Cooperation (OEEC) to work with ECA in giving effect to the program.

The principal aim of the European Recovery Program is to assist Western Europe to become self-sustaining and to make the necessary

¹ *Second Annual Report of the International Bank for Reconstruction and Development, 1946-1947*, pp. 15-17; *Third Annual Report, 1947-1948*, pp. 7-20.

² *Ibid.* *Third Annual Report, 1947-1948*, p. 27.

adjustments to postwar conditions. This involves far more than merely providing needed food, raw materials, and equipment. Financial and monetary stability must be achieved; production must be increased; and international trade must be enlarged by the removal of existing barriers. Perhaps most difficult of all, the huge deficit in the international balance of payments must be eliminated. For the most part this can be achieved only by increasing exports and reducing imports of goods, especially to and from the Western Hemisphere. No longer can net receipts from foreign investments, shipping, travel, and other invisible items be depended on as before the war to pay for a merchandise import surplus. Net receipts from these items declined from about \$2 billion in 1938 to \$600 million in 1947.¹ This implies a new pattern of production in which export industries must be expanded and made more efficient, and in which a greater share of current imports must be produced at home. Unless these basic adjustments are made, the ERP will fall far short of its goal and will be reduced to little more than a measure of temporary relief.

By mid-December, 1948, approved allotments to countries participating in ERP and to China amounted to \$4,058 million. More than three-fourths of the shipments thus far have been from the United States and Canada.²

The International Monetary Fund. Like the International Bank, the International Monetary Fund grew out of the Bretton Woods Conference in July, 1944, officially attended by 44 nations. It also came into existence at the same time—December 27, 1945—when the Articles of Agreement were signed by governments representing about 80 per cent of total subscriptions.

Purposes. The broad objective of the Fund is to promote the free movement of goods and capital among the nations of the world as a means of developing the highest possible standards of living. Since its operations are largely restricted to the monetary field, the more specific goals are international monetary cooperation, stable and orderly foreign exchange rates, the avoidance of competitive exchange depreciation, the removal of exchange restrictions, and the establishment of free exchange markets.

Capital Subscriptions (Quotas). The general conception of the Fund is that of an international pool of gold and moneys of the member nations

¹ United Nations, *A Survey of the Economic Situation and Prospects of Europe* (Geneva, 1948), p. 54.

² Economic Cooperation Administration, *Fifth Report to Public Advisory Board*; *The New York Times*, December 20, 1948, p. 37.

as the source of foreign exchange advances to members suffering temporary deficits in their international accounts. To this end each member is assigned a quota to be paid partly in gold and partly in its own money.¹ As of April 30, 1948, total capital subscriptions (quotas) amounted to \$7,976 million of which the share of the United States was \$2,750 million, or 34.5 per cent. The quota of the United Kingdom was next in size, \$1,300 million, so that over half of the total subscription was made by these two countries.

Borrowing from the Fund. A member is entitled to sell its money to the Fund for foreign money needed to meet a current international deficit, but only within certain limits. Such purchases may not cause the Fund's holdings of a member's money to rise by more than 25 per cent of its quota during the preceding 12 months, or to exceed 200 per cent of its quota. But when conditions justify, these limits may be waived by the Fund. Certain other provisions are designed to discourage excessive use of the Fund by particular countries. One of these is a penalty charge which rises with the amount of a member's money held in excess of its quota and with the period over which it is held. Another is that a member with adequate monetary reserves must repurchase annually specified amounts of the Fund's excess holdings of its money with gold or acceptable foreign moneys.

Administration. The governing body of the Fund is a Board of Governors consisting of one representative (with one alternate) from each member nation. Management is in the hands of at least twelve executive directors, five of whom are appointed by the members having the largest subscriptions; the others are elected by the Board of Governors from the remaining nations. The chief of the operating staff is the managing director.² The principal office of the Fund was established in Washington, D.C.

Operations. One of the initial steps of the Fund was the establishment of the official par of each member's money in terms of gold or United States dollars. This was done in December, 1946, for the majority of members, but determination of par values was postponed in a number of cases because of monetary instability. As of July 15, 1948, par values had been established for all but eight member nations.

¹ The gold portion required is 25 per cent of a nation's quota or 10 per cent of its net official gold and dollar holdings, whichever is smaller. The Fund accepts non-negotiable, non-interest-bearing demand securities in lieu of money not needed for operations.

² In 1948 the Executive Board was composed of the managing director and 14 executive directors.

Each country may in accordance with the Agreement change the par value of its money by as much as 10 per cent of the initial par without approval of the Fund. Moreover, the Fund has adopted the policy of promoting *stability* rather than *rigidity* of exchange rates. The concept of stability recognizes that orderly adjustment of a member's exchange rate should be made when it no longer harmonizes with basic conditions.¹ One of the first adjustments of this kind was made on June 17, 1949, when the Fund approved a new par value for the Mexican peso of 8.65 per United States dollar to replace the initial parity of 4.855 per dollar. In approving the new rate the Fund expressed the belief that it would assist Mexico to restore and maintain a strong balance of payments.²

The first foreign exchange transaction of the Fund took place on May 8, 1947, when it sold \$25 million to France for 2,978 million francs. By the end of April, 1948, aggregate transactions were \$606 million on behalf of 10 member nations. With the exception of one small transaction, United States dollars were sold for other moneys to relieve the world dollar shortage.

Problems and Policies. The most difficult immediate problem of the Fund is the dollar shortage outside the United States. From the beginning of 1946 to the end of the first half of 1948, exports of goods and services from the United States exceeded imports by nearly \$23 billion.³ The deficit was magnified by the marked rise in prices the world over. It was financed largely by grants and loans, but also by substantial liquidation of gold and dollar assets by other countries.

A closely related problem is the maze of existing foreign exchange restrictions. The United States is the only major country that has not elected to impose exchange restrictions during the transitional period. England's premature attempt to maintain the convertibility of sterling for current transactions ended as already described, in August, 1947.

Another problem facing the Fund is the internal weaknesses of most countries. Unstable governments with unbalanced budgets do not provide an environment in which sound monetary systems can be developed. This matter is for the most part beyond the power of the Fund to correct, although it can assist in some cases by loans and in others by wise advice.

An important matter of policy exists in connection with the proper use of the Fund's resources. Should they be strategically extended to assist

¹ *Annual Report of the International Monetary Fund*, April 30, 1948, p. 21.

² *The Commercial and Financial Chronicle*, June 30, 1949, p. 23.

³ U.S. Department of Commerce, *Survey of Current Business*, September, 1948, p. 7; November, 1948, p. 23.

in world reconstruction, or should they be conserved for use during the posttransitional period? On these questions the Fund has taken a middle position. It has assumed certain risks in sales of dollars in order to make a contribution to world recovery and exchange stability. But it has attempted to minimize risks by advising members with regard to necessary adjustments of internal policies.

During 1946 and the first half of 1947, the practice of selling gold at premium prices in inconvertible moneys became prevalent. Prices as high as \$50 to \$60 per fine ounce were often quoted compared with the official price of \$35. The Fund took a strong position against such transactions in July, 1947, on the grounds that they would undermine official exchange relations and divert gold to private hoards. Members agreed to discontinue premium sales of gold, but the practice was not entirely eliminated in 1948, owing to difficulties of enforcing regulations.¹

A final major policy of the Fund is that of close collaboration with members and with other international organizations. In addition to regular consultation, missions have been dispatched to a number of countries to study conditions on the spot. Basic information is collected and made available not only to members but also to the public by a monthly bulletin, *International Financial Statistics*, and by press releases. Close relations are maintained with the International Bank, the United Nations, and other international organizations having related responsibilities. A particularly close relation exists with the International Trade Organization (ITO) since both agencies are concerned with the international transactions of nations in the broadest sense.

Prospects of the Fund. The Fund represents a new venture in international monetary cooperation far beyond anything ever attempted in the past. The general conception is a constructive one with great potentialities as one part of a broad program of cooperation. While the Fund is no panacea capable alone of creating a peaceful and prosperous world, it nevertheless holds real promise of contributing materially to this end. However, it is not primarily a recovery measure. Rather, it represents a refined instrument which can begin to make its principal contribution only after substantial recovery has been attained.

Once again the point must be emphasized that basic internal and external adjustments to postwar conditions are essential to a prosperous and stable world economy. This goal can be realized only by coordinated progress on all fronts. Stable peacetime political conditions are of first importance in order to create an environment of domestic confidence and international cooperation. In addition to grants-in-aid by ECA,

¹ *Annual Report of the International Monetary Fund*, April 30, 1948, pp. 39-44.

credits must be extended during the transitional period by ECA, the Bank and the Fund. But such assistance can have a lasting influence only if it is used to develop productivity and a balanced pattern of international trade.

Somewhat more specifically, maximum trade benefits can be realized only by the removal of quotas, exchange restrictions, tariffs, and other trade barriers. This would permit the establishment of economic trade channels on a multilateral basis, rather than on a restricted bilateral basis. Europe in particular must rebuild her economy on a pattern of more exports in relation to imports. As a corollary, the United States must adapt its policies to receive more imports. This does not mean, however, that imports of the United States from Europe must exceed exports to Europe. Instead, a more natural outcome would be the reemergence in some form of the long-established triangle between the United States, Europe, and Southeast Asia. The United States sold more to Europe than she bought, but bought more from Asia than she sold. Europe, on the other hand, held an opposite relationship with Asia. Consequently, Southeast Asia provided Europe with dollars to help pay for the import surplus with the United States.

On the assumptions of a favorable environment of this nature and of wise administration, the Fund gives promise of developing a new era of financial cooperation. It is an agreeable compromise between the rigidities of the gold standard and the excessive exchange fluctuations associated with independent standards. Domestic policies are not made subservient to rigid exchange rates, but they are expected to avoid exchange depreciation and to promote orderly rates. That is, if basic conditions change despite reasonable domestic adjustments, the official par value of a money may be changed with approval of the Fund.

Review Questions

1. State the international economic philosophy that prompted the decisions of leading nations to return to the gold standard in the mid-1920's.
2. Contrast the international economic philosophy of the 1930's with that of the 1920's.
3. Explain the main purpose and the operations of the Exchange Stabilization Fund of the United States.
4. Distinguish between a gold-exchange and a foreign exchange monetary standard.
5. Summarize the main features of the over-all types of foreign exchange control that developed during the 1930's and have persisted since the war.
6. What policies have guided the Export-Import Bank in its lending operations during the postwar period? How important have its operations been?
7. Summarize the provisions of the Anglo-American Financial Agreement ratified in July, 1946.

8. Outline the purpose and organizational features of the International Bank for Reconstruction and Development. What share does the United States have in (a) subscriptions and (b) voting power?

9. State the principles that govern the lending operations of the International Bank.

10. What were the main features of the European Recovery Program of 1948?

11. Summarize the purposes and organizational features of the International Monetary Fund.

12. What are the conditions to borrowing from the Fund?

13. Describe the early operations of the Fund. What operations has the Fund carried on since 1948?

14. Outline the major problems which face the Fund.

15. State the policies which guide the operations of the Fund.

Advanced Questions and Problems

1. "When exchange rates are in equilibrium one country can gain advantage from reducing the value of its money in terms of foreign moneys (exchange depreciation) only at the expense of others, and its advantage is almost certain to be short-lived." Discuss the issues raised by this statement.

2. "The system of government monopoly of foreign exchange, exchange rationing, limitation of imports, and bilateral trade is shortsighted except as a temporary emergency measure." Do you agree with this statement? Explain.

3. "The provisions of the Anglo-American Financial Agreement relating to international trade and foreign exchange policies were of great significance." Develop this statement.

4. "The principal aim of the European Recovery Program is to assist Western Europe to become self-sustaining and to make the necessary adjustments to post-war conditions." Point out what this aim involves.

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CHAPTER XXVIII

THE RATE OF INTEREST

The rate of interest is a highly significant price, second in scope only to wage rates. It influences the supply of funds to finance business undertakings, and at the same time rations these funds among the multitude of competing uses for them. Being an element of cost, it also influences the level of production. That is, a low rate encourages production and a high rate discourages it. For the same reason, the interest rate is a factor which always has a place in both the short-term and long-term financial plans of every business. This chapter, which discusses the forces governing the rate of interest, is the first of a series dealing with the money market.

GENERAL CONSIDERATIONS

We are concerned at this point with the market rate of interest which may be defined as the price that borrowers currently pay lenders for the use of money. This price is usually expressed as a certain per cent per annum of the principal sum. That is, if Black borrows \$100 from White and agrees to repay the principal plus a \$4 premium at the end of 1 year, the rate of interest is 4 per cent.

For the sake of simplification it is assumed in this chapter that there is only one market rate of interest, whereas in fact there are many inter-related rates. More specifically, the rate of which we shall speak may be visualized as a carefully weighted average rate, representative of the entire rate structure.

The analytical method employed is the familiar one of the interaction of a demand schedule and a supply schedule which results in the emergence of a market rate. Thus, price determination follows the same procedure as in competitive commodity markets, although special consideration must be given to the meaning of the schedules governing the interest rate. In order to explain dynamic changes, these schedules must of course apply to short periods of time.

SUPPLY OF LOAN MONEY

The aggregate supply schedule of loan money shows the amounts which lenders will offer to loan at each of a series of interest rates. Underlying

this supply are three elements: (1) the flow of current saving, (2) changes in the stock of money, and (3) changes in the demand for money to hold in relation to expected money expenditures (K). The flow from these three elements finds its outlets partly in offerings to the loan money market and partly by investment in physical property—either by direct purchase or the buying of equity securities. Thus, the supply schedule of loan money is part of a larger supply of current money capital, and is inextricably bound up with it. *Explicit* interest is expected on obligations entering the loan market, while *implicit* interest is expected on funds invested in physical assets or equities. These two divisions are continuously in competition since they represent alternatives open to the investor who is, other things being equal, always seeking the highest yield. This competition tends to keep the explicit and implicit rates in a balanced relation. There is no satisfactory way of deriving the structure of implicit rates directly from the income of physical property and equities. But in view of the equalizing influence of competition, it may reasonably be assumed that they are the same as the explicit rates under comparable conditions, including risk.

1. The flow of current saving is more largely dependent on the level of national income than on any other one factor. For example, the amount of personal saving plus undistributed corporate profits in the prosperous year 1929 was \$6,320 million. At the bottom of the depression in 1933, the corresponding amount was —\$3,609 million; savings were negative. The amounts of national income in these two years were \$87.4 billion and \$39.6, respectively.¹

The amount of saving is also influenced by the expected rate of interest. Given a certain income, it used to be assumed that the amount of saving rose and fell directly with the rate of interest; in other words, that the dominant motive for saving was the enlargement of future income. However, this assumption has been frequently challenged since the First World War by those who believe that, other things remaining the same, more will be saved as the interest rate falls. Thus, they believe that the dominant motive for saving is the accumulation of either a fixed principal sum or of a sum capable of providing a definite future money income. Since statistical proof is lacking, the relation between saving and the rate of interest remains in the realm of opinion, but few would deny that some relationship exists.

For the present purpose the flow of current saving may well be divided into two parts, *viz.*, the savings of business enterprises in the form of retained net profit and the savings of individuals. Very little of the first

¹ U.S. Department of Commerce, *Survey of Current Business*, July, 1948, p. 16.

division is offered as loan money, since the bulk of it is invested directly in capital equipment or inventory. However, the size of business saving varies not only with net profits but also with the decisions in regard to the proportion of net profits that will be paid out as dividends or entrepreneurial withdrawals. Liberal dividend policies contribute to personal incomes, and hence to the amount of saving by individuals.

A large part of the second division—savings of individuals—usually finds its way into the loan money market irrespective of the prevailing rate if good risks are available. Most of it follows an indirect route through savings banks, commercial banks, life insurance companies, and other financial intermediaries. Some of it is loaned directly. The remainder of individual savings is invested in physical property or equities. The proportion of individual savings so invested varies greatly, depending on economic conditions and prospects. When a spirit of optimism prevails in regard to the prospect for business profits and the prices of stocks, commodities, and real estate, a larger part of individual savings is directed into these channels. The late 1920's provide a good illustration. But when a spirit of pessimism is abroad, as in the 1930's, the bulk of the shrunken amount of individual savings is either offered in the loan market or is held as idle money.

All this leads to the conclusion that an increase in the flow of current saving tends to lower the interest rate and that a decrease in saving tends to raise it.

2. The stock of money changes under the influence of many inter-related factors which have already been discussed in Chapter XX. It need therefore only be mentioned here that some of these factors have their origin on the supply side and others grow out of the demand for money capital. Changes in the gold stock and the volume of central bank credit are the most important supply forces. But the actual changes in the stock of payment money take place mainly in response to the credit requirements of individuals, business firms, and governments. These demands tend to be larger, other things being equal, when interest rates are low and to be smaller when interest rates are high. Yet in fact the stock of money has typically increased when interest rates were rising, and has decreased when interest rates were falling. This apparent contradiction is explained by the fact that the demand for credit is in the ascendancy during business expansion, so that rates rise despite an increase in the money stock; during business decline the demand for credit contracts sharply, so that rates fall despite a decrease in the money stock.

In conclusion, it may be stated that an increase in the stock of money

tends to cause a lower interest rate in the market and a decrease in the money stock tends to bring about a higher rate.

3. Changes in the demand for money to hold in relation to expected money expenditures were discussed fully in Chapter XXI, and there is no need for detailed repetition. It will be recalled that the dominant factor causing short-term changes in this demand is the state of expectations with regard to business profits, consumer income, and prices of commodities, real estate, and stocks. When optimistic expectations prevail, the relative demand for money declines; when pessimistic expectations prevail, the relative demand for money increases. It will also be recalled that the schedule of the demand for money is related to the interest rate. When the rate is low, the opportunity cost of holding money instead of interest-yielding obligations is small, and at the same time the price of bonds is vulnerable to a decline.

But whatever the factors governing the demand for money to hold, it may be concluded that an increase in this demand makes for a higher interest rate, and a decrease in demand makes for a lower rate.

It is impossible to discuss at this point certain strategic supply factors that play a dominant part in the actual determination of money rates, such as (1) the policies of the monetary authorities as expressed in the central bank discount rate, open-market operations, and legal reserve requirements of member (commercial) banks; (2) changes in the gold stock; and (3) changes in currency circulation. These more concrete aspects of the supply of loan money are considered in Chapter XXIX.

DEMAND FOR LOAN MONEY

The aggregate demand schedule of loan money indicates the amounts that borrowers will take at each of a series of interest rates. While the shape of this schedule may vary with circumstances, the amount generally rises or falls, respectively, as the rate falls or rises. The amounts are more responsive to changes in the rate in those fields in which interest represents a relatively important element of cost, *e.g.*, residential construction. In the case of Federal borrowing during wartime, or for other national emergencies, the amount demanded usually does not depend on the rate at all but is determined only by the need for funds.

Like the supply schedule for loan money, the demand schedule is part of a larger demand for money capital which includes demands that are not brought to bear directly in the loan market. As business enterprises provide a large part of their needs for additional money capital by retaining net profits in the business, so consumers meet a large part of their needs to finance houses and other durable goods directly from current

saving. While these demands of business and consumers do not constitute a demand for loan money, they are intimately associated with it. Both groups have constantly before them the various alternatives in raising money capital, and they make their plans accordingly. Businesses may use their own savings (undistributed profits), sell stock, or borrow; consumers may utilize savings or borrow.

Changes in the demand for money to hold in relation to money expenditures were discussed in the preceding section as an element affecting the supply schedule of loan money. But this element also independently affects the demand schedule. Borrowers require less money to finance a given amount of money expenditures if their relative demand for money declines (velocity of money rises). Hence, an increase in liquidity requirements raises the level of the demand schedule and tends to raise the rate of interest, while a decrease in liquidity requirements has the opposite effect. Thus, an increase in liquidity requirements tends to have a double effect of raising interest rates on the sides of both demand and supply, and a decrease in these requirements tends to have a double effect of lowering interest rates.

The level (as opposed to shape) of the demand schedule depends principally on the expected net income from the investment or current operations financed by the borrowed money. That is, it rises and falls directly with income prospects. If construction of a durable capital good is contemplated, a series of prospective net returns over the life of the good is in mind. But if the borrowed money is to be used for the purpose of inventory or for other current operations, a single turnover period is usually in mind.

DETERMINATION OF THE INTEREST RATE

Given the supply and demand schedules for loan money, the interest rate emerges as a consequence of their interaction, similar to that of commodity price determination. The rate must be one which equates the amount of loan capital offered by lenders and the amount demanded by borrowers. The general shape of the demand schedule is quite certain: the amounts of loan money demanded decline as the rate rises. Very little is known about the general shape of the supply schedule of loan money, especially regarding the loan offers of individuals. It seems probable that individuals will offer to loan more at a high rate than at a low rate; in other words, that the motive to enlarge future interest income is dominant over the motive to build an estate of a certain amount and no more, or to provide an interest income of a fixed amount, and no more. But this is an observation which cannot be proved.

As for banks and other lending institutions, the rate level appears to have very little influence. After provision for liquidity, they usually offer to lend all the cash resources in their possession at whatever rate prevails. Some gross income, however small, is better than none at all. Putting this all together, the opinion is ventured that the shape of the supply schedule is such that lenders typically will offer to loan somewhat more as the rate rises.

Under depression conditions, both the conditions of supply and demand for loan money may be inelastic within a considerable range of rates. That is, borrowers may not wish to borrow very much irrespective of the rate because of the poor prospect for net income; and lenders may refrain from lending because of excessive risks, combined with their own enlarged demand for liquidity. But under prosperity conditions when profit and income prospects are bright, when risks of lending seem small, and when the relative demand for money is low, both the conditions of demand and supply are likely to be elastic within the middle range of rates. Borrowers will demand considerably more credit as the rate declines, and lenders will lend freely in the same range of rates. In short, in this dynamic world both curves may assume an infinite variety of shapes. But whatever be the shape of the schedules of demand and supply, a market rate emerges at which *realized* demand equals *realized* supply.

COMPARISON WITH KEYNES'S INTEREST-RATE THEORY

The acceptance by many of Keynes's theory of the interest rate requires that the relation between it and the one presented here be examined. Since his theory was summarized in Chapter XXV, there is no need for repetition, except to recall that in his system the money rate emerges from the interaction between the schedule of liquidity-preference and the stock of money. The market rate is viewed as a price to induce people to part with money and to hold instead bonds and other interest-bearing obligations; it is the rate at which people are just willing to hold the existing stock of money. A little reflection reveals that there is no conflict between these two explanations. The rate which emerges from the interaction of the supply and demand schedules for loan money is the same rate that results from the interaction of the schedule of liquidity-preference and the stock of money. Liquidity-preference, it will be recalled, exerts its influence through both the supply and demand schedules of loan money.

There are distinct advantages, however, in explaining the rate of interest in terms of the market for loan money as compared with the explana-

tion of Lord Keynes. First, the loan-money theory utilizes the device of the supply and demand schedule which is already familiar in the treatment of market price of commodities. Thus, employing a more familiar method and being less recondite, it is more readily understandable. A shift to unfamiliar concepts in dealing with the interest rate can be justified only by the achievement of a more accurate and satisfying explanation. For reasons that follow it is not believed that Lord Keynes achieved this goal.

Second, the loan-money theory is more balanced in its emphasis. It recognizes that in interest-rate determination there is as much reason to give emphasis to the quantity of bonds and other interest-bearing obligations as there is to give consideration to the stock of money. In other words, it recognizes that the market rate of interest is one at which there is a home for all interest-bearing obligations as well as for the stock of money. To go a step further, the holding of interest-bearing debts is *not the only alternative* to holding money. A more important alternative is the ownership of equity assets—shares of stock, commodities, and real estate. Thus, the schedule of liquidity-preference shifts upward or downward, respectively, as the general prospect for the price of equity assets falls or rises. The balance between money and debts cannot be struck until the balance between money and all other (nondebt) assets is struck as well. It is better, therefore, to think of the interest rate as an integral part of the whole price structure, and as being determined by supply and demand like other prices, rather than to set it on a pedestal by itself.

Last, the loan-money theory presents a more complete and rounded explanation than that of Lord Keynes. It provides a place for the subjective cost of saving (not consuming) as well as for the subjective cost of parting with liquidity (money). This place, it will be recalled, is in the supply schedule of loan money. It recognizes the possibility that the flow of saving may, especially in the long-run, be inadequate to provide a proper amount of capital formation, or even to prevent net capital formation, if the rate of interest sinks too low.

Thus, while there is no basic conflict between the loan-money and the Keynesian theories of interest-rate determination, it is believed that the former affords a more understandable, better balanced, and more complete explanation.

THE CLASSICAL THEORY OF INTEREST

During the period from Adam Smith's *The Wealth of Nations* (1776) to the First World War, the prevailing explanation of the interest rate

was that of a price equating the supply of savings with the demand for capital. Some writers removed money from the setting and spoke only in terms of *real* savings and *real* investment. Others couched the analysis in monetary terms but made plain that this was for convenience only, and that basically they were concerned with the *real* situation rather than with its monetary counterpart.

The current supply of savings arose by abstaining from consumption. Interest was the price to induce people to forgo current consumption, the price representing the premium on present consumption over future consumption. It served to release labor and other productive factors from the making of consumer goods, so that they might be utilized in the production of producers' capital. The demand for capital came from business firms which foresaw a prospect of profit from its use, and to a lesser extent from consumers of durable goods.

The interaction of the supply schedule of savings and the demand schedule for investment resulted in the interest rate. If savings were less than investment, the rate rose thereby encouraging saving and curbing investment. If savings were greater than investment, the rate fell with the result that savings were reduced and investment was promoted. Also, from the demand side, the interest rate had the function of directing capital into the more promising fields and of denying it to less promising projects.

When the interest rate was explained in this traditional manner, a chasm that was hard to bridge existed between the real rate and the current money rate of interest. This chasm disturbed older economists who made various bridgebuilding attempts, but without any very satisfying results. Little more than a mention of these attempts can be undertaken here. In general, they took the form of designating the real rate as a *normal*, or *equilibrium*, or *natural* rate in some sense of the term, as opposed to the current money rate which was regarded as short-term and superficial. It was usually assumed that the current money rate tended to gravitate toward the real rate, just as the market price of a commodity tended to return to its normal price.

The explanation of the interest rate presented in this chapter—the supply and demand for loan money—attempts to knit together in so far as possible the former *real* and *market* approaches. The old supply schedule of savings is utilized in monetary terms, although the shape of it in relation to the rate of interest is questioned, and the part of savings invested directly in physical property and equity securities is represented indirectly. But in addition, the supply schedule for loan money includes changes in the money stock and changes in the relative demand for money

to hold (liquidity-preference). Likewise, the old demand schedule for capital is utilized in monetary terms, but the demands for capital which are met by direct saving of business firms and individuals without giving rise to borrowing are represented indirectly. All potential demands for loan money, whether their source be from producers, consumers, or governments, are included in the schedule.

In a money economy the money rate of interest is the one that consciously enters into decisions. There is no explicit market price (rate) that equates the supply of real savings with the demand for real capital. There is only the money rate that equates the supply of loan money with the demand for loan money. The realized market rate which emerges from the interaction of these two schedules is the most effective one in the economy. It is the one in the minds of business men when they consider future interest costs in their expense budgets, whether short-term or long-term. It is the one in the minds of officers of banks and other financial institutions, and of investors in general, when they consider what is likely to happen to high-grade bond prices. Finally, it is the one which is in the minds of those savers who vary their savings plans in greater or less degree as the interest rate changes.

But while the money rate of interest is the more active, there is also a fundamental goods rate of interest continuously influencing economic developments. We are not often aware of its presence since there is no explicit measure of the goods rate revealed in market prices. Nevertheless, like the air, it is a reality even though it cannot be seen. The goods rate may best be visualized in terms of time preference. People value things in the present more highly than in the future. This attitude is partly rational and partly irrational. It is rational because present enjoyment is far more certain and tangible than future enjoyment. The future is menaced by death, illness, changes in family and social relationships, war, and an endless list of other hazards to future satisfactions. But the attitude is partly irrational because we are inclined to satisfy present wants at the expense of more important future wants. Most of us are more like the grasshopper than the ant.

The goods rate of interest then represents the premium that people place on present consumers' goods over future consumers' goods. A bushel of first-quality apples is valued more highly today than an identical bushel deliverable one year from today. If 100 bushels of present apples have the same value as 106 bushels of the same quality deliverable one year hence, the apple rate of interest is 6 per cent. A similar time preference discount applies to all consumers' goods deliverable in the future instead of today. The rate that is effective over the whole field

tends to be the marginal one—the one required to call forth the marginal increments of present and future goods.

These relationships are naturally reflected in the market prices of present goods as compared with future goods. Thus, if first-quality apples are selling for \$4 per bushel, the price of an identical bushel deliverable a year from today would be $\$3.77 (4.00)/(1.06)$. This assumes all factors bearing on the price, apart from the interest rate, to be constant. All futures markets for commodities reflect this influence. Another illustration may be drawn from the market prices of perishable consumers' goods as compared with durable consumers' goods. Consider the case of a pair of shoes that will last 1 year and a leather traveling bag that will last 10 years, and assume that the value of the shoes is the same as the current year's service from the bag. Is the present value of the bag 10 times as much as that of the shoes, or is it something less than that? It tends in fact to be the sum of the discounted values of the series of 10 increments of service, discounted, *i.e.*, at the appropriate rate of interest. In other words, the present value of the bag is materially less than the value placed on the current increment of service multiplied by 10, because it mainly embodies *future* services—the current increment being the most valuable and the tenth increment being the least valuable.

All this raises the question of the relationship between the money rate of interest and the goods rate of interest. In a money economy the money rate, whatever it is, has such a pervasive influence that price relationships and the goods rates of interest tend to adjust themselves to its level. Assume, for instance, that the money rate of interest is artificially depressed by government and central bank policies. This tends to raise the money price of future goods in relation to present goods and therefore to lower the goods rate of interest. At the same time the low money rate coupled with the relatively high price of future goods stimulates production of the latter, *i.e.*, investment. Increased investment, however, adds to the supply of future goods with a depressing influence on their price relative to that of present goods, and it also tends to raise money rates from the demand side. If this occurs, the goods rate then adjusts itself upward to the new set of conditions.

But what happens, it may well be asked, if the money rate is pegged at an artificially low rate by government policy and it is not permitted to rise under the influence of increased demand for money capital? When unemployed resources exist at the time, the response is in terms of both greater output and higher commodity prices. But when practical productive capacity is reached, the response tends to appear in the shape of higher prices. The similarity of these conditions to the actual situation

in 1947 and 1948 will readily be recognized. If the expansion of bank reserves and of bank credit that occurs as an incident to the low rate is sufficiently large, a rapid rise of the price level may be generated. As a further consequence, current money savings from the national income may disappear and may even become negative. In the latter case, the nation would be consuming its capital resources and thereby undermining its productivity. This possibility calls attention to the fact that the money rate of interest cannot be artificially held well below the natural goods rate without the danger of paying the inflationary piper. Conversely, it implies that the money rate cannot be held well above the natural goods rate without paying the price of unemployment and an unduly low standard of living.

Review Questions

1. Define the market rate of interest.
2. What is meant by the aggregate supply schedule of loan money, and what three elements underlie this supply?
3. Distinguish between explicit and implicit interest, and show why the two rates tend to be the same under comparable conditions, including risk.
4. Discuss the factors which govern the flow of current saving.
5. How does the flow of current saving influence the interest rate?
6. Explain how changes in the stock of money affect the interest rate.
7. How does the demand for money to hold influence the rate of interest?
8. What is meant by the aggregate demand schedule for loan money?
9. Discuss the factors underlying the aggregate demand schedule for loan money.
10. Explain how the market rate of interest is determined according to the supply and demand theory.
11. Discuss the probable shapes of the demand and supply schedules of loan money.
12. Contrast conditions of supply and demand for loan money during periods of depression with periods of prosperity.
13. Compare the interest rate theory of J. M. Keynes with the supply and demand theory. Which one in your opinion provides the more satisfactory explanation? Support your view.
14. Summarize the classical theory of interest rate determination.
15. "In a money economy the money rate of interest is the one that consciously enters into decisions." Develop this statement.
16. Define and discuss the goods rate of interest.
17. Explain the relationship between the money rate of interest and the goods rate of interest.

Advanced Questions and Problems

1. "The rate of interest is a highly significant price, second in scope only to wage rates." Support this statement.
2. "Changes in the stock of payment money take place mainly in response to credit demands which tend to be larger, other things being equal, when the interest

rate is low. Yet in fact, the stock of payment money has typically increased when interest rates were rising." Explain this apparent contradiction.

3. "The demand schedule for loan money is part of a larger demand for money capital which includes demands that are not brought to bear directly in the loan market." Explain this statement.

4. Discuss the probable results in the economy of holding the money rate of interest at an artificially low level as a permanent government policy.

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CHAPTER XXIX

ANALYSIS OF THE MONEY MARKET AND FORCES GOVERNING THE RATE OF INTEREST

While the general approach to the rate of interest in the preceding chapter is of basic importance, the analysis must be carried a step further to the forces that underlie the supply and demand for loan money. Since the commercial banks are the principal lenders of short-term funds, it is necessary to inquire into the sources of their reserve money and the ways in which it is employed. This leads inevitably to the activities of the Federal Reserve banks which occupy a strategic position in the money market. It also leads to a consideration of changes in the gold stock, currency in circulation, and several other related items of less importance.

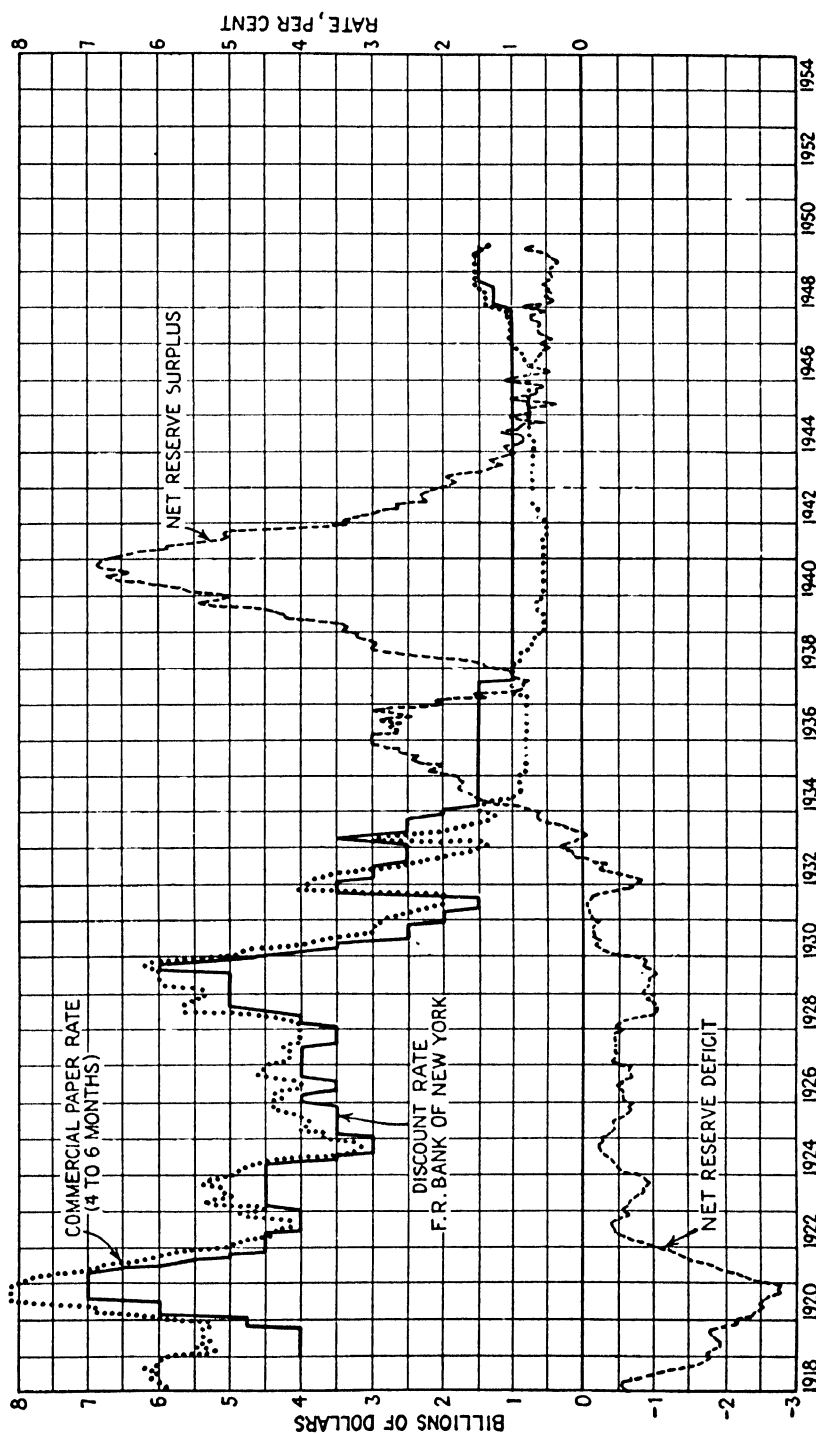
THE IMMEDIATE FACTORS

Certain forces stand more nearly at the surface of the problem than others and may well be termed "immediate" as opposed to "underlying" factors. The former may be summarized under the headings (1) reserve position of commercial banks and (2) discount rates of the Federal Reserve banks. These will be discussed in turn.

Reserve Position of Commercial Banks. The most important single key to the relation between supply and demand for loan money is the reserve position of commercial banks. They are the principal lending institutions in the short-term market and are also large lenders of long-term funds. Abundant liquid reserves in the banks reflect a situation in which the supply of loan money is large in relation to demand at existing rates. Hence, large excess reserves are associated with low rates. On the other hand, a scarcity of bank reserves indicates that demand for loan money is large in relation to supply at existing rates. Hence, it is associated with high rates. Thus, the primary reserve position of the commercial banks is a *net resultant* of a number of interacting forces of both supply and demand.

In order to bring out the relation between bank reserves and the money rate of interest, reference is made to Chart 14. The rate on open-market commercial paper is used as an index of short-term rates, since it sensitively reflects conditions in a competitive market. The reserve

CHART 14. INTEREST RATES AND THE RESERVE POSITION OF COMMERCIAL
(FEDERAL RESERVE MEMBER) BANKS, 1918-1949



Source: Calculated from statistics of Board of Governors of Federal Reserve System; monthly average of daily figures.

position of the banks is shown as "net reserve surplus" when the amount of commercial (Federal Reserve member) bank excess reserves¹ exceeds "discounts and advances" of the Federal Reserve banks. It is shown as "net reserve deficit" when "discounts and advances" are larger than excess reserves. The existence of a "net reserve deficit" means, therefore, that member banks are *borrowing* part of the amount of legally required reserves. It does not mean that they have a technical deficiency of legal reserves.

Study of the chart reveals a close inverse relation between bank reserves and rates. When a net deficit reserve obtains, rates are high; when a net surplus reserve exists, rates are low. The periods 1919–1920 and 1928–1929 are the outstanding ones of deficit reserves and high rates. As bank indebtedness rose in 1919 and 1928, rates also increased; later as the Reserve banks were repaid in 1921 and 1930, rates fell. Beginning in 1933, under the influence of a growing reserve surplus, rates declined sharply—reaching the low of $\frac{1}{2}$ per cent in 1941 when surplus reserves reached an all-time high of nearly \$7 billion. Correlation is not so close since 1934, owing to the facts that rates reached an almost irreducible minimum under the weight of huge excess reserves and that the money market was subject to more control by both the government and the banks.

All this raises the question: What is the explanation of why rates rise as borrowing at the Federal Reserve banks increases and fall as the indebtedness is reduced? The answer lies in the prevailing reluctance of the banks to be in debt. This is partly a result of the attitude of the Federal Reserve banks and partly of the attitude of the commercial banks themselves. The Reserve banks discourage borrowing¹ except for short periods on the grounds that their resources should be husbanded for emergencies and that continuous borrowing by a bank is evidence of a need for more equity capital. Also, by long tradition the banks have avoided borrowing as an evidence of weakness, or as a threat to their reputation of strength in the public mind.

As a consequence of this reluctance to be in debt, member banks are first inclined to sell secondary reserve assets in order to meet a deficiency of primary reserves. This is a remedy for some banks when others have surplus reserves, but it is not a remedy for the whole banking system except through credit contraction. Nevertheless, the effort to conserve reserves may have a response in higher rates even before resort to additional Reserve borrowing. Then if the reserve deficiency is such that

¹ Excess reserves are the part of legal reserve balances in excess of legal requirements.

borrowing is necessary, the banks adopt a restrictive credit policy in an effort to repay the debt as soon as possible. Such a policy leads to higher rates. As the debt is repaid, the banks become more willing to lend and rates decline.

If the member banks felt no reluctance whatever to borrow or the Reserve banks to lend reserves, there would be little tendency for rates to rise along with borrowing. A new need for reserves would be met with a readily available supply. But such is not in fact the case. As it is, rates rise with borrowing, but the fact that Reserve credit is utilized means that they do not rise so much as they otherwise would. This point is well illustrated by the pre-Federal Reserve era when rigidly limited bank reserves led to sharp increases in rates at times of enlarged demands for credit and currency.

When bank reserves become more abundant and the "net reserve deficit" is transformed into a "net reserve surplus"—as has been the case since 1933—"discounts and advances" of the Reserve banks is no longer the key factor relating to rates; instead it becomes the amount and changes in "excess reserves." These two factors, however, should not be regarded as separate and unrelated, but rather as the negative and positive aspects of a single factor, *viz.*, the net reserve position of commercial banks.

While the inverse correlation between the net reserve position of banks and money-rate movements is high, it is far from being perfect. Many other factors also have a bearing on the situation, and their influence is always present. The more important of these other influences arise from Federal Reserve credit policy as expressed through the discount rate, open-market operations, legal reserve requirements, and policy statements to the banks and the press. It should also be noted that the net reserve position of the banks as shown in Chart 14 relates only to Federal Reserve member banks, while the commercial paper rate reflects the entire credit situation. Moreover, even though the commercial-paper rate is perhaps the best single rate index over the years, it is nevertheless only one among many different rates that make up the money-rate structure. The other rates comprising this structure will be discussed in subsequent chapters.

The Federal Reserve Discount Rate. Another factor which has received much emphasis in explaining changes in money rates is the discount rate of the central bank. When the discount rate is raised at a time when borrowing is necessary, market rates also tend to rise. This follows since the commercial banks will be less disposed to borrow at the higher rate, and will therefore make credit less readily available. Also,

if they borrow they are inclined to pass the higher rate on to the market. The converse tends to be true when the discount rate is lowered by the Federal Reserve authorities. For the discount rate to be effective, however, there must be an appreciable amount of borrowing. Otherwise, its level is a matter of indifference to the commercial banks except as it may indicate the future cost of reserves or may point the direction of Reserve policies that may be implemented in other ways.

Statistical study indicates that the Federal Reserve discount rate is not often an active force at the turning points of the market rate of interest. In fact, rather than leading the latter, it ordinarily lags behind a month or more (see Chart 14, page 453). The Reserve authorities usually adjust the rate after other forces have caused a change in money market conditions.

This does not mean, however, that the discount rate has no influence on the market rate. Once established, a high discount rate in relation to the market rate unquestionably deters the amount of borrowing by member banks in need of reserves, and it also hastens repayment. Consequently, commercial bank credit is less freely available and the market rate tends to be higher.

Conversely, a low discount rate in relation to the market rate places less of an obstacle in the path of member bank borrowing. While most banks—owing to the reluctance of incurring debt—will borrow little more at a low rate than at a high one, some of them will do so. Others may not actively borrow more at a low rate, but having borrowed from necessity they may be less disposed to repay the debt by calling loans and selling secondary reserves. Thus, a relatively low discount rate leads to the release of more reserve money to member banks at a time when borrowing is necessary, and thereby tends to lower the market rate. Even a small additional amount of reserve money may have a large effect, since each reserve dollar is capable of supporting a multiple expansion of commercial bank credit in the banking system.

Two Theories of the Market Rate. The explanations of changes in the market rate of interest given in the two preceding sections have come to be known respectively, as the “necessity” and “profit” theories.¹ Both are based on the strategic position of the Federal Reserve authorities in controlling the reserves of member banks whose lending and investing policies, in turn, importantly affect the market rate.

The Necessity Theory. In its extreme form the necessity theory explains the market rate almost entirely in terms of the amount of borrow-

¹ See Winfield W. Riefler, *Money Rates and Money Markets in the United States* (New York, Harper & Brothers, 1930), Ch. II.

ing by commercial banks at the Federal Reserve banks. Banks borrow reserves when necessity requires and repay the debt as soon as possible, irrespective of the rate of discount. Their reluctance to borrow—on which the cost of reserve credit is believed to have small influence—is the core of the theory.

In so far as this view is correct, the effective instruments of credit control by the Reserve authorities become open-market operations and changes in legal reserve requirements. For example, the sale of securities by the Federal Open Market Committee and/or the increase of reserve requirements may be used to force an amount of member bank borrowing which produces the desired credit restriction. In the opposite case, the purchase of securities and/or the reduction of reserve requirements may be employed to enable member banks to repay indebtedness until the desired degree of credit ease is attained.

It should be observed that this theory applies to the credit situation only when the commercial banks are borrowing, or will be forced to borrow, an appreciable amount at the Federal Reserve banks. There is no basis for explanation of market-rate changes during periods of large excess reserves, such as 1933–1949. The theory might readily be extended, however, to include the idea of the “net reserve surplus.”

The Profit Theory. The profit theory underlies the traditional use of the discount rate by the Bank of England and other central banks as the principal means of implementing credit policy. The device of open-market operations was not utilized to speak of until the 1920's, and changes in legal reserve requirements were not employed until the 1930's. The profit theory envisages commercial banks as borrowing or not borrowing reserve money, depending on the prospect of relending at a profit. A high discount rate relative to the market rate makes relending unprofitable; a low discount rate makes it profitable. This theory, like the necessity theory, applies only when there is an appreciable amount of actual or prospective borrowing by commercial banks; otherwise the discount rate is not effective.

Neither theory alone provides a satisfactory explanation of the market rate, and in their extreme forms both are misleading. But when welded together and supplemented with the concept of “net reserve surplus,” the result is a useful theory of the immediate forces determining the market rate. In the United States the leading role has been played by changes in the reserve position of commercial banks by means of open-market operations and changes in reserve requirements. The discount rate has been assigned a supporting role with its main influence on the level of the market rate rather than on its changes of direction.

THE UNDERLYING FACTORS

While the foregoing explanation of the immediate forces governing the market rate is useful, it is too superficial for many purposes. The analysis must therefore be carried one step further in order to discover the basic sources (supply) of reserve money that empty into the reservoir of member bank reserves, and likewise the channels (demand) which are fed from this reservoir.

The Reserve Money Equation. These basic supply and demand factors of member bank reserves are published weekly by the Board of Governors in the form of a reserve money equation which is of great practical usefulness to students, executives, and government officials in the field of finance. The equation for September, 1938, and September, 1948, is presented in Table 29. It is derived from the balance sheet of the Federal Reserve banks and the circulation statement of the Treasury.¹

General Nature of the Equation. The sum of the supply factors in the equation equals the sum of the demand factors plus member bank reserve balances. Since all the supply and demand factors are included, it is possible to account for a change in member bank reserves by changes in the underlying factors. Also, by the nature of the statement the factors of increase are equated to the factors of decrease by the change in member bank reserve balances. Increases in the supply factors and decreases in the demand factors have the effect of enlarging member bank reserves; conversely, decreases in the supply factors and increases in the demand factors tend to reduce member bank reserves. Before undertaking an interpretation of actual changes which have taken place, it is necessary to consider the meaning of each of the included items.

The Supply Factors. The significant components of Reserve bank credit are the holdings of U.S. Government Securities and the Discounts and Advances to the commercial banks. The supply factor Other Reserve Bank Credit is a residual and balancing item that seldom changes enough to require attention.² Holdings of United States securities are under the management of the Federal Open Market Committee and reflect open-market policies. Discounts and advances are made at the initiative of the commercial banks. As already indicated, this item be-

¹ See *Federal Reserve Bulletin*, July, 1935, pp. 419-429, for a description of the technical method of derivation.

² The principal item included under Other Reserve Bank Credit arises from the collection system and is known as "Reserve bank float." This item is the excess of the asset Uncollected Items over the liability Deferred Availability Items. Since according to the time schedule, reserve credit is given on the average before actual collection is made, the Reserve banks to this extent lend reserves without interest. In the last quarter of 1948, the float averaged about \$250 million.

comes the most important single key to the money market situation when a reserve deficiency forces commercial banks to borrow an appreciable amount. Under these conditions it is usually most informative to ana-

TABLE 29. SUPPLY AND DEMAND FACTORS OF MEMBER BANK RESERVES, 1938 AND 1948

(In millions of dollars)

Items	Septem- ber, 1938	Septem- ber, 1948	Factors of increase	Factors of decrease
Supply factors:				
Total Reserve bank credit	2,610	22,408	19,798	
U.S. government securities.....	2,572	21,632	19,060	
Discounts and advances....	8	383	375	
Other Reserve bank credit ...	31	393	362	
Gold stock.....	13,441	23,829	10,388	
Treasury currency.....	2,734	4,570	1,836	
Total supply factors	18,785	50,807		
Demand factors:				
Money in circulation.....	6,570	28,152	.....	21,582
Treasury cash holdings.....	2,717	1,320	1,397	
Treasury deposits with Reserve banks	704	1,321	.....	617
Nonmember deposits.....	340	927	.....	587
Other Federal Reserve accounts..	258	578	.....	320
Total demand factors.....	10,589	32,298		
Total member bank reserve balances	8,196	18,509	.....	10,313
Required	5,276	17,625		
Excess	2,920	884		
Total demand factors and mem- ber bank reserve balances....	18,785	50,807		
Total, factors of increase and de- crease.....			33,419	33,419
Rate on prime commercial paper, per cent	0.69	1.56		

SOURCE: *Federal Reserve Bulletin*. Monthly averages of weekly figures.

lyze changes in the reserve money equation in terms of discounts and advances rather than of member bank reserves. This was the case during the entire period before 1930 when discounts and advances were the

major item of Reserve bank credit. Since that time United States securities have been the major item, and "excess reserves" have been the key item.

The monetary Gold Stock has all been held by the Treasury in bar form since January, 1934. Before that time part of it was in circulation and in the hands of the Federal Reserve banks. Changes in gold are for the most part beyond the control of the Federal Reserve and Treasury authorities.

The item Treasury Currency refers to elements of the currency for which the Treasury is primarily responsible, *viz.*, United States notes, coins, and silver bullion represented by silver certificates. It also includes Federal Reserve bank notes and national bank notes, both of which are in process of retirement as they become unfit.

To repeat, increases of supply factors have the effect of enlarging member bank reserves, while decreases have the opposite effect. Moreover, a change in any supply factor may be offset by opposing supply factor changes and by demand factor changes in the same direction. For example, a rise of \$1 billion in the gold stock may be offset by a decline of \$500 million in Reserve bank credit and a rise of \$500 million in money in circulation, with the result that member bank reserves remain unaffected.

The Demand Factors. The item Money in Circulation is defined as currency outside the Treasury and the Federal Reserve banks. The bulk of it is in the form of Federal Reserve notes. This item is ordinarily the dominant demand factor.

The account Treasury Cash Holdings includes currency and the portions of the stocks of gold and silver not represented by certificates. Before 1934 this account was relatively small and seldom changed significantly. But when the gold dollar was devalued at the end of January, 1934, the Treasury profit of \$2.8 billion was recognized in this account, and it became a factor of considerable importance in the money market (see Chart 15). When the Treasury elected to spend part of the profit, gold certificates were deposited in the Federal Reserve banks. The checks which were then drawn on the enlarged account usually increased member bank deposits and reserves as they were deposited and collected.

The account Treasury Deposits with Reserve Banks refers to the general balance of the Treasury carried on the books of the Reserve banks. It is the active checking account of the government. When the Treasury draws on this account, member bank deposits and reserves are usually increased as soon as the checks are deposited and collected. On

the other hand, the typical method of replenishing this account is a Treasury call on its member bank depositaries directing them to transfer a certain amount to the Federal Reserve bank. This has the effect of reducing member bank reserves dollar for dollar. Since the early 1930's, and especially since the war, changes in this account have become a very important influence on member bank reserves in view of the huge Federal budget.

Nonmember Deposits is made up of all deposits on the books of the Reserve banks other than member bank reserve balances and Treasury deposits. The largest subdivisions of this account are the deposits of nonmember banks maintained chiefly for collection purposes, and the deposits of foreign central banks and governments. When nonmember banks enlarge this account, they usually draw on balances with member banks, and thereby reduce the latter's legal reserves. Conversely, a reduction of this account usually increases member bank reserves.

Other Federal Reserve Accounts is a residual item of little money-market significance, included in order to account for all the reserve money released through the supply factors. Technically, it is the excess of the sum of the capital funds and other liabilities of the Reserve banks over the sum of their bank premises and other assets. When the capital funds of the Reserve banks increase, reserves are usually withdrawn from the member banks, and when their capital funds decline reserves are released to the member banks.

Member Bank Reserve Balances. The account Member Bank Reserve Balances is composed of two elements, required legal reserve and excess legal reserve. Required reserve depends immediately on the amount of demand and time deposits and the height of the percentage requirements fixed by the Board of Governors. The amount of demand deposits is determined principally by the volume of member bank loans and investments. The amount of time deposits is mainly an outgrowth of the past level of national income, the part of income which has been saved, and the portion of savings which people choose to hold in the form of time deposits. The height of percentage reserve requirements reflects the credit policy of the Board.

Excess legal reserve exists then whenever member bank reserve balances exceed the legally required reserve. No matter what the credit situation is, there is almost always some excess reserve reported by the member banks as a group. This follows from the facts that members borrow at the Reserve banks to meet reserve deficiencies, that a penalty rate is applied to such deficiencies, and that some banks in the system have excess reserve. On first view the simultaneous existence of in-

debtedness to the Reserve banks and of excess reserve may seem to present a contradiction. Such would be the case if there were only one great commercial bank with branches. But there is no contradiction in a system of about 6,900 independent member banks.

The amount of indebtedness is reduced by the Federal Reserve funds market in which banks with deficient reserves borrow from those with excess reserves rather than directly from the Reserve banks. Only the larger city banks make use of this market, so that an appreciable amount of indebtedness often remains in the presence of excess reserves in the hands of other banks. The rate on Federal funds fluctuates sensitively from day to day at a level somewhat below the discount rate of the Reserve bank. Most transactions in these funds are arranged by a bond dealer in New York City without commission, except for the hope of subsequent security commissions.

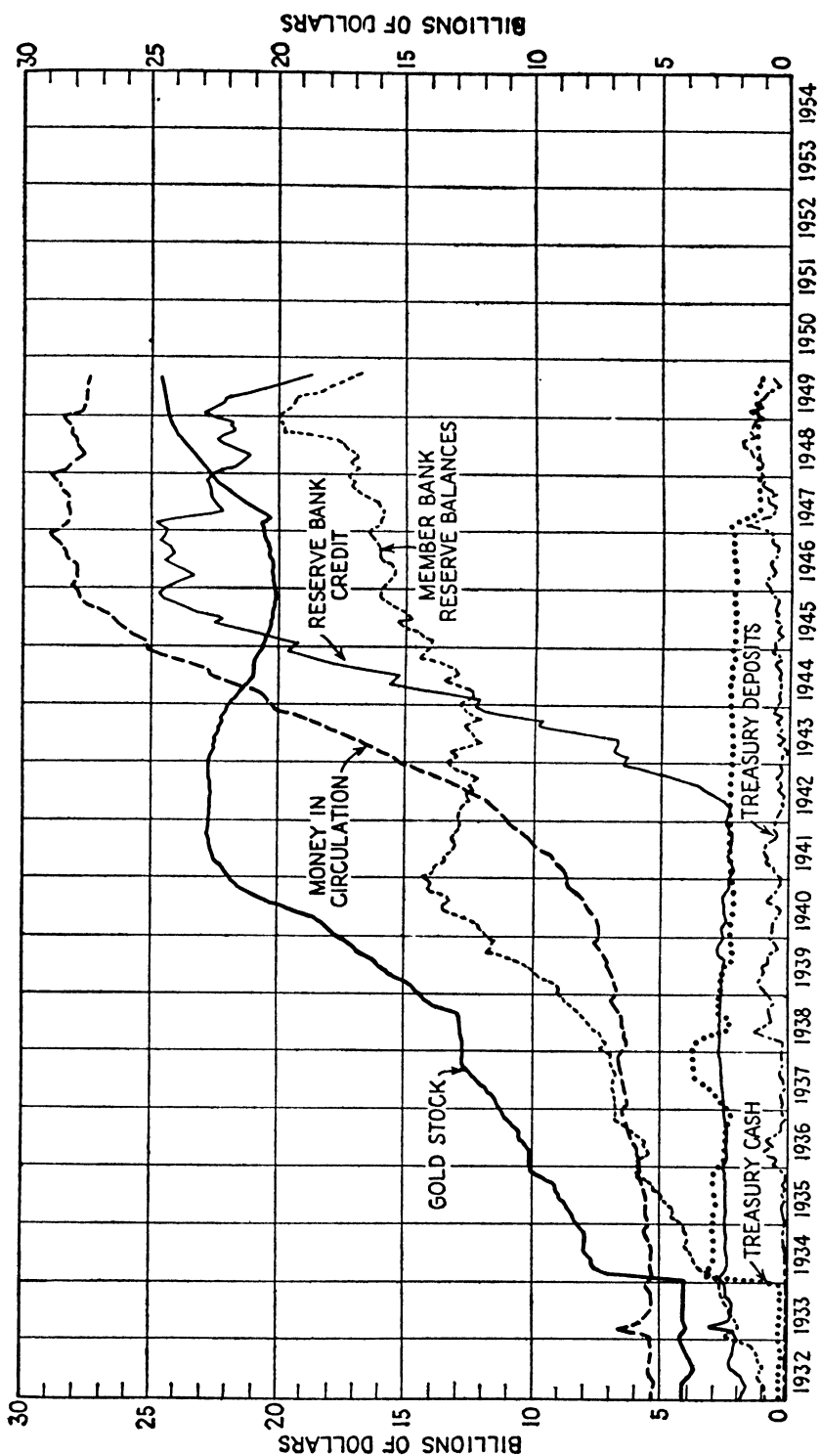
The Simplified Equation. When a general interpretation of the supply and demand factors affecting commercial bank reserves is in mind, it is often possible to give attention only to the major factors. The simplified equation may be stated as follows: Gold Stock plus Reserve Bank Credit equals Money in Circulation plus Member Bank Reserve Balances. It will be noted that the change in member bank reserves between 1938 and 1948, as brought out in Table 29, is largely explained by changes in the other three factors. However, for precise interpretations over short periods it is necessary to include the effects of all factors at work.

Changes since 1932. The dynamic changes that have occurred in the reserve supply and demand factors since 1932 are brought into relief by Chart 15 and Table 29. The sharp rise in currency hoarding combined with the loss of gold in the first quarter of 1933 forced member banks to borrow heavily at the Reserve banks, and reduced their reserve balances. These developments were quickly reflected in the level of money rates. The commercial-paper rate jumped from $1\frac{1}{4}$ per cent in early February to $4\frac{1}{4}$ per cent at mid-March. This will be recognized as the period of nation-wide suspension of banking operations.

The huge rise of member bank reserves during the period 1934-1940 came mainly from an increase in the gold stock, offset in part by the growing amount of money in circulation. Excess reserves reached the unprecedented figure of \$6.8 billion during the last quarter of 1940, and drove the yield on U.S. Treasury bills to the vicinity of 0 compared with 0.67 per cent in January, 1934.

During the war Reserve bank credit experienced a tenfold increase as the Federal Open Market Committee acquired United States securities in sufficient volume to give the commercial banks a comfortable amount

CHART 15. SUPPLY AND DEMAND FACTORS OF MEMBER BANK RESERVES, 1932-1949

Source: Adapted from *Federal Reserve Charts*; monthly average of daily figures.

of excess reserves so that they in turn might provide a good market for government securities. The increase in Reserve bank credit was largely absorbed by the great rise of money in circulation, and to a less extent by a decline in the gold stock.

Since the war, member bank reserves have moved upward, mainly under the influence of an inflow of gold. A reduction of money in circulation and an increase in member bank reserve requirements have also been in part responsible. The amount of "net surplus reserve" was reduced until midyear 1949, with the result that short-term interest rates became firmer. But under the influence of a more liberal Reserve policy instituted at that time, net surplus reserve rose and rates again declined. The rate structure has largely been determined by the Reserve and Treasury authorities.

Review Questions

1. Name the immediate factors and the underlying factors determining the level of interest rates.
2. What is the most important single key to the relation between supply and demand for loan funds? Explain.
3. Define the terms (a) "net reserve surplus" and (b) "net reserve deficit."
4. Study Chart 14. What relation between bank reserves and money rates is indicated? Explain this relationship.
5. Why has there not been such a close correlation between rates and the net reserve position of commercial banks since 1934?
6. Why do interest rates rise as member bank borrowing at Reserve banks increases, and fall as this borrowing is reduced?
7. What would continuous borrowing by a bank from the Reserve bank indicate?
8. Would interest rates tend to fluctuate more or less sharply if member banks were not able to borrow at Reserve banks? Explain.
9. What is the most important factor relating to rates when a "net reserve surplus" exists?
10. Why is there not a perfect correlation between the net reserve position of banks and movements in money rates?
11. Would you expect interest rates to rise or fall when the Federal Reserve discount rate is raised at a time when borrowing at the Reserve banks is necessary? Explain.
12. What condition is necessary in order to allow the Reserve bank discount rate to have an effect on money rates? Why?
13. Does the Reserve bank discount rate tend to lead or lag behind changes in the market rate of interest?
14. Explain the influence of the Reserve bank discount rate on the market rate of interest.
15. Distinguish between the necessity theory and the profit theory of changes in the market rate of interest.

16. Explain the general nature of the reserve money equation.
17. Enumerate and define the supply factors of the equation. What is their effect on member bank reserves?
18. Would member bank reserves necessarily rise if the monetary gold stock should increase? Explain.
19. List and define the demand factors of the equations. What is their influence on member bank reserves?
20. What would tend to be the effect on member bank reserves if Treasury deposits with Federal Reserve banks should increase?
21. Discuss the factors that govern the amount of required legal reserves of member banks.
22. Is it possible for member bank excess reserves and indebtedness at the Reserve banks to exist at the same time? Explain.
23. Describe the Federal (Reserve) funds market. Consult the financial page of a leading newspaper for the latest quotation on such funds. What influence does this market have on the total amount of member bank borrowing at the Reserve banks?
24. State the simplified reserve equation. What are its limitations?
25. How would you expect interest rates to react if the general public decided to hoard more currency? Explain.
26. Why did Reserve bank credit increase during the war?
27. Study Chart 15 and interpret it carefully.

Advanced Questions and Problems

1. "If the member banks felt no reluctance whatever to borrow nor the Reserve banks to lend reserves, there would be little tendency for rates to rise along with member bank borrowing." Do you agree or disagree? Explain.
2. What factors should be watched in an effort to determine the prospect for short-term interest rates? Explain.
3. If the Federal budget shows a deficit in the coming fiscal year, would you expect interest rates to rise or fall? Explain.
4. What effect would you expect a material decline in business activity to have on short-term interest rates? Explain.
5. Would you expect interest rates to rise or fall if the government authorities should discontinue the present policy (1949) of supporting the price of United States securities? Explain.
6. Bring Chart 14 up to date, and interpret the recent changes. (SOURCE: *Federal Reserve Bulletin*.)
7. Bring Chart 15 up to date and interpret the recent changes. (SOURCE: *Federal Reserve Bulletin*.)
8. Prepare a table similar to Table 29 showing the supply and demand factors of member bank reserves in September, 1948, compared with the most recent date for which figures are available. Interpret the changes that have taken place as they relate to the rate on prime commercial paper and other open-market money rates. Also point out the practical significance of these figures to the management of a commercial bank.

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CHAPTER XXX

THE MONEY MARKET AND RATE STRUCTURE

For the sake of simplification, the market rate of interest (money rate) was discussed in the two preceding chapters as if there were but a single rate. This of course is not the case. There are in fact many inter-related rates which differ appreciably and thereby form a money-rate structure representing loans of money made under different conditions of supply and demand. We now turn, therefore, to a more detailed analysis of the various subdivisions of the money market and of the rates which represent them.

Common usage, unfortunately, has not developed a precise meaning for the term "money market." It is sometimes used in the very broadest sense to include the entire mechanism through which money capital is transferred from owners to users. Frequently the long-term division of the market is designated the "capital market," and "money market" is reserved for the short-term division. A still narrower usage refers to the group of open markets for short-term funds where relations between borrower and lender are entirely impersonal. This definition excludes the large volume of loans made by banks to their own customers. In the discussion that follows, the term is used in its broadest usage unless a certain subdivision of the market is indicated.

DIFFERENCES IN MONEY RATES

The dollar, the unit by which money capital is measured and in terms of which loan contracts are drawn, is highly standardized and completely homogeneous from the standpoint of purchasing power. There are no different grades with varying valuations, as in wheat and cotton. All dollars, whether they be in the form of gold, Federal Reserve notes, or commercial bank deposits, have the same command over goods in the market.

In view of these facts, one might at first expect the price for the use of money (rate of interest) to be approximately the same to all borrowers in the money market, just as a single price for identical things tends to exist in the stock and commodity markets. But such is not the case, as is indicated in Table 30.

Rates charged in the various markets in May, 1949, ranged between 1.16 per cent on U.S. Treasury 91-day bills to 3.45 per cent on Moody's Baa bonds. During the high money-rate era of 1929, the range was from 3.70 per cent on U.S. Treasury bonds to 8.88 per cent on stock exchange time loans. Thus, at any given time a wide disparity in rates exists among the several subdivisions. In addition, a marked degree of fluctuation takes place during the course of the business cycle, far greater in fact than in commodity prices or production. The prevailing rate on prime commercial paper in September, 1929, was more than four times as high as in 1933 or 1949.

TABLE 30. THE STRUCTURE OF INTEREST RATES IN THE UNITED STATES, 1929 AND 1949

Type of instrument	September, 1929, per cent	May, 1949, per cent
Prime commercial paper, 4-6 months.....	6.25	1.56
Prime bankers' acceptances, 90-day.....	5.13	1.19
Stock exchange time loans, 90-day.....	8.88	1.63
Stock exchange call loans (renewals).....	8.50	1.63
U.S. Treasury, 91-day bills.....	.....	1.16
U.S. Treasury, 9-12 month certificates ..	.....	1.19
U.S. Treasury, 3-6 month notes	4.53	.....
U.S. Treasury, 3-5 year taxable issues..	.....	1.49
Business loan rates charged customers:		
New York City	6.09	2.42*
7 Northern and Eastern cities.....	6.01	2.68*
11 Southern and Western cities.....	6.04	3.12*
Bond yields:		
U.S. Treasury, 15 years and over, tax- able†.....	3.70	2.38
Moody's Aaa	4.80	2.71
Moody's Baa	6.12	3.45

SOURCE: *Federal Reserve Bulletin*.

* March, 1949.

† Maturity 12 years and over for September, 1929.

These disparities in rates, despite the homogeneity and ease of transfer of the dollar, suggest that the money market is not a single, simple market, but is rather a family of closely associated markets, each with an individuality of its own. A full explanation of the factors accounting for these differences is postponed until a later chapter. In general, the explanation is based more on differences of demand than of supply, since all subdivisions draw on an important common source of supply,

viz., the commercial banks. The time element, degree of risk, terms of the loan contract, tax-exemption features, liquidity, legal restrictions, and artificial controls are the principal factors which account for rate differentials.

THE CUSTOMERS' LOAN MARKET

The bulk of short-term borrowing by business and individuals is arranged between the commercial banks and their own customers, *i.e.*, in the customers' loan market. At midyear 1949 the amount of customers' loans with maturity of one year or less was about \$20 billion. This compares with less than \$1 billion of bankers' acceptances, open-market commercial paper, and noncustomer security loans combined. On the other hand, a greater amount of long-term borrowing is done in the open market than in the customers' market.

The feature of the customers' loan market which most distinguishes it from the open money markets is the intimate personal relation existing between banks and their borrowing customers. Before lending to a business firm a bank must be satisfied concerning the honesty and character of the management, the financial position, the earnings record and prospect, past relations with the bank—especially in regard to payment of loans and the maintenance of a suitable deposit balance—as well as other pertinent facts. The bank in turn is morally obligated to extend credit up to a reasonable amount when the need arises. In the typical case, the relationship extends over a period of years, so that the officers of the bank come to know a great deal about the management problems of the company. This frequently enables them, especially when stubborn financial problems arise, to give valuable counsel.

In view of these conditions, competition in the customers' market is less active than in the open market where borrowers and lenders are entirely impersonal. For this reason, even in New York City where competition is keenest, the rates charged commercial customers are less sensitive to changing conditions than are open-market rates. That is, customers' loan rates lag somewhat behind in an upturn or downturn of the market, and the range of fluctuation is narrower. In the lesser cities of the country there is still less sensitivity in rates, and in the small towns they are almost impervious to anything short of a cataclysmic change.

There are also noteworthy differences in rate levels. In general, the prevailing customers' loan rate in New York is higher than the open-market rate on prime commercial paper. Rates are a step higher in

the smaller cities, and usually reach their highest level in the small towns.

Not only do customers' rates vary between communities, but they also differ within the same bank. Large customers with high credit standing can borrow on the most favorable terms because of the relatively small risk involved as well as their greater bargaining power. Such customers commonly maintain credit lines with two or more banks, and their accounts are zealously sought by other banks. In addition, enterprises of this standing have access to open-market borrowing which they may use or threaten to use as a bargaining instrument. Customers who can bring less pressure to bear usually have to pay a higher rate, and those of questionable credit standing are charged a still higher rate.

The higher rate level in smaller cities and towns is partly to be explained by the inferior bargaining position of local business firms for credit. The only credit source available is often the local bank or banks. It is also a well-established fact that banking costs in relation to volume of loans are higher in the small banks.

THE OPEN MONEY MARKETS

Whereas the customers' loan market is distinguished by the close and personal connection between the borrowing customer and his bank, the open money markets are characterized by the objectivity of the relation between borrower and lender. As in all free markets, there exists a group of borrowers (buyers) competing among themselves for funds, a group of lenders (sellers) competing in the placement of their funds, and a group of middlemen who provide facilities for bringing together the bids and offers of the borrowers and lenders. For the most part there is no formal meeting place for these markets, since over-the-counter transactions prevail. Facilities are provided by the offices of brokers, dealers, and banks with their network of leased and private wires.

Since subsequent chapters are devoted to a description of the individual open markets, a mere listing of them suffices at this point:

1. The United States government security market
2. The brokers' loan market
3. The commercial-paper market
4. The bankers' acceptance market

LONG-TERM AND SHORT-TERM MARKETS

A second classification of the money market, viewed in the broadest sense, separates it into long-term and short-term divisions. This classification cuts across the boundaries of the customers' and open markets.

The long-term division is commonly designated the capital market, and it includes all the institutions, persons, and facilities engaged in (1) the distribution of loan-money capital to productive enterprise and governments, principally through the sale of bonds, and (2) the trading in outstanding bonds. The main institutions included under category (1) above are the savings banks and savings departments of commercial banks, investment banks, life insurance companies, savings and loan associations, the Federal Land Banks, the Federal Housing Administration, and the Reconstruction Finance Corporation. Under category (2) are included the organized security exchanges of the country, over-the-counter security markets, and security brokers and dealers.

The measurement of interest rates in the long-term market presents serious difficulties. The rates indicated by various indexes of bond yields may be quite different, owing to the nature of the bonds included and the statistical methods of computation. The yields naturally vary with quality. For example, in May, 1949, the yields on various qualities of bonds were as follows: U. S. government, 15 years and over, 2.38 per cent; Moody's Aaa, 2.71 per cent; Moody's Aa, 2.78 per cent; Moody's A, 3.04 per cent; Moody's Baa, 3.45 per cent.¹ Yields also vary greatly with date of maturity. In periods of credit stringency, the short-term rates rise well above long-term rates. In 1920, for example, the average of short-term, open-market rates was above 8 per cent, the yield of 2- to 4-year Aaa bonds was about $7\frac{5}{8}$ per cent, of 5- to 10-year Aaa bonds was 7 per cent, and of 30-year Aaa bonds was $6\frac{1}{4}$ per cent. On the other hand, in periods of credit ease the relationship is reversed. For example, at midyear 1940, the average yield of the short-term open markets was approximately 1 per cent, of 2- to 4-year Aaa bonds was $1\frac{1}{2}$ per cent, of 5- to 10-year Aaa bonds was $2\frac{3}{8}$ per cent, and of 30-year Aaa bonds was $2\frac{7}{8}$ per cent. On the average, there is probably little difference in yield between short- and long-maturity obligations of the same quality.²

Certain other difficulties of measurement are also encountered. Some bonds have conversion privileges, entitling the owner to convert them into stock; other bonds embody valuable warrants which may be exercised in the purchase of stock; many bonds are callable by the issuer at prices changing with time; still others receive tax exemption or other special privilege; and finally, nominal coupon rates change with the times, so that a simple average of quoted bond prices cannot be employed.

¹ *Federal Reserve Bulletin*, June, 1949, p. 700.

² See Moody's *Bond Survey*, July 29, 1940, p. 255.

There is thus no single long-term rate that represents the market, but rather a structure of rates, with differences largely due to quality and maturity. In order to prepare an index of bond yields of reasonable accuracy over a period of years, great care must be exercised to preserve uniform quality in the sample and to eliminate issues with special features or privileges. Also, the maturity date of the sample must be kept constant, so that yield changes will not occur from this source. These precautions are taken by Standard & Poor's Corporation in their index of yields on 45 high-grade corporate bonds. Each included issue is converted to the equivalent price of a $4\frac{1}{2}$ per cent bond having 30 years to date of maturity.

While there is no hard and fast difference between the long- and short-term money markets, and the dividing line is somewhat arbitrary, it is nevertheless convenient to observe the distinction. From a functional standpoint the long-term market is largely concerned with financing activities which liquidate themselves only over a period of years. Residential, commercial, and industrial building construction are illustrative. The short-term market on the other hand has traditionally been associated with the financing of operations that are liquidated within a short time, exemplified by the revolving working-capital needs of business. Since the early 1930's, however, United States securities have been the dominant element in both the long and short markets.

In actual practice there is a spill-over of funds between the two markets. Business corporations, to an increasing extent, have been raising working capital through the sale of long-term obligations. On the other side, there exists a substantial amount of short-dated borrowing, the proceeds of which are used to finance capital outlays. Such loans must be renewed periodically, either with the same bank or with another bank.

Review Questions

1. Discuss the various meanings of the term "money market."
2. Summarize the degree of interest rate differentials as brought out by Table 30. How do you account for these rate differentials in the various subdivisions of the money market?
3. What are the distinguishing features of the customers' loan market and of the open money markets?
4. Indicate some of the factors a bank must consider before it is willing to lend to a business firm.
5. Why is it that rates charged in the customers' loan market are less sensitive to changing conditions than are rates in the open money market?
6. Explain the ways in which customers' rates vary.

7. Why are interest rates charged by banks in smaller cities and towns generally higher than in larger cities?
8. Name the main subdivisions of the short-term open money market.
9. Describe the long-term money market and compare it with the short-term market.

Advanced Questions and Problems

1. What difficulties are encountered in attempting to measure interest rates in the long-term market?
2. Discuss the influence of (a) quality and (b) maturity on the yields of obligations in the long-term market.
3. "There is no hard and fast difference between the long- and short-term money markets, and the dividing line is somewhat arbitrary." Develop this statement.

CHAPTER XXXI

THE UNITED STATES GOVERNMENT SECURITY MARKET

A vast United States security market which dwarfs all others is our legacy from the First and Second World Wars and the intervening depression. The bulk of this debt grew out of financing the Second World War. Few people understand the size, breadth, and complexity of this market and still fewer appreciate the problems that are associated with it—public problems of managing the Federal debt, raising revenue, and controlling the monetary and economic systems; private problems of paying taxes, managing investment portfolios, and coping with price inflation. It is not an exaggeration to say that preservation of the revered institutions of democracy and private enterprise depends on the solution of these many-sided problems. At midyear 1916 total Federal securities outstanding amounted to less than \$1 billion. By 1939 they were \$40 billion and at the peak in February, 1946, \$279 billion. A change of this magnitude cannot occur without serious repercussions on every institution and citizen.

DEVELOPMENT OF THE FEDERAL DEBT

For the present purpose it is convenient to discuss the development of the Federal debt in six periods, as follows: (1) before 1916; (2) 1917–1919; (3) 1920–1930; (4) 1931–1940; (5) midyear 1940–midyear 1946; and (6) since midyear 1946.

1. The first important peak in the debt (\$2.3 billion) was created in financing the Civil War.¹ Previous to that time it was never so much as \$100 million. In the years following the Civil War conservative financial policies were pursued, so that by 1888 it dropped to just under \$1 billion where it remained until our entry into the First World War. During this period United States securities were a relatively unimportant medium of investment, especially since special-purpose issues constituted a large part of the modest total.²

¹ The amounts of Federal debt given in this section refer to interest-bearing securities, direct and guaranteed.

² The most important special-purpose issues were those which were eligible to serve as security for national bank notes: the 2 per cent Consols of 1930 (\$600 million outstanding), and the 2 per cent Panama Canal bonds (\$75 million outstanding).

2. The large financial requirements of the First World War caused a steep rise in the Federal debt to the unprecedented total of \$25.2 billion in 1919. A sizable part of it consisted of short maturities. This period marked the beginning of the market as a major outlet for investment funds.

3. The next 11 years, a period of prosperity, saw a steady reduction of the debt until it amounted to \$15.9 billion at midyear 1930.

4. With the advent of the great depression the reduction in revenue from taxation and enlarged relief expenditures combined to produce a long series of budget deficits. The adoption of a policy of Federal spending by the Roosevelt administration in 1933 as a means of bringing about recovery augmented these deficits, so that by 1940 the debt stood at \$47.9 billion.

5. The financial needs of the Second World War reached almost beyond human comprehension. Nearly three-fifths of Federal expenditures during the war was met with borrowed money, so that between the end of June, 1940, and February, 1946, the debt rose from \$47.9 billion to \$279 billion.

6. In March, 1946, the Treasury began a debt-retirement program which reduced the debt to \$250.2 billion by the end of June, 1948—a reduction of \$28.8 billion. This reduction was effected principally by drawing on the huge cash balance (\$24.7 billion) which the Treasury accumulated from the Victory Loan at the end of 1945, rather than from a budget surplus. However, substantial progress was made during 1947 and the first half of 1948 in retiring the debt out of a budget surplus.¹

TYPES OF UNITED STATES SECURITIES

In order to meet the demands of the various sectors of the investment market and to serve its own requirements the Treasury issues different types of marketable securities as follows: (1) bills, (2) certificates of indebtedness, (3) notes, and (4) bonds. It also issues several nonmarketable securities: (1) savings bonds, (2) savings notes, (3) armed forces leave bonds, (4) special issues, and (5) other bonds. In addition, the Treasury has followed the practice in recent years of fully guaranteeing the securities of certain Federal agencies. The amounts of each of these issues at midyear 1948 compared with a prewar year are shown in Table 31. Some comment on them individually is called for in order to visualize the Federal debt position as a whole.

Treasury Bills. Treasury bills were first authorized by law in June, 1929. Since that time they have emerged as one of the principal in-

¹ See the Appendix to this chapter for a discussion of the Federal budget.

struments for short-term borrowing. They are sold on a discount basis, and the face (maturity) value is payable to the bearer on a specified date.

While bills may legally have a maturity as long as 1 year, the usual maturity is 91 days (13 weeks). A new issue is offered weekly to take up the maturing issue unless its retirement is contemplated. During the first half of 1948 the weekly sale averaged about \$1 billion, and the 13 issues outstanding at midyear 1948 aggregated \$13.8 billion.

TABLE 31. INTEREST-BEARING DEBT AND GUARANTEED OBLIGATIONS OF THE UNITED STATES GOVERNMENT, JUNE 30, 1940 AND 1948
(In millions of dollars)

Issues	1940	1948
Total marketable issues	39,934	160,373
Bills.....	1,302	13,757
Certificates		22,588
Notes	6,383	11,375
Treasury bonds	26,555	112,462
Other bonds	196	164
Guaranteed issues.....	5,498	27
Total nonmarketable issues:	7,941	89,759
Savings bonds.....	2,905	53,274
Savings notes.....	0	4,394
Armed forces leave bonds	0	563
Special issues.....	4,775	30,211
Other bonds.....	261	1,275
Guaranteed issues	0	42
Total marketable and nonmarketable issues	47,875	250,132

SOURCE: *Treasury Bulletin*.

The announcement of a bill offering, which sets forth the detailed terms and conditions, is made by the Secretary of the Treasury. Tenders, however, are received only by the Federal Reserve banks acting as fiscal agents. Bids are made on the basis of 100. For example, a bid of 99.75 for a 91-day bill means that the buyer is willing to pay \$997.50 for such a bill having a maturity value of \$1,000 and that he expects a yield of 1 per cent per annum. Tenders may be submitted without a down payment by recognized investment dealers and incorporated banks. But others are required to make a deposit of 10 per cent of the

face amount of tenders submitted in the absence of a guaranty of payment by an incorporated bank. When the period for placing bids has elapsed—usually two or three days—the Reserve banks communicate the details to the Secretary of the Treasury who then awards bills in full to the highest bidders until the desired amount is obtained. It is the current practice, however, to grant “noncompetitive” bids in full at the average rate of the competitive bids within a limit of \$200,000. Offerings are usually well oversubscribed so that a large proportion of the competitive tenders is rejected. After the awards, the Federal Reserve banks advise those who have submitted tenders of the acceptance or rejection of their bids. Government security dealers, large commercial banks, and the Federal Reserve banks subscribe for the bulk of new offerings, after which some redistribution takes place. Payment for bills may be made by a check on the Federal Reserve bank or in other immediately available funds, or by the exchange of maturing bills. During the war, qualified commercial banks were permitted to make payment by crediting the war loan deposit account of the Treasury, but this practice was discontinued in 1946.

Before the Second World War, Treasury bills were held chiefly by the larger commercial banks. The Reserve banks also held a substantial amount, and large business corporations bought them as a liquid investment. Since April, 1942, however, the bulk of outstanding bills has been held by the Reserve banks. At that time as a war finance measure they announced their willingness to buy all Treasury bills offered at a discount rate of $\frac{3}{8}$ per cent per annum. In the following August they established a two-way market by agreeing to resell bills at the purchase rate. This step enabled banks to convert excess legal reserve balances into bills without lowering their liquidity. Despite this inducement, however, the commercial banks preferred to hold other Treasury securities bearing a higher yield with the result that most of the outstanding bills found their way to the Reserve banks. Thus at the end of June, 1947, the Reserve banks held 92 per cent of all outstanding bills. By May, 1949, however, their holdings declined to about two-fifths while those of commercial banks rose. This was a result of a shift by the Reserve banks from bills to bonds as they gave support to Federal bond prices.

The Treasury bill rate remained pegged at $\frac{3}{8}$ per cent until July, 1947, when the Federal Open Market Committee directed the Reserve banks to terminate the policy of buying all bills offered at a fixed rate as well as the repurchase option privilege. This permitted the bill rate to make a more competitive adjustment to other rates in the market. Within a few days it rose to $\frac{3}{4}$ per cent and has since edged upward

to just over 1 per cent (June, 1949). A free market for bills should once again make them attractive to commercial banks and others with the result that they should enjoy a wider distribution.

Experience has established the bill as a most useful instrument of Treasury finance as well as an attractive medium of liquid investment. The weekly offerings permit the Treasury to meet its current requirements flexibly at the market rate. This avoids the difficult problem of forecasting a rate in advance at which investment demand is expected to take up an offering of securities. It also avoids borrowing large amounts of funds at infrequent intervals with consequent wide variations in Treasury deposits and disturbances to the money market. Large-scale financing can be postponed until favorable conditions exist, and bill maturities can be scheduled in such way as to minimize the effect on commercial bank reserves.

Certificates of Indebtedness. Before the authorization of Treasury bills in 1929, certificates of indebtedness were the only instrument available for short-term Federal borrowing. They were first authorized by Congress in April, 1917, as a part of the program of financing the First World War. They were issuable at not less than face value at a specified rate and with a maturity not to exceed one year. In practice, they were utilized to raise funds in anticipation of revenue from taxation and from the issuance of longer term securities. In January, 1934, Congress authorized the Treasury to issue certificates of indebtedness as well as bills on a discount basis, but to the present (July, 1949) it has not done so.

During the period February, 1934, to March, 1942, the Treasury offered no new issues of certificates, so that for about seven years they disappeared entirely from the financial scene. But they were revived again in financing the Second World War, and since 1943 they have been a larger source of funds than either bills or notes (see Table 31). At the peak in February, 1946, the amount of certificates reached \$41.4 billion, but the subsequent debt-retirement program reduced the amount to \$28.7 billion at the end of April, 1949.

Current practices of the Treasury and the Reserve banks in offering certificates are very similar to those already described with respect to bills. The only important differences are (1) that the maturity of certificates is longer, usually one year; (2) that they are sold at face value with a specified rate of interest which is higher than the yield on bills; and (3) that commercial banks which act as Federal depositaries are permitted to make payment for them by crediting the Treasury's deposit account. Certificates are offered only in coupon form.

Commercial banks usually provide the largest market for certificates which are an attractive form of secondary reserve. The next largest type of owner is as a rule the Federal Reserve banks; other investors include savings banks, insurance companies, government agencies and trust funds, and individuals. More concretely, at midyear 1948 commercial banks and Reserve banks together held almost two-thirds of all certificates, leaving only one-third for all other investors.

Coupon rates on certificates over the years have sensitively reflected money-market conditions, ranging from a peak of 6 per cent in 1920 to a low of $\frac{1}{4}$ per cent in 1933. During the Second World War the rate was pegged at $\frac{7}{8}$ per cent for 1-year maturities beginning with the issue of August, 1942. This rate obtained until August, 1947, when the Treasury offered an 11-month maturity at $\frac{7}{8}$ per cent in keeping with the general firming of money rates.

Treasury Notes. Treasury notes are employed for intermediate-term borrowing. Like certificates, they were first authorized by Congress in April, 1917, as an instrument of war finance. The maturity must be longer than one year but not in excess of five years from date of issue. They are offered at face value in coupon form with a specified rate of interest. At the end of April, 1949, the total of marketable notes outstanding was \$3.6 billion. In addition, nonmarketable savings notes, receivable for Federal taxes, were outstanding to the amount of \$4.5 billion.

The procedure of the Treasury and Reserve banks in offering marketable notes is essentially the same as that already described in offering certificates. Also, as in the case of certificates, commercial banks are usually the largest buyers. At midyear 1948 they held almost half of them with the rest distributed among the Reserve banks, savings banks, insurance companies, individuals, and others. Coupon rates of Treasury notes have traversed a range between a peak of $5\frac{3}{4}$ per cent in 1921 and a low point of 0.90 per cent in 1945. At any given time the rates of different issues vary with the maturity.

Treasury Bonds. The long-term borrowing of the government takes the form of Treasury bonds. The maturity of a bond must be in excess of 5 years from date of issue. At present, (July, 1949) original maturities of outstanding issues range from 5 years, $6\frac{1}{2}$ months ($1\frac{1}{2}$ per cents of 1950), to 50 years (3 per cent Panama Canal loan of 1961). Marketable bonds are issued in both coupon and registered form with a specified rate. At midyear 1948 there were 40 separate issues of marketable bonds outstanding to the total amount of \$112.6 billion. In addition, nonmarketable bonds amounted to \$54.5 billion.

Coupon rates of Treasury bonds have ranged between a high of $4\frac{1}{4}$ per cent in the financing of the First World War to the low recorded by the $1\frac{1}{2}$ per cents of 1950. The latter issue, however, was a short-term bond ($5\frac{1}{2}$ years). All long-term issues (25 to 30 years) offered in the financing of the Second World War bore a coupon of $2\frac{1}{2}$ per cent; 10-year bonds had a coupon of 2 per cent.

Guaranteed Obligations. In the 1930's the Treasury followed the policy of guaranteeing the principal and interest of the securities of six Federal agencies—Commodity Credit Corporation, Federal Farm Mortgage Corporation, Federal Housing Administration, Federal Public Housing Authority, Home Owners' Loan Corporation, and Reconstruction Finance Corporation—which sold their own obligations directly in the market. These issues were just as truly Federal securities as direct obligations. At the peak in 1941 they amounted to \$6.4 billion. In October of that year the Treasury announced that henceforth the agencies would no longer sell guaranteed obligations, but that it would advance the funds needed in return for the agency obligations. As a consequence of this change in policy the amount of guaranteed issues has declined steadily until at the end of April, 1949, their total was only \$19 million and the only marketable issues were about \$12 million of debentures of the Federal Housing Administration.

Nonmarketable Federal Obligations. While our main concern is with marketable Federal securities, brief comment on the nonmarketable issues is desirable. At the end of April, 1949, they amounted to the substantial sum of \$94 billion, distributed as follows: savings bonds, \$56.0 billion; savings notes, \$4.5 billion; armed forces leave bonds, \$416 million; special issues, \$31.8 billion; other issues, \$1.3 billion.

United States savings bonds have been offered since March, 1935, in seven series, A to G. They are nontransferable. Series A to E are sold at a discount of 25 per cent and mature in 10 years although they may be cashed at the banks on demand. If held until maturity they yield 2.9 per cent per annum, but if redeemed before maturity the yield declines along with the period held until the first year when the yield is zero. Only individuals can own these bonds and the amount purchased annually by one person is limited to \$10,000, maturity value.¹ Series A matured in 1945, series B in 1946, and series C in 1947. Series E bonds constituted the bulk of the total D and E bonds outstanding at the end of April, 1949—\$32.9 billion out of a total of \$34.9 billion. Series F and G bonds are available to all subscribers except commercial banks whose purchases are narrowly restricted. However, one sub-

¹ \$5,000 prior to 1948.

scriber can purchase no more than \$100,000, issue price, of series F and G combined during one calendar year. Both series are redeemable at the banks after 6 months from date on 1 month's notice. Series F is a 12-year discount bond sold at 74 per cent of maturity value. If held to maturity it yields 2.53 per cent, but like series E, its yield decreases as the period held declines until no yield at all is realized during the first year. Series G is a 12-year par bond which bears interest at the rate of $2\frac{1}{2}$ per cent per annum if held to maturity. But if not held to maturity the yield is graduated downward to zero during the first half year by redemption values less than par. Series F has been less popular than series G as evidenced by the fact that at the end of April, 1949, the respective amounts outstanding were \$3.6 billion and \$17.5 billion.¹

Treasury savings notes, series C, have been on continuous sale since September, 1942. They are sold at par in unlimited amounts and mature three years from date of issue. They are designed mainly to meet the needs of Federal taxpayers, and are acceptable in payment of any Federal tax during and after the second calendar month following the month of purchase. The tax-payment and redemption value is graduated upward from par in such fashion that the investment yield rises from 0.60 per cent per annum beginning with the second month after issue to 1.07 per cent at the end of the thirty-sixth month. Savings notes are redeemable on demand at any qualified bank, the Reserve banks, and the Treasury.

Armed forces leave bonds have been issued to service men under authority of the Armed Forces Leave Act of August, 1946, in settlement of accumulated leave allowances. The bonds mature in five years from the date of issue and bear interest at $2\frac{1}{2}$ per cent. By an amendment to the Act in July, 1947, the bonds were made redeemable at face value plus accrued interest at any time after September 2, 1947. As a consequence, heavy redemptions took place, reducing the amount outstanding from \$1.9 billion at the end of August, 1947, to \$416 million at the end of April, 1949.

Special issues of the Treasury consist of notes and certificates issued to Government agencies and trust funds. The bulk of the total of \$31.8 billion on April 30, 1949, was accounted for by the social security and life insurance funds—Federal Old-age and Survivors Insurance Trust Fund, \$8.6 billion; Unemployment Trust Fund, \$7.4 billion; National Service Life Insurance Fund, \$7.0 billion; government employees retirement funds, \$3.1 billion; Railroad Retirement Account, \$1.7 billion; and Government Life Insurance Fund, \$1.3 billion. The

¹ *Treasury Bulletin*, June, 1949, p. 25.

remainder was distributed among the Federal Deposit Insurance Corporation, Federal Home Loan Banks, Federal Savings and Loan Insurance Corporation, Housing Insurance Funds, and the Postal Savings System.¹

Classifications of Federal Securities. While this section has been primarily concerned with the different types of Federal securities, reference has been made to other classifications which are utilized in connection with particular problems.

First, the total Federal debt may be divided into the part held by the public and the part held by government trust funds, corporations, and agencies. At the end of March, 1949, the government-held portion amounted to \$37.7 billion and the publicly held division to \$214 billion.² For the problems of monetary control, price level, employment, and Federal debt management the publicly held debt is a highly significant part of the total.

Second, a division of the debt may be made on the basis of marketability. The nonmarketable debt at the end of April, 1949, was \$94.1 billion, or 37 per cent of the total.³ The proportion of nonmarketable debt has risen materially since the war for three reasons: (1) the debt-retirement program has applied to marketable issues; (2) the nonmarketable special issues to trust funds have grown steadily; and (3) the Treasury has followed the policy of shifting publicly held debt into nonmarketable obligations. This relates importantly to the problem of public debt management and raises a question of public policy with regard to the maintenance of free markets in the financial field.

Third, the debt may be classified on the basis of maturity as shown in Table 32. The outstanding feature is the relatively short maturity of the marketable division of the debt. At the end of March, 1949, 32 per cent was due within one year and 59 per cent within five years. Such a classification is useful in connection with the problem of Federal debt management both from the standpoint of the Treasury and from that of investors.

Fourth, a division of the debt especially significant to investors is into "bank restricted" and "bank eligible" issues. In financing the Second World War the Treasury denied to commercial banks the privilege of subscribing to long-term issues. This limitation was modified somewhat beginning with the Third War Loan in 1943 when purchases were permitted according to formulas based on a percentage of time and savings deposits. Apart from minor exceptions, commercial banks can-

¹ *Ibid.*, p. 16.

² *Ibid.*, p. 30.

³ *Ibid.*, p. 15.

not own restricted issues until they become eligible for purchase at specified dates in the future. On March 31, 1949, \$49.6 billion of marketable Treasury bonds out of a total of \$111.4 billion were bank restricted.¹ The purpose of these restrictions was to prevent inflationary pressures arising from the creation of new deposit money. Since the bank-eligible feature of a bond usually reduces the yield, this classification is important to all investors in government bonds as well as to commercial banks.

Fifth, the Federal debt may be classified on the basis of tax status. On March 31, 1949, \$141.1 billion of the marketable issues were subject to Federal income taxes, \$14.3 billion were partly exempt,² and \$162 million were wholly exempt. The public nonmarketable issues (\$62

TABLE 32. MATURITY DISTRIBUTION OF FEDERAL INTEREST-BEARING MARKETABLE SECURITIES, MARCH 31, 1949
(*Par values, in millions of dollars*)

Maturity class	Amount	Per cent
Due or first becoming callable:		
Within 1 year.....	49,207	31.6
1-5 years	42,090	27.0
5-10 years.....	10,464	6.7
10-15 years.....	15,238	9.8
15-20 years.....	38,650	24.8
Unclassified	12	0.0
Total.....	155,660	100.0

SOURCE: *Treasury Bulletin*, June, 1949, p. 31.

billion) were all subject to the tax. This represents a decided change in tax status since 1941 when all Federal securities were either wholly or partly tax exempt. Under provisions of the Public Debt Act of February, 1941, interest on all Federal obligations issued since March 1, 1941, has been fully subject to Federal income taxes, although not subject to income taxes of states and other political subdivisions.

Last, it is frequently useful to prepare a distribution of Federal marketable securities on the basis of yield. On April 29, 1949, yields ranged from 0.98 per cent on the shortest term issue maturing within 1 month to 2.44 per cent on the longest term bond, callable in 18 years.³

¹ *Ibid.*, p. 33.

² Exempt from Federal normal income tax on individuals and corporations, but subject to graduated additional surtaxes and excess-profits taxes.

³ *Treasury Bulletin*, June, 1949, p. 35.

DEALERS IN FEDERAL SECURITIES

Dealers in government securities occupy a far more important position in the financial system than is generally appreciated. This is understandable in view of the rapidity with which the marketable public debt has grown—\$15 billion in 1930; \$34 billion in 1940; \$200 billion at the peak in February, 1946. By the end of July, 1948, it had dropped to \$155.7 billion. It is also understandable because the government dealers operate without much publicity or fanfare in an over-the-counter market which has no formal meeting place. In addition, government regulation with its attendant popular interest is at a minimum.

Informed estimates place the volume of trading in government securities in the vicinity of \$5 billion in an average month. This is about five times as large as the monthly average money value of shares traded on the New York Stock Exchange.

The bulk of this huge volume is handled by less than a dozen major dealers located in New York City.¹ In addition, a large number of other investment houses and commercial banks throughout the country have active government departments.

Functions of Dealers. The principal function of dealers is to bring together buyers and sellers of government securities throughout the United States and the rest of the world. They also play an important role as intermediaries between the Treasury and investors when new issues are offered. In making the market, they keep in close touch with all large institutional investors—commercial banks, insurance companies, savings banks, corporations, trust funds, governments, and others—as well as with wealthy individuals. Thus, having an intimate knowledge of the portfolios and requirements of clients, they are in position to place offerings and fill purchase orders to the best advantage. Oftentimes they *create* the market by buying a block of securities before having located the ultimate purchaser and by selling without actually having the securities in hand. In the latter case they must borrow securities to make delivery. All these activities help to bring order into the market and to level out violent short swings.

An important public function is performed by dealers for the Federal Reserve System and the U.S. Treasury Department. The Federal Open Market Committee makes all purchases and sales of government securities through an accredited list of major dealers. They follow this practice as a matter of policy in order to maintain a broad, competitive

¹ The most important dealers are: Bankers Trust Co.; Blair & Co.; C. F. Childs & Co.; C. J. Devine & Co.; Discount Corp.; First Boston Corp.; Guaranty Trust Co.; D. W. Rich & Co.; Salomon Brothers & Hutzler.

market which is essential in view of the size and frequency of their dealings. In recent years the Federal Reserve banks have held over \$20 billion of government securities, and the Committee often engages in dealings of more than \$500 million in a single week. It depends on the dealers for information with regard to the technical condition of the market. Information is also furnished the Treasury in connection with many aspects of its debt-management activities. In particular, the Treasury consults the dealers in order to determine the proper types of securities, rates, maturities, and other conditions of new issues.

It should also be mentioned that the institutional and other investors depend on the dealers for advice with regard to their holdings of government securities.

Practices of Dealers. In their capacity as middlemen dealers act as principals rather than as agents. They buy and sell for their own account without charging customers a direct commission. Their profit is derived from the margin between purchase and sale prices.

Quotations of bonds are on the basis of 100 with fractions in thirty-seconds and sixty-fourths. For example, a quotation of 101-13 bid and 101-15 asked means that a buyer is willing to pay $101\frac{13}{32}$ (\$1,014.0625) and a seller is asking $101\frac{15}{32}$ (\$1,014.6875). The bulk of trading is done with a margin of only $\frac{1}{32}$, and the margin may be only $\frac{1}{64}$ on short-term bonds. Treasury notes and certificates are quoted on the basis of 100 with decimal fractions, such as 100.015 bid, 100.034 asked. Treasury bills are quoted on a discount basis, *e.g.*, 1.00 per cent bid, 0.96 per cent asked.

This vast over-the-counter market might well be re-christened an "over-the-wire" market since almost all transactions are arranged over private wires. One large government house operates more than 600 private wires by which its traders and customers' men keep in direct communication with important clients and with other dealers throughout the country. Traders call each other many times daily "asking for the run," which means checking the bid and asked quotations and the quantities demanded and offered on all issues. According to the dealers' code of practices, firm quotations must on request be furnished competitors who have the right to take the offer.

The complexity of the market is such that some specialization is necessary among the traders and customers' men. One trader, for example, may deal only in short-term bonds while another deals in long-term bonds. One customers' man may deal primarily with commercial banks which are mainly concerned with short-term issues and eligible bonds. Another may become an expert on the requirements of

life insurance companies and savings banks which as a rule desire long-term issues with higher yields.

In order to protect themselves, dealers engage heavily in hedging operations. For example, a large selling order for bank-restricted $2\frac{1}{2}$'s of 1967–1972 may come into the market. A dealer may buy this block having in mind a sale he has just made or believes he can make in $2\frac{1}{2}$'s of 1965–1970. These issues are closely comparable and normally sell in a definite price relationship. Then as time goes on he attempts to unravel the hedge and balance his holdings by selling out 1967–1972's and buying in 1965–1970's. Hedging operations of this sort are a stabilizing influence and aid in keeping fluctuations in fractions instead of in points.

Government dealers finance their operations in part by their own capital but principally by commercial bank call loans secured by government securities. If the collateral consists of obligations with maturities of less than one year, the large dealers can borrow the full par value without putting up any cash margin. When the maturity of the collateral exceeds one year a cash margin is required, ranging from 1 per cent for the shortest maturities to 5 per cent for the longest. Rates charged are among the lowest in the money market. In 1949 the typical rate was about $1\frac{1}{4}$ per cent per annum. Day loans without collateral are used to finance operations within a given day, but collateral is required on loans carried over a day.

In order to make delivery according to regulations, dealers, having sold issues which they do not own, frequently have to borrow securities. Such borrowing is done from large commercial banks that specialize in providing this service. The dealer is required to put up a margin of two points in cash plus the market value of the security borrowed and to pay an interest charge approximately the same as that which applies to the borrowing of money. That is, if a \$1,000 bond is borrowed, he puts up \$1,020 and pays interest on \$1,000 at $1\frac{1}{4}$ per cent per annum (1949). This operation is analogous to the lending of stock by brokers to other brokers whose customers have made short sales in the stock market.

INVESTORS IN GOVERNMENT SECURITIES

No other investment in the world even approaches United States securities in breadth of distribution. In addition to the vast holdings of financial and nonfinancial institutions, almost every citizen, directly or indirectly, has an ownership interest in the public debt. Foreign banks, governments, and individuals throughout the world are likewise broadly represented.

Total Federal Securities Outstanding. The question of who owns government securities is more specifically answered in Table 33, which presents a breakdown of ownership on three significant dates: just before the Second World War, the peak of the debt, and a recent date. Several important facts may be noted from the table, as follows:

TABLE 33. ESTIMATED OWNERSHIP OF FEDERAL SECURITIES ON SELECTED DATES, 1940-1949
(In billions of dollars)

Type of owner	June 30, 1940		Feb. 28, 1946		Mar. 31, 1949	
	Amount	Per cent	Amount	Per cent	Amount	Per cent
Commercial banks	16.1	33.2	93.8	33.5	60.7	24.1
Federal Reserve banks.....	2.5	5.2	22.9	8.2	21.7	8.6
Total banks.....	18.6	38.4	116.7	41.7	82.4	32.7
Insurance companies... ..	6.5	13.4	24.8	8.9	21.4	8.5
Mutual savings banks.. ..	3.1	6.4	11.1	4.0	11.6	4.6
Nonbank corporations	2.5	5.2	27.9	10.0	22.1	8.8
Total nonbank institutions.....	12.1	25.0	63.8	22.9	55.1	21.9
U.S. government agencies and trust funds	7.1	14.6	28.0	10.0	37.7	15.0
State and local governments.....	0.4	0.8	6.7	2.4	8.0	3.2
Total governments	7.5	15.4	34.7	12.4	45.7	18.2
Individuals	10.3	21.2	64.6	23.1	68.5	27.2
Total Federal securities	48.5	100.0	279.8	100.0	251.7	100.0

SOURCE: *Treasury Bulletin*, June, 1949, p. 30.

First, individuals have recently become for the first time the largest type of owner. The proportion of their ownership, which now exceeds one-fourth, has risen appreciably since 1946 and is larger than before the war.

Second, holdings of commercial banks, previously the largest type of owner, have recently declined from about one-third to one-fourth of the total. This is largely a result of Treasury policy to minimize the inflationary force of the debt. In 1949, government securities constituted about three-fifths of the total earning assets of commercial banks.

Third, the rise of government agencies and trust funds to a major investment position, accounting for nearly one-seventh of the total is a

TABLE 34. OWNERSHIP OF INTEREST-BEARING FEDERAL MARKETABLE SECURITIES BY TYPES AND BY MATURITIES AS OF MARCH 31, 1949*

(In millions of dollars)

Classification	Total	7,256 commercial banks	562 savings banks	331 life insurance companies	625 fire casualty and marine insurance companies	Federal Reserve banks	U.S. government agencies and trust funds	All other investors
Type of security:								
Bills	11,648	1,774	25	30	52	5,176	151	4,439
Certificates	28,803	8,817	272	63	553	6,887	22	12,188
Notes	3,596	1,799	66	1	104	385	48	1,193
Bonds—bank-eligible	61,803	40,061	2,581	2,069	1,701	9,241	5,356	{ 11,194
Bonds—bank-restricted	49,636	780	8,479	13,682	1,378			
Other bonds	162	12	†	†	1	0	36	112
Guaranteed issues	12	4	1	6	†	0	†	2
Total	155,660	53,247	11,424	15,852	3,789	21,688	5,614	44,045
Call classes due or first becoming callable:								
Within 1 year	49,207	16,152	564	278	816	13,129	49	18,320
1-5 years	42,090	26,812	1,655	1,292	1,025	1,320	1,712	8,274
5-10 years	10,464	6,658	507	519	455	7,239	3,950	{ 1,835
10-15 years	15,238	1,406	3,475	2,770	775			
15-20 years	38,650	2,216	5,222	10,993	718			
Unclassified	12	4	1	6	†	0	0	2
Total	155,660	57,643	11,424	15,852	3,789	21,688	5,564	44,045

SOURCES: *Treasury Bulletin*, June, 1949, p. 31; *Federal Reserve Bulletin*, May 1949, p. 531.

* Banks and insurance companies included in designated headings own about 95 per cent of total government securities held by such institutions in the United States. The remaining 5 per cent of bank and insurance company holdings is included with "all other investors."

† Less than \$500,000.

noteworthy development. A continuation of the steady growth of this sector of demand is probable.

Last, the remaining one-third of Federal securities is distributed among insurance companies, Federal Reserve banks, nonbank corpora-

tions, savings banks, and state and local governments. The proportion held by this group has risen from about one-fourth before the war.

Marketable Federal Securities. For the present purpose the distribution of ownership of marketable Federal securities is somewhat more relevant than the distribution of the total. Such a distribution is presented in Table 34 both by types and maturities. It should first be noted that commercial banks are the dominant type of investor. Their holdings are heavily concentrated in short-term issues, owing to needs for liquidity and value stability. The commercial banks together with the Federal Reserve banks, whose combined holdings constitute the monetized portion of the debt, own approximately one-half of the marketable Federal debt. The category "all other investors" is made up mainly of individuals and business firms not included under other headings. Representing over one-fourth of the total, it is second only to commercial banks. Life insurance companies and savings banks follow in order of importance. Having responsibility for savings, their holdings consist mainly of long-term issues which afford a higher yield.

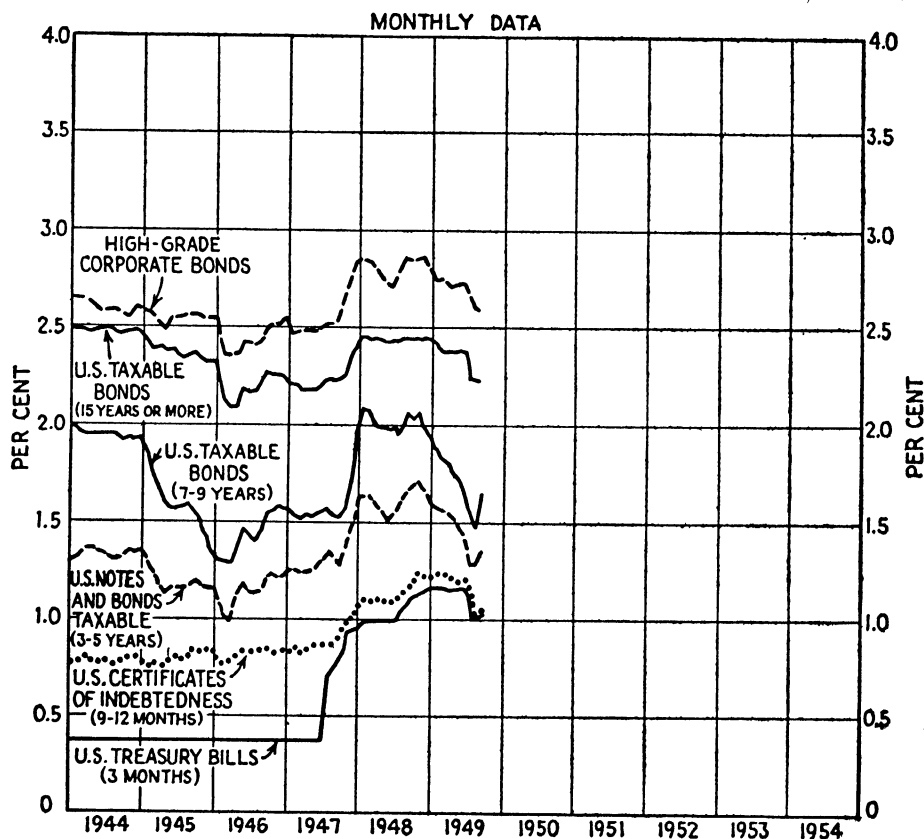
YIELDS ON GOVERNMENT SECURITIES

The Rate Structure. There is no single interest rate that is representative of government securities, but rather a structure of yields in the different sections of the market. This fact is brought out sharply in Chart 16. The lowest rate has applied to Treasury bills and the next lowest to certificates of indebtedness. Both of these issues were pegged by the Federal Reserve at $\frac{3}{8}$ per cent and $\frac{7}{8}$ per cent, respectively, during the Second World War. With the removal of support in the latter half of 1947, the bill rate rose sharply to 1.16 per cent by May, 1949, and the certificate rate rose to 1.19 per cent. This rise was permitted by the Board with the aim of discouraging further inflationary expansion of bank credit. Banks were encouraged to hold short-term securities rather than sell them to the Federal Reserve—a step which would create new reserves for loan expansion and the purchase of long-term securities. The highest yield on government securities has applied to long-term, taxable bonds which the Federal Reserve has supported at the $2\frac{1}{2}$ per cent level or below since 1941. The yields on intermediate maturities have stood between the short-term and the long-term securities. Bank-eligible issues have yielded somewhat less than otherwise similar bank-restricted issues as a consequence of the added element of demand. This difference on the $2\frac{1}{2}$'s of 1967–1972 amounted to 0.17 per cent at the end of April, 1949.

High-grade corporate bonds, owing mainly to the risk factor, have

yielded between $\frac{1}{4}$ per cent and $\frac{1}{2}$ per cent more than long-term government securities since the war. Corporates of lower grade form a rate structure of their own with yields rising as the quality declines.

CHART 16. YIELDS ON UNITED STATES AND CORPORATE SECURITIES, 1944-1949



SOURCE: *Federal Reserve Bulletin*.

FEDERAL DEBT MANAGEMENT

As a result of the dominating position of the Federal debt in the existing financial scene, debt management has become one of the leading national problems. This problem has certain broad aspects and others which are more narrowly technical. The first category includes the broad policies of Congress and the President. What shall be the amount of revenues from taxation? What shall be the amount of Federal expenditures? What shall the budget surplus or deficit be, and hence the change in the Federal debt? The answer to these questions involves the application of a basic philosophy with regard to the role of government in the economic system.

The more technical aspects of debt management relate to the task of the Treasury in administering the debt, the size of which is already determined by the government. Space permits only the barest outline of this great task.

First, with regard to new borrowing, what type of securities shall be issued—bills, certificates, notes, bonds, or special obligations? Shall they be marketable or nonmarketable in form? Shall they be eligible or restricted for commercial bank purchase, and if so, under what conditions? What shall be the terms and conditions of each issue—coupon rate, maturity, callable feature, discount basis, and so on? What methods and organization shall be utilized in marketing the issues? Shall ownership be centered principally in the banks and other financial institutions, or shall it be distributed widely in the hands of the public? What of the proper timing of new offerings? And what steps shall be taken to prepare the market?

Second, with respect to refunding outstanding issues the same questions arise as in the case of new issues, but in a different setting. For example, shall part of the short-term obligations be refunded into long-term obligations, and if so, when? What effect will such a program have on the cost of servicing the debt and on the banking system and others who own most of the short-term obligations?

Third, in a stage of debt retirement what issues shall be redeemed? This question can be answered only after consideration of the objectives of debt-management policy, including the monetary and other economic effects.

Last, whether the problem be one of borrowing, refunding, or debt retirement, first attention must be given to the broad economic influences of the action which is contemplated. Will the effect be that of expanding the stock of money, increasing the national income, raising the price level, and stimulating employment? Or, will the course of action have opposite effects? One of the most important decisions in this regard has to do with the level and structure of interest rates. A low level of rates is an inflationary influence while a high level has deflationary effects.

Wartime Debt Management. During the Second World War the Treasury followed the policy of borrowing to the extent possible from individuals and other noncommercial banking interests. Only the residual amount required was borrowed from the commercial banks and the Federal Reserve banks. The purpose of this policy was to secure the money in the manner least likely to cause higher prices. When securities were sold to individuals and other noncommercial banking interests, no new deposit money was created. Existing money was simply transferred to the government and was subsequently returned

to the public as the Treasury met its obligations. But when the Treasury borrowed from commercial banks, new deposits were created, and when it borrowed from the Federal Reserve banks both deposits and legal reserves were created. These three situations can best be understood by concrete illustrations.

Noncommercial Bank Borrowing. Assume the sale of \$100 million of savings bonds to individuals who pay by check, and the subsequent expenditure of the funds by the Treasury. The accounts of the commercial banks and the Reserve banks would be affected as follows:

COMMERCIAL BANKS

Assets		Liabilities	
		(1) Demand deposits of individuals	—100
		(1) U.S. deposits	+100
(2) Reserve with Federal Reserve banks	—100	(2) U.S. deposits	—100
		(3) Demand deposits of individuals	+100
(3) Reserve with Federal Reserve banks	+100		

FEDERAL RESERVE BANKS

(2) Member bank reserve balances	—100
(2) U.S. Treasury deposits	+100
(3) U.S. Treasury deposits	—100
(3) Member bank reserve balances	+100

NOTE: The numbers beside the items indicate the steps in the process.

Step (1) shows the transfer of deposits to the war loan accounts of the Treasury. Step (2) indicates transfer of the funds to the Federal Reserve banks. Step (3) shows the return of the funds to commercial banks by Treasury expenditures. It is thus evident that no net change in either demand deposits or bank reserves occurs after this cycle of transactions is completed.

Borrowing at Commercial Banks. Next, assume the sale of \$100 million of United States securities to the commercial banks and subsequent expenditure by the Treasury. In this case the accounts of the commercial banks and the Reserve banks would be changed as follows:

COMMERCIAL BANKS

Assets		Liabilities	
(1) U.S. securities	+100	(1) U.S. deposits	+100
(2) Reserve with Federal Reserve banks	—100	(2) U.S. deposits	—100
(3) Reserve with Federal Reserve banks	+100	(3) Demand deposits of business and individuals	+100

FEDERAL RESERVE BANKS

(2) U.S. Treasury deposits. . . .	+100
(2) Member bank reserve bal-	
ances	-100
(3) U.S. Treasury deposits	-100
(3) Member bank reserve bal-	
ances	+100

Step (1) shows the sale of government securities to the banks and payment therefor by crediting the war loan deposit accounts of the Treasury. In step (2) the Treasury shifts the funds to the Federal Reserve banks with a temporary reduction of member bank reserves. Step (3) shows the effects of expenditure of the money by the Treasury. Deposits of business firms and individuals are enlarged and the reserves are returned to the member banks. Required legal reserves are increased by the amount needed to support the new deposits, so that excess reserves—if they exist—are reduced. Thus, the net effect of the series of transactions is the increase of United States security holdings of the commercial banks and the creation of a corresponding amount of new demand deposits.

Borrowing at Federal Reserve Banks. Finally, assume a sale by the Treasury of \$100 million of securities directly to the Federal Reserve banks. In this event the accounts of the banks would be affected as follows:

FEDERAL RESERVE BANKS

Assets		Liabilities	
(1) U.S. securities	+100	(1) U.S. Treasury deposits . . .	+100
		(2) U.S. Treasury deposits . . .	-100
		(2) Member bank reserve bal-	
		ances	+100

COMMERCIAL BANKS

(2) Reserve with Federal Re-		(2) Demand deposits of busi-	
serve banks	+100	ness and individuals	+100

Step (1) indicates the purchase of the United States securities by the Reserve banks by crediting the deposit account of the Treasury. Step (2) shows the effects which follow from expenditure of the borrowed money by the Treasury. Both the deposits and legal reserves of commercial banks are enlarged by the amount of the Treasury expenditure. Thus, this method of finance is the most inflationary of all. Not only are commercial bank deposits created, but additional reserves as well. The latter then provide the basis for a potential multiple expansion of demand deposits, the multiple being dependent on the percentage legal reserve requirement.

Postwar Debt Management. In view of the threefold increase in the stock of money during the Second World War, the country has been subject to a serious threat of an excessive rise in prices. Under these circumstances monetary policy should have been directed toward the prevention of such a development. While broad monetary policies have been perhaps more inflationary than deflationary, the debt-management policies of the Treasury have tended to check the rise in prices. More concretely, the Federal debt-retirement program has been designed to redeem securities owned by the banks rather than those owned by individuals and other nonbank interests. Also, an effort has been made to shift the outstanding debt out of the hands of the banks. Both of these policies have the effect of contracting the stock of money, and hence of checking the rise of prices.

A few concrete illustrations will aid in understanding the precise effects of the various alternatives.

Retirement of Debt Held by Nonbank Interests. Assume that the Treasury retires \$100 million of savings bonds owned by individuals with funds raised by taxation. In this case the effects on the accounts of the commercial and Federal Reserve banks would be as follows:

COMMERCIAL BANKS

Assets		Liabilities	
		(1) Demand deposits of individuals	-100
		(1) U.S. deposits	+100
(2) Reserve with Federal Reserve banks	-100	(2) U.S. deposits	-100
(3) Reserve with Federal Reserve banks	+100	(3) Demand deposits of individuals	+100

FEDERAL RESERVE BANKS

(2) U.S. Treasury deposits	+100
(2) Member bank reserve balances	-100
(3) U.S. Treasury deposits	-100
(3) Member bank reserve balances	+100

Step (1) shows the transfer of deposits by individuals to the Treasury in payment of income taxes. In step (2) the Treasury shifts the money from commercial banks to the Federal Reserve banks. This involves a temporary reduction of both deposits and reserves. In step (3) the Treasury redeems the savings bonds by checks drawn on its balance in the Federal Reserve banks. This returns both deposits and reserves to

the commercial banks. Thus, there is no net change of either deposits or reserves when debt in the hands of nonbank interests is retired by revenues from taxation.

Retirement of Debt Held by Commercial Banks. Next, assume that the Treasury redeems \$100 million of securities owned by commercial banks with revenues from taxation. This would have effects as follows:

COMMERCIAL BANKS

Assets	Liabilities
	(1) Demand deposits of individuals and business. -100
	(1) U.S. deposits +100
	(2) U.S. deposits. -100
(2) Reserve with Federal Reserve banks. -100	
(3) U.S. securities. -100	
(3) Reserve with Federal Reserve banks. +100	

FEDERAL RESERVE BANKS

(2) U.S. Treasury deposits +100
(2) Member bank reserve balances. -100
(3) U.S. Treasury deposits. -100
(3) Member bank reserve balances. +100

Steps (1) and (2) show the transfer of tax revenues to the account of the Treasury with the Federal Reserve banks, and step (3) the redemption of securities. The net effect is a reduction of United States securities and of demand deposits of the commercial banks. That is, deposit money is extinguished by the amount of debt retirement.

Retirement of Debt Held by the Federal Reserve Banks. Now assume that the securities retired by the Treasury are owned by the Federal Reserve banks. The effects would be as follows:

COMMERCIAL BANKS

Assets	Liabilities
	(1) Demand deposits of individuals and business -100
	(1) U.S. deposits. +100
	(2) U.S. deposits. -100
(2) Reserve with Federal Reserve banks. -100	

FEDERAL RESERVE BANKS

	(2) U.S. Treasury deposits.....	+100
	(2) Member bank reserve bal-	
	ances.....	-100
(3) U.S. securities.....	-100	(3) U.S. Treasury deposits..... -100

Again, steps (1) and (2) represent the transfer of tax revenues to the account of the Treasury at the Reserve banks. In step (3) the Treasury checks on this account to redeem securities owned by the Reserve banks. The net effect is a reduction of the Federal debt and in both demand deposits and reserves of commercial banks. Thus, this procedure provides the strongest check of all on rising prices; redemption of securities owned by commercial banks is next in order of strength; and retirement of securities owned by nonbank interests may have no effect whatever on prices.

Shifts of Debt Ownership. Debt management may also exert an anti-inflationary influence by shifting ownership of United States securities from the commercial and Federal Reserve banks to individuals and other nonbank interests, even though the total Federal debt remains the same.

Assume, for example, that the Treasury sells \$100 million of savings bonds to individuals and uses the proceeds to redeem securities held by the commercial banks. The changes would then be as follows:

COMMERCIAL BANKS

Assets

Liabilities

	(1) Demand deposits of Indi-	
	viduals.....	-100
	(1) U.S. deposits.....	+100
	(2) U.S. deposits.....	-100
(2) Reserve with Federal Re-		
serve banks	-100	
(3) U.S. securities	-100	
(3) Reserve with Federal Re-		
serve banks.....	+100	

FEDERAL RESERVE BANKS

(2) U.S. Treasury deposits.....	+100
(2) Member bank reserve bal-	
ances	-100
(3) U.S. Treasury deposits . . .	-100
(3) Member bank reserve bal-	
ances	+100

Steps (1) and (2) show the sale of savings bonds and transfer of the funds to the Treasury account in the Reserve banks. In step (3) the

Treasury redeems securities held by commercial banks by checking on its account in the Reserve banks. This returns the reserves which were temporarily reduced in step (2). The net effect is a reduction of demand deposits, and consequently of required legal reserves.

If securities are shifted from the Reserve banks to individuals the account changes are as follows:

COMMERCIAL BANKS	
Assets	Liabilities
	(1) Demand deposits of individuals..... -100
	(1) U.S. deposits..... +100
	(2) U.S. deposits..... -100
(2) Reserve with Federal Reserve banks..... -100	
FEDERAL RESERVE BANKS	
	(2) U.S. deposits..... +100
	(2) Member bank reserve balances..... -100
(3) U.S. securities..... -100	(3) U.S. deposits..... -100

As in the former example, steps (1) and (2) indicate the sale of savings bonds and transfer of the proceeds to the Treasury's account with the Reserve banks. Step (3) shows the redemption of securities by checking on this account. The net effect is a reduction of both demand deposits and reserves of commercial banks. Required legal reserves are also reduced. Hence, this shift in ownership exerts a much stronger anti-inflationary influence than the preceding one.

It should also be observed that a shift of securities in the opposite direction—from nonbanking interests to the commercial and Federal Reserve banks—has inflationary effects. These effects are far stronger if the shift is to the Reserve banks, since in this case both bank deposits and reserves are created; whereas if the shift is to commercial banks, only deposits are created.

Prospects. What the future holds in store in the field of Federal finance no one is wise enough to foresee. The size of the debt will be determined mainly by the attitude of the American people as reflected in government policies, by international developments, and by the amount of the national income. These will determine the relation between net budget receipts and expenditures. Wise policy unquestionably calls for debt reduction in the prosperous years; otherwise, we shall eventually become the victims of the inequities and the destructive disorganization which accompany serious price inflation. Should debt

reduction prove to be impossible, there still remains the possibility of checking inflationary forces somewhat by shifting the Federal debt from the banks to the public and other nonbank interests.

Review Questions

1. What are some of the problems associated with the Federal government security market?
2. Summarize the development of the Federal government debt in the United States.
3. What are the main features of Treasury bills?
4. Explain why the Treasury bill is a useful instrument of Treasury finance.
5. How do certificates of indebtedness differ from Treasury bills?
6. Describe the features of Treasury notes.
7. Distinguish between series E, F, and G United States savings bonds.
8. What are the components of the special issues of the Treasury?
9. Why has the nonmarketable debt risen materially since the Second World War?
10. Comment on the maturity distribution of marketable Federal securities in 1949.
11. For what reason did the Treasury, in financing the Second World War, make some issues ineligible for bank purchase?
12. Why is the importance of dealers in government securities not generally appreciated?
13. Discuss the functions that dealers in government securities perform.
14. How are government bonds quoted?
15. Why do dealers engage in hedging operations? Explain the benefits of these operations.
16. How do dealers in government securities finance their operations?
17. Interpret Table 33.
18. Study Table 34 and indicate the main facts which it brings out.
19. Study Chart 16 and analyze the changes that have taken place in the structure of yields on government securities.
20. Interpret the action of the Board of Governors in permitting interest rates on Treasury bills and certificates of indebtedness to rise in 1947.
21. What are the functions of Congress, the President, and the U.S. Treasury Department in regard to managing the Federal debt?
22. Outline the task of the Treasury with respect to (a) new borrowing, (b) refunding, and (c) debt retirement.
23. What policy did the Treasury follow during the Second World War with respect to ownership of the new securities offered? What was the purpose of this policy?
24. In what ways have the debt-management policies of the Treasury been deflationary since the war? In what ways inflationary?

Advanced Questions and Problems

1. "The size of the Federal debt is of minor consequence since we owe it to ourselves." Analyze this statement, and show the elements of truth and untruth which it contains. In what ways is the size of the debt related to (a) the price

level, (b) the state of health of the private enterprise system, and (c) the state of health of a democratic form of government?

2. Demonstrate that the sale of \$100 million of securities by the Treasury to the commercial banks creates a corresponding amount of new deposit money.

3. Show that the retirement by the Treasury of \$100 million of securities owned by the Federal Reserve banks has the effect of reducing both demand deposits and legal reserves of commercial banks.

4. In what ways can the Treasury exert a deflationary influence without reducing the amount of the Federal debt?

5. Explain the term "net receipts" which appears in the administrative budget of the Federal government.

6. Under what budgetary conditions does the Federal debt rise? Explain.

7. Distinguish between the administrative budget and the cash budget of the Federal government.

8. Why does a balance in the administrative budget usually mean a surplus in the cash budget of the Federal government?

9. Discuss the economic significance of the cash budget of the Federal government.

10. Bring Chart 16 up to date, and interpret the changes since 1948.

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APPENDIX

THE FEDERAL BUDGET

Under what conditions does the Treasury have to borrow and thereby increase the Federal debt? And when can the Treasury reduce the debt? The answer to these questions will become clear only after giving some consideration to the terms and methods of Treasury accounting. In particular, we shall have to examine the Federal budget and note the distinction between the administrative (bookkeeping) budget and the cash budget.

The Administrative Budget. The nature of the administrative budget can best be explained by an actual illustration. Table 35 presents a summary of the major items in the Federal budget for the fiscal year 1947. Total expenditures of \$42.5 billion compare with the wartime peak of \$100.4 billion in 1945, and with \$9.3 billion in 1940. The budget surplus of \$754 million was the first since 1930, following a long series of deficits during the depression and war periods.

TABLE 35. FEDERAL GOVERNMENT BUDGET FOR THE YEAR ENDED JUNE 30, 1947
(In millions of dollars)

Receipts	
Income and profit taxes	29,306
Excise and miscellaneous taxes.	8,049
Employment taxes	2,024
Customs	494
All other receipts.	4,845
Total gross receipts	44,718
Less: appropriations to Federal Old-age and Survivors Insurance trust fund	1,459
Net receipts.	43,259
Expenditures	
National defense.	17,279
International finance and aid	4,415
Interest on public debt	4,958
Veterans Administration.	7,259
Refund of taxes and duties.	3,050
Other expenditures.	5,545
Total expenditures.	42,505
Budget surplus	754
Total expenditures and surplus	43,259

SOURCE: *Treasury Bulletin*.

"Net receipts" include only "revenue receipts" (mainly taxes) which build up the usable funds of the Treasury without at the same time enlarging its debt obligations. They do not include "nonrevenue receipts" which increase the Treasury cash balance but also incur an obligation. The principal nonrevenue receipt has been from borrowing operations, but another one of substantial size in recent years has been from social security taxes.

Similarly, "total expenditures" in the budget include only "cost payments" which decrease the usable funds of the Treasury without reducing its debt obligations. They do not include "noncost payments" which decrease the cash balance but at the same time reduce an obligation. The redemption of Federal

securities has been the principal noncost payment but the transfer of social-security receipts to the proper trust funds¹ has also assumed importance.

In interpreting the budget, it is important to remember that many of the items do not represent cash transactions, but rather accounting allocations of receipts and expenditures to the fiscal period.

Changes in the Federal Debt. The principal changes in the Federal (gross public) debt take place in response to the relation between the net receipts and expenditures in the administrative budget. If net receipts exceed expenditures, the difference is termed a budget surplus and the debt falls by this amount; if expenditures exceed net receipts, the difference is called a budget deficit and the debt rises by the amount of the deficit. This general statement assumes no change in the general fund balance of the Treasury. A reduction in the cash balance reduces the public debt an equivalent amount below where it would otherwise stand, and a rise in the cash balance increases the debt correspondingly. It also disregards the net receipts or expenditures of the government trust accounts and changes in five other accounts,² all of which normally change by relatively small amounts. Net receipts from these sources permit an equivalent decrease in the public debt, and net expenditures entail an equivalent increase.

To illustrate from the administrative budget and fiscal operations of 1947 (in millions):

Net receipts	\$43,259
Expenditures	42,505
Surplus	754
Deduct: net expenditures of trust accounts, etc.	\$ 548
	206
Add: net decrease in general fund balance	\$10,930
Equals: net decrease in public debt	\$11,136

There are three methods by which the Treasury retires Federal debt. The first is by cash redemption of maturing issues; the second by cash redemption of issues which are callable; and the third by purchases of securities in the open market. Of these the Treasury has largely utilized the first two methods since the Second World War in retiring securities held by commercial banks. Purchases in the open market may be made under two circumstances. First, Federal securities may be purchased for the sinking fund if the average price does not exceed par. Such purchases have been limited since the war owing

¹ Federal Old-age and Survivors Insurance Trust Fund, National Service Life Insurance Fund, Unemployment Trust Fund, Railroad Retirement Account, and others.

² Net increment on gold; net seigniorage on silver; special deposit accounts and miscellaneous funds, net; sales and redemptions of securities of government corporations in the market, net; clearing account.

to the fact that government securities have been supported by the Federal Reserve System at par or above. Second, the Treasury may purchase Federal securities in the open market for the accounts of the various government trust funds and at the same time retire special issues held by them.

The Cash Budget. The general relation between the administrative and cash budgets is shown in Table 36 which presents a summary of cash transactions of the Federal government for fiscal 1947. It will be observed that "total cash operating income" of \$46,637 million appreciably exceeded "total net budget receipts" (\$43,259 million) in the administrative budget. This was mainly because "cash trust account receipts" (social-security funds) were not included in the administrative budget. It will also be noted that "total budget expenditures" (\$42,505 million) in the administrative budget appreciably exceeded "total cash operating outgo" of \$39,978 million. This difference was due largely to the sizable amount of "noncash budget expenditures" (\$6,269 million) in the administrative budget.

TABLE 36. FEDERAL GOVERNMENT CASH BUDGET: SUMMARY OF CASH TRANSACTIONS FOR THE YEAR ENDED JUNE 30, 1947

(In millions of dollars)

Receipts	
Total net budget receipts (from Table 35).....	43,259
Less: noncash budget receipts.....	329
Equals: cash budget receipts.....	42,930
Plus: cash trust account receipts.....	3,707
Equals: total cash operating income.....	46,637
Expenditures	
Total budget expenditures (from Table 35).....	42,505
Less: noncash budget expenditures.....	6,269
Equals: cash budget expenditures.....	36,237
Plus: cash trust account expenditures.....	3,270
Other cash operating outgo.....	471
Equals: total cash operating outgo.....	39,978
Net cash operating income (surplus).....	6,659
Total cash operating outgo and surplus.....	46,637
Debt and Cash Changes	
Net repayment of borrowing.....	19,389
Net cash operating income.....	6,659
Decrease in Treasury cash.....	12,730
	19,389

SOURCE: *Treasury Bulletin*.

As a consequence of these differences the "net cash operating income" (surplus) amounted to \$6,659 million when the "budget surplus" in the administrative budget (Table 35) was only \$754 million. The Treasury was thus in position to retire nearly \$6 billion more debt held by the public than would appear to be possible from a glance at the administrative budget. While the amounts of difference in the two budgets in 1947 cannot be regarded as typical, the "net cash operating income" (surplus) has exceeded the "budget surplus" (or the "net cash operating outgo" has been less than the "budget deficit") by between \$1.5 billion and \$9.0 billion in every year since 1940. Moreover, it is probable that this relationship will obtain for some years to come in view of the net cash receipts in the social-security trust funds and the nature of "noncash budget expenditures." Thus, a balance in the administrative budget usually means a surplus in the cash budget, and a balance in the latter means a deficit in the former.

It should also be pointed out that the "net cash operating income" is available to reduce the total public debt only to the extent that it exceeds the net increase in Federal securities held by government trust accounts and corporations. Net receipts of government trust accounts are included as part of "net cash operating income" even though these receipts are mainly invested in new Federal obligations (special issues). Thus, the "net cash operating income" can be utilized either to reduce the publicly held debt or to build up the Treasury cash balance; it is available only in part to reduce the total public debt.

The opposite is of course true of a "net cash operating deficit." Assuming no change in the general fund balance, the publicly held Federal debt has to rise an equivalent amount. But the total public debt must rise a greater amount as long as the trust accounts and other government agencies continue to enlarge holdings of Federal securities; it would rise a smaller amount than the publicly held portion if the trust funds and agencies dispose of Federal securities.

The Treasury cash operating income and outgo indicate the flow of funds between the public and the government without regard to intragovernmental transactions. The "public" includes business firms, individuals, banks, other financial institutions, and state and local governments. Cash operating income is composed of taxes, fees, retirement and pension payroll deductions, and other receipts from the public of a more or less involuntary nature. Cash raised by Federal borrowing is not a part of cash operating income.

A moment's reflection reveals the large economic significance of the Federal cash budget. In fact it bears much more directly on many economic problems, especially in the short run, than does the administrative budget. The amount of publicly held Federal debt, the quantity of deposit money, national income, the volume of production and employment, the level of prices, Federal taxes, and monetary control are all problems in which the cash budget is relevant.

CHAPTER XXXII

THE BROKERS' LOAN MARKET

While the United States security market has been dominant in recent years, there are three other significant divisions of the short-term open money market: (1) brokers' loans, (2) commercial paper, and (3) bankers' acceptances. The first two of these have been distinctive features of the market in this country for more than a century, and prior to the early 1930's they were the leading subdivisions. The bankers' acceptance market is of much more recent origin, having been created by the Federal Reserve System.

This and the two following chapters are concerned with the features and relations of these three open markets.

Brokers' loans constituted the most important short-term, open money market in the United States prior to the early 1930's. This presented a contrast with other leading countries where there has been little financing of security speculation through the open market. Large city banks have used this market to adjust their reserve position since about 1840. A surplus of primary reserves could usually be loaned there, and normally the loans could be called when funds were needed. It is true that bank reserves invested in call loans became frozen in periods of financial crisis and that there were other defects of the system; nevertheless the positive service of this central money market was large, particularly during the period 1836-1914 when no central bank was in existence.

The brokers' loan market is an adjunct of the organized security markets and particularly of the New York Stock Exchange which handles about two-thirds of the volume of shares traded on organized exchanges. It represents only one part of the security loan field, which also includes loans to customers secured by stocks and bonds. At the beginning of 1949 loans of insured commercial banks to security brokers and dealers were \$1,336 million compared with security loans to individuals and others of \$939 million. Moreover, the greater part of the former was made on a customer basis. This is in marked contrast with the period of active speculation in the 1920's when the bulk of brokers' loans was made through the open market. At the peak in September, 1929, these

loans to member firms of the New York Stock Exchange amounted to \$8,549 million. This compares with \$329 million in April, 1949.

CALL AND TIME LOANS

Brokers' loans are of two standard types: (1) call loans and (2) time loans. A call loan may be repaid by the broker or called by the lender at any time following the day on which the loan is extended. Time loans are made for a definite period, most commonly 90 days, at which time they are repaid or renewed. They are mainly composed of direct customer loans, except in periods of active speculation when money brokers have arranged for a substantial amount of open-market time loans.

Aside from the differences just cited, call and time loans are very similar. The proceeds of both are used mainly for security speculation, and with the exception of maturity, the terms of the collateral loan agreements are essentially the same. The lending bank in both cases is protected against loss by pledged securities which may be sold without notice to the borrower.

Since the call loan is better adapted to the usual needs of both brokers and lending banks, most brokers' loans take this form. The need of a broker for credit fluctuates widely from day to day not only because of the ebb and flow of market activity but also because of his shifting relationship with clients and with other brokers. The call loan also provides a means of adjusting the reserve position of the lending bank. Time loans constituted between 10 and 25 per cent of total brokers' loans during the first three decades of this century, but since the early 1930's they have averaged less than 5 per cent. The diminishing proportion is principally accounted for by the low volume of market activity and of brokers' loans. Under such circumstances the need of the typical broker for credit fluctuates very widely. His own capital and the credit balances of customers are often sufficient to carry operations without resort to bank credit. If borrowing becomes necessary, the call loan basis is usually preferred in order to avoid the payment of interest on unneeded funds.

HOW CALL LOANS ARE MADE

A broker borrows at the banks whenever his own and his customers' funds are insufficient to make payment for securities purchased. Since the early 1930's, practically all brokers' loans have been arranged on a customer basis with the bank or banks at which the broker has kept his deposit account. This has been an outgrowth of the unprecedented

surplus reserves of the banks and of the modest requirements of brokers for such loans. During the 1920's, large use was made of the money desk on the floor of the New York Stock Exchange in arranging call loans. Brokers listed their credit needs with the clerk at the desk, and banks listed the amounts of funds which they wished to lend. With this information before him the clerk then paired brokers and banks chronologically. All other details of actually making the loan—collateral security, delivery of securities, advancing the funds, and so on—were left to the borrower and lender. In most cases the facilities of the Stock Clearing Corporation for delivery of securities and money were employed.

Call loans were also frequently arranged by money brokers during the more active market era. Open-market time loans were always made through money brokers since such loans are not handled at the money desk. A commission of $\frac{1}{32}$ part of the amount of the loan was usually paid by the borrower for the service. Money brokers followed the practice of arranging call loans free of charge in order to get time loan business. In recent years, however, the money broker has almost disappeared from Wall Street.

In arranging a call loan, the broker places the collateral securities in a loan envelope on the outside of which is recorded a description of the transaction, including the names of the borrower and lender, the amount of the loan, the rate, and an itemized list of the securities and their values. The amount of each loan is ordinarily \$100,000 or a multiple thereof, although loans of less than \$100,000 are not uncommon. Banks prefer a diversified list of securities which enjoy a broad and active market. The value of the securities must exceed the amount of the loan by an amount in keeping with the margin requirements of the bank and of the Board of Governors of the Federal Reserve System.

When the loan envelope is prepared, the borrower delivers it to the lending bank directly or through the Stock Clearing Corporation. If the collateral is satisfactory, the bank pays the broker the amount of the loan. Frequently the broker needs credit in order to obtain possession of the securities which at the time may be pledged against another loan. He is in the dilemma of being unable to arrange the new loan without delivering the securities and of being unable to regain possession of the securities without repaying the old loan. This requirement is met by borrowing temporarily from the Stock Clearing Corporation or by arranging an unsecured "day loan" at a bank.

Call loans are made under a "blanket" loan agreement which borrowing brokers file with all the important lending banks. This agreement is designed to give complete protection to the banks. It enables them

to sell the collateral security at any time without notice if the borrower fails to pay any due indebtedness to the bank, or fails to furnish collateral of satisfactory character and value.

Substitutions of collateral are necessarily permitted by lending banks in view of the constantly shifting list of securities in the possession of each broker. This feature of call loans entails an enormous amount of work, since in addition to the physical task it is necessary to see that the exchange of collateral does not weaken the bank's margin of protection.

A call loan may be terminated at any time by either the borrower or the lender. The delivery of securities and the payment of money may be made through the Stock Clearing Corporation or they may be made directly (ex-Clearing House). Most call loans, however, are renewed from day to day at the renewal rate which is posted daily at the money desk.

SUPPLY OF BROKERS' LOANS

Bank Loans to Brokers. The commercial banks are now the only direct source of supply for brokers' loans. As indicated before, the call loan market has long been one of the chief avenues for employment of bank secondary reserves. New York City banks ordinarily lend considerable sums for their own account, and also act as the agents of out-of-town banks that desire to place Wall Street loans. During the period 1925-1929, when rates were very attractive, brokers' loans of out-of-town banks were considerably larger than those of New York City banks. But since the stock market crash in 1929, the out-of-town banks have largely withdrawn their loans, leaving the field almost completely to the latter. The first sharp withdrawal in the fall of 1929 was occasioned by a panicky fear of loss. The out-of-town banks felt no responsibility for preserving order in the market, and the burden was shifted to the New York institutions. The small participation of the out-of-town banks since that time has been a result of the low net yield on brokers' loans and of the fact that the New York City banks desired the loans for themselves. In addition to the low rate itself, the New York City banks charge $\frac{1}{2}$ per cent for the placement of such funds. Thus, for most of the period a net yield of no more than $\frac{1}{2}$ to 1 per cent was obtainable, and few loans could be placed even at this nominal yield.

Before the 1930's a significant relation existed between bankers' balances held by New York City banks and the amount of their brokers' loans. As a general rule, the New York City banks depended largely on the deposits maintained by "outside banks" as a source of funds for

brokers' loans, so that the two series usually moved up and down together. But since that time there has been little correlation between them. Bankers' balances were about three times as large at midyear 1949 as in the late 1920's while brokers' loans declined to about 5 per cent of their former level.

It is also of interest that before the 1930's, out-of-town banks looked upon brokers' loans and deposits maintained with New York City banks as alternative forms of investment for reserve money. New York City banks typically paid about 2 per cent interest for these deposits, except in periods of great ease in the money market. Whenever the yield on brokers' loans dropped below this interest allowance, as in the third quarter of 1924, deposits rose as brokers' loans were called. The period 1928-1929 has already been cited as illustrative of the opposite situation, when the high rates prompted a transfer from deposits to loans. Since the Banking Act of 1933, however, which prohibited the payment of interest on demand deposits, bankers' demand balances have ceased to represent an alternative form of investment. Their tremendous increase has resulted from the plethora of bank reserves combined with the absence of investment opportunities.

Nonbank Brokers' Loans. While brokers' loans of nonbank interests have been unlawful since 1933, their dominant importance as a supply factor in 1928 and 1929 requires some comment. More than half of their amount was made by business corporations and the rest by individuals, investment trusts, and foreign banks. Near the speculative peak on October 4, 1929, these nonbank loans were 78 per cent of total brokers' loans—\$6.6 billion out of \$8.5 billion.¹ But after the stock market break in late September, 1929, they were withdrawn rapidly. This largely shifted the responsibility for brokers' loans to the New York City banks. As a consequence, nonbank loans were regarded as an unstable element that was partly to blame for the market boom and crash, and they were soon eliminated by law.

The Banking Act of 1933 prohibited member banks from acting as agents in the placement of brokers' loans for nonbank interests. Then in 1934, the Securities Exchange Act provided that brokers doing business on a securities exchange may borrow only from a member bank of the Federal Reserve System or from a nonmember bank which agrees to comply with all Federal laws and regulations pertaining to transactions in securities. These two laws, one affecting lenders, the other affecting borrowers, sounded the knell of these loans.

¹ *Monetary and Banking Statistics*, 1943, p. 494.

DEMAND FOR BROKERS' LOANS

Sources. The principal demand for brokers' loans arises from the need to finance customers' margin purchases of stock. A part of such purchases can be financed by the brokers' own capital and the credit balances of other customers. But beyond this point brokers must borrow at the banks. Second, brokers borrow at times to purchase securities for their own account. Last, brokers and dealers borrow to carry securities which have been underwritten but have not yet been distributed to investors.

Factors Determining the Amount of Brokers' Loans. The question next arises: What factors determine the amount of brokers' loans outstanding? On first view the answer may seem to be obvious. Brokers' loans rise when brokers and their customers buy securities beyond the amount of their available cash resources and must therefore borrow to pay in full. This explanation is correct as far as it goes, but further analysis is necessary to unravel the effects of various factors in the background.

TABLE 37. SOURCES AND USES OF FUNDS OF MEMBER FIRMS OF THE NEW YORK STOCK EXCHANGE CARRYING MARGIN ACCOUNTS AS OF DECEMBER 31, 1948
(In millions of dollars)

Uses*		Sources†	
Customers' debit balances (net).	550	Brokers' loans	257
Firm and partners' debit balances	322	Customers' credit balances	698
Cash on hand and in bank . . .	349	Firm and partners' credit balances	33
		Capital accounts	278

SOURCE: *Federal Reserve Bulletin*, June, 1949, p. 699.

* Debits.

† Credits

In Table 37 is shown the sources and uses of funds of member firms of the New York Stock Exchange carrying margin accounts. Funds are derived from the firm itself, from customers who have credit balances, and from lending banks. Aside from cash, the funds are accounted for by debit balances of customers and the firm itself. A customer debit balance is created when a customer buys securities or withdraws cash in excess of his credit balance. A strict balance between the debits and credits does not obtain in the table owing to the omission of minor items on both sides.

The cash account is the immediate index of whether brokers' loans will be increased or reduced. Brokers keep this account at a minimum consistent with a safe cash position. If cash exceeds current requirements, loans are paid off; if cash is expected to be deficient, additional

loans are arranged. Apart from borrowing, cash is enlarged (1) when margin customers deposit cash in their accounts which either increases credit balances or reduces debit balances, and (2) when margin customers sell securities to cash customers with a consequent reduction in debit balances. On the contrary, cash is reduced (1) when margin customers withdraw cash, and (2) when margin customers buy securities from cash customers with a resultant increase of debit balances. Cash may also be enlarged or diminished by deposits or withdrawals by firm members, but owing to the stability of the proprietorship interest over short periods this source may usually be disregarded.

In practice, the most important factor governing the amount of brokers' loans is the movement of securities and cash back and forth between margin customers and cash customers.¹ The crux of the matter is the prevailing view of margin customers concerning the near-term prospect for stock prices. If they confidently expect higher prices, they bid securities away from cash customers, and brokers' loans rise to finance their purchases. On the other hand, if a bearish view prevails, they sell securities to cash customers, and brokers' loans are paid off.

During the active speculation of a bull market, brokers receive large cash deposits both through existing margin accounts and thousands of new ones as public participation grows. Despite this fact, however, brokers' loans rise, since margin customers' net purchases of securities from cash customers far exceed their net deposits of cash. Subsequently, when a bear market develops, brokers' loans decline, despite net cash withdrawals of margin customers, since their net sales of securities to cash customers exceed their net cash withdrawals.

While the foregoing analysis accounts in a mechanical way for changes in the amount of brokers' loans, the relationship of certain other factors to the problem should be considered. More specifically, how are brokers' loans affected by the following: (1) changes in stock prices; (2) the volume of stock trading; (3) short sales of securities; (4) margin requirements; (5) money rates; and (6) the amount of security loans by banks to customers other than brokers?

1. The fact has been stressed that the most important factor determining the amount of brokers' loans is the prevailing attitude of margin speculators concerning the near-term prospect of stock prices. But this says nothing about the effect of *actual* stock price changes which have just occurred. Do they, or do they not, affect the amount of brokers' loans? Most writers on the subject answer this question in the affirmative. They base their conclusion (1) on the close direct correla-

¹ Cash customers consist partly of investors and partly of speculators who operate with funds borrowed directly from their own banks.

tion between brokers' loans and stock prices and (2) on the observation that it requires more loans to carry stocks when prices are high. These reasons fail to prove the point. Close correlation does not in itself establish the lines of causation; both factors may change in response to a common cause in the background, and changes in loans may cause changes in prices rather than the reverse. The second reason begs the question since it assumes the unreal situation that margin customers do not own the shares *before* prices rise, that they buy initially at the higher price level and do not reap the profits produced by the rise.

The truth is that changes in stock prices do not have a direct effect, but that indirectly they exert a strong influence. There is no direct effect in the sense that there is no change in brokers' loans occasioned by a rise or fall of stock prices if other factors remain constant, *i.e.*, if margin customers as a group make no change in their debit or credit balances through security transactions and deposit or withdrawal of cash. Higher prices would leave the net debit balance of customers the same, but would raise the total value of securities in customers' accounts, with a consequent accumulation of profits and a larger margin. This would release potential buying power of customers. Lower stock prices would also leave the net debit balance of customers unchanged, but would lower the total value of securities in customers' accounts, with a consequent creation of losses and narrower margins. Indeed, if the decline is severe enough to cause forced liquidation of margin accounts, a direct effect develops. To be exact, therefore, the proposition must be applied above the limit of forced liquidation.

But this way of stating the case is unrealistic, since it shuts out the actual forces at work in a dynamic market situation. Is it reasonable to suppose that the attitudes and actions of margin speculators and investors remain the same after a 10 per cent rise in the market? If margin speculators on balance interpret the rise as only the beginning of a strong upward movement, they will largely use their augmented buying power to purchase more stocks from investors. In addition, the belief in the upward movement may spread, so that new margin accounts are opened and are employed well beyond a cash basis. Under such conditions brokers' loans would rise. Moreover, if traders as a group should withdraw a part of their profits, brokers would have to lean still more heavily on the banks.

On the other hand, if margin speculators as a whole interpret the 10 per cent market rise as a bearish signal, the opposite would occur. Speculators would sell to investors and brokers' loans would decline. This general attitude is unlikely except at the end of a bull market.

Falling prices may likewise be either a bearish or a bullish signal.

Usually they are bearish, except when the decline is within the usual corrective limits of an upward movement.

Thus, the effect of stock price changes, apart from the exception indicated on a severe decline, is largely indirect and must operate through the attitudes and actions of the speculative interest.

Since rising stock prices as a rule beget a speculative following they usually are in fact accompanied by increases of brokers' loans. And since falling stock prices ordinarily dry up the speculative interest, they are usually accompanied by decreases of such loans. Stock prices, however, may make important moves upward or downward without appreciable change in brokers' loans. They may rise without an increase, and even with a decrease, in brokers' loans when (1) currency and deposits are used to purchase stock, (2) a shift in preference occurs from bonds and/or commodities to stocks, (3) bank customers' security loans increase, (4) other bank loans and investments expand and the new deposits are indirectly utilized to purchase stock, and (5) an inflow of foreign funds leads directly or indirectly to the purchase of stocks. Under opposite conditions, stock prices may fall while brokers' loans remain the same, or even rise.

2. An erroneous notion is widely held that the volume of security trading is one of the factors governing the amount of brokers' loans. This view arises from the observation that brokers' loans are usually large in periods of active markets and small in periods of market inactivity. The turnover of shares in and of itself, however, has nothing to do with the amount of brokers' loans. In consummating transactions for margin customers, the selling broker gains the cash that the buying broker pays out, so that it remains within the brokerage circle. In practice, the purchase of securities by margin speculators from investors is ordinarily accompanied by increased activity, while the movement of securities from speculators to investors mainly occurs during dull markets. But it is the change in ownership of the securities as between these two groups, rather than the market activity per se, which is the main determining factor.

3. Short sales of stock by margin speculators to other margin speculators do not of themselves affect the amount of brokers' loans. The broker from whom the stock is borrowed receives the cash expended by the purchasing broker, so that he can repay bank loans to offset the additional loans required by the latter. The short-selling broker receives the cash but passes it on for the borrowed stock, so that his loan position remains unchanged. Of course short sales and covering purchases, or the intention of making such transactions, lead to cash de-

posits and withdrawals which in turn cause changes in brokers' loans. But short sales affect loans only indirectly through these channels, and do not necessarily affect them at all.

4. A change of margin requirements does not always affect the amount of brokers' loans, but it is quite likely to do so. A small increase in such requirements made effective at a time when margin speculators are not extended may bring about no change in loans. But if the margin increase should occur when customers are extended, they are forced to sell securities or to deposit more cash, both of which lead to the paying off of brokers' loans. A reduction of margin requirements permits brokers' loans to rise to a higher level if speculators see fit to borrow. But if the incentive to speculate is lacking, a reduction in margin requirements has no direct bearing on the amount of brokers' loans except in so far as certain customers take advantage of the new opportunity to withdraw cash from their accounts. To the extent that this occurs, if at all, brokers must borrow a corresponding amount from banks, other factors remaining the same.

5. The cost of speculative credit undoubtedly has some influence on the amount of brokers' loans, although until a high rate is reached (10 per cent or more) it appears to be a minor influence. If rates should go well above 10 per cent, say to 20 per cent or more, the cost would be viewed as prohibitive by many speculators, even during a rampant bull market. But if speculators confidently anticipate materially higher stock prices, a rate as high as 10 per cent, or even higher under some circumstances, appears to them as a relatively small cost of a handsome profit. At the other extreme, very low rates are incapable of inducing heavy speculation, as witness the decade of the 1930's when call rates averaged below 1 per cent. Of course speculative activity was probably greater than it would have been under the additional handicap of a high cost of credit. In short, the determining factor, rather than rates, is the prevailing view of speculators concerning near-term market prospects.

6. A final factor which may account for changes in the amount of brokers' loans is the give and take between brokers' loans and the security loans of banks to their nonbroker customers. Many speculators prefer to operate directly through their own banks rather than to maintain a brokerage account. Hence, brokers' loans tend to increase or decrease with a purchase or sale, respectively, of securities by margin customers from or to speculators who finance their operations directly at their own bank. At times, therefore, a change in brokers' loans is offset by an *opposite* change in security loans of banks to nonbroker

customers. This does not mean, however, that a change in the latter necessarily affects brokers' loans in this manner, since nonbroker security loans may be increased in order to purchase securities from true investors. In fact, brokers' loans and other security loans of banks move together in their broader sweeps under the common stimulus of speculative credit demand.

SECURITY SPECULATION AND BUSINESS

The organized security exchanges have a constructive purpose in a private enterprise economy, and this purpose can be served only under conditions of a proper volume of speculative activity. The speculative machinery operating at this tempo is beneficial to both investors and corporations in providing a place where buyers and sellers meet and establish fair security values. Without such facilities the modern industrial system could scarcely exist since corporations and investors would have no established means of communication. The speculative markets thus play an essential role in the important capital-raising and capital-distributing processes.

At certain times, however, notably during the period 1928-1929, security speculation has gone far beyond its proper bounds with serious and even disastrous consequences for business. While few people deny the harmful effects of excessive speculation, there is much disagreement concerning the way in which speculation actually disturbs normal business activities.

The most popular view is that security speculation absorbs bank credit and thereby draws it away from business proper. Business suffers by the unavailability and high cost of credit. All, or a large part, of the \$8,500 million of brokers' loans and of an approximately equal amount of security loans of banks to nonbroker customers in 1929 are believed to have been withdrawn from business uses and to have been impounded in the financing of security speculation. Among others, the Board of Governors of the Federal Reserve System held this view in 1928 and 1929, and mainly on this basis adopted a restrictive credit policy.

This view does not, however, bear close scrutiny. A careful analysis of this problem by Professor W. J. Eiteman largely refutes it. In a study covering the period of January 1, 1927, to October 1, 1929, he shows, first, that the funds loaned to brokers were not, for the most part, in the possession of brokers. Members (brokers) of the New York Stock Exchange held cash in banks of less than \$100 million when brokers' loans were \$8,500 million. They had evidently disbursed the

borrowed money to sellers of securities. Second, he establishes that the funds loaned to brokers were not in the main even on deposit in New York banks. Total demand deposits of these banks were but \$6,200 million when brokers' loans were \$8,500 million, and the greater part of these deposits is accounted for by business and individual deposits of a nonspeculative character. Third, he demonstrates that the net flow of funds to New York during 1928 and the first nine months of 1929 was less than \$100 million. The funds sent to New York from the interior were not "drained away" but were largely returned through various channels. Fourth, he shows that the brokers' loan liabilities themselves were concentrated in New York in only a superficial sense, since they "represented liabilities of millions of speculators throughout the nation to repay thousands of lenders also scattered throughout the nation." And last, he concludes that the increase of \$4,000 million in brokers' loans between January 1, 1927, and October 1, 1929, required less than \$100 million additional bank reserves to support them. Loans of more than \$3,000 million were made by nonbanking interests which merely shifted existing deposits from one place to another.¹

For these reasons security speculation does not imprison credit and withhold it from business uses except in a minor way, but instead acts mainly as a credit pump bringing more credit into existence and as a conduit system through which it flows to business uses all over the country. In essence, margin speculators meet business financial requirements by means of brokers' loans advanced by commercial banks. To the extent that net expansion of bank assets occurs, new deposits are created, larger bank reserves must be held, and interest rates tend to rise. But a relatively small expansion of speculative bank deposits is sufficient to mediate a large increase in turnover of shares. The offsetting of stock purchases and sales by the Stock Clearing Corporation, so that each broker makes payment only for the net amount owed on the entire day's transactions, greatly reduces the need for deposits. Also, speculative deposits circulate more rapidly when the market is active with the result that additional speculative transactions can be settled without a large expansion of deposit money.

It is often contended that, despite the high efficiency of speculative deposits, the growth of brokers' loans during 1928 and 1929 was after all largely responsible for the rise of the cost of credit for business uses. This point must be admitted in so far as the new deposits arising from security loans required supporting bank reserves. But the additional

¹ See W. J. Eiteman, *The Security Markets* (New York, The Twentieth Century Fund, Inc., 1935), pp. 302-355.

brokers' and other security loans by banks after 1927 required less than \$250 million of legal reserves. Far more important in causing high rates was the restrictive credit policy of the Federal Reserve System. Between January 1, 1928, and September 7, 1929, the reserve banks sold \$456 million of U.S. government securities and reduced their holdings of bank acceptances by \$203 million. Member banks were forced by these steps to borrow an additional \$442 million at a higher discount rate. The discount rate of the Federal Reserve Bank of New York was raised from 4 to 4½ per cent on May 18, 1928, to 5 per cent on July 13, 1928, and to 6 per cent on August 9, 1929. Thus, the rise in open-market money rates which did not begin until the second quarter of 1928 was mainly in response to the restrictive policy pursued by the Reserve authorities.

The harm to business of excessive security speculation arises not from absorption of credit from business uses, but rather from the disturbances caused by undesirable credit expansion. Security prices become inflated, maladjustments in commodity prices and costs occur, mistakes of business judgment with respect to expansion, production, and inventories become numerous, consumer credit spending is unduly encouraged, and foreign trade and capital movements are deranged. The boom phase of business is extended and stimulated until a severe readjustment becomes inevitable.

CONTROL OF SPECULATIVE CREDIT

While a moderate amount of credit should be available to finance security speculation, it is desirable in order to avoid the harmful effects of excessive speculation just described that this amount be kept under strict control. The reform legislation prompted by the 1928-1929 era places extensive power to this end in the hands of the Board of Governors of the Federal Reserve System. By open-market operations, changes in reserve requirements, and in discount rates the Board can influence the *supply* of bank funds available for security loans. It also can limit directly the amount of security loans of member banks individually or by districts, and it can suspend a member bank from use of the System's credit facilities for disregarding official warnings to refrain from further extension of speculative credit. On the other side, the Securities Exchange Act of 1934 gave the Board control over the *demand* for speculative credit. It may in its discretion raise or lower the margin requirements for speculators and brokers. These requirements are stated as a minimum percentage of the borrower's equity to the current market value of securities pledged as collateral. In other words, the margin

requirement is the difference between the market value (100 per cent) and the maximum percentage of loan value of the securities.

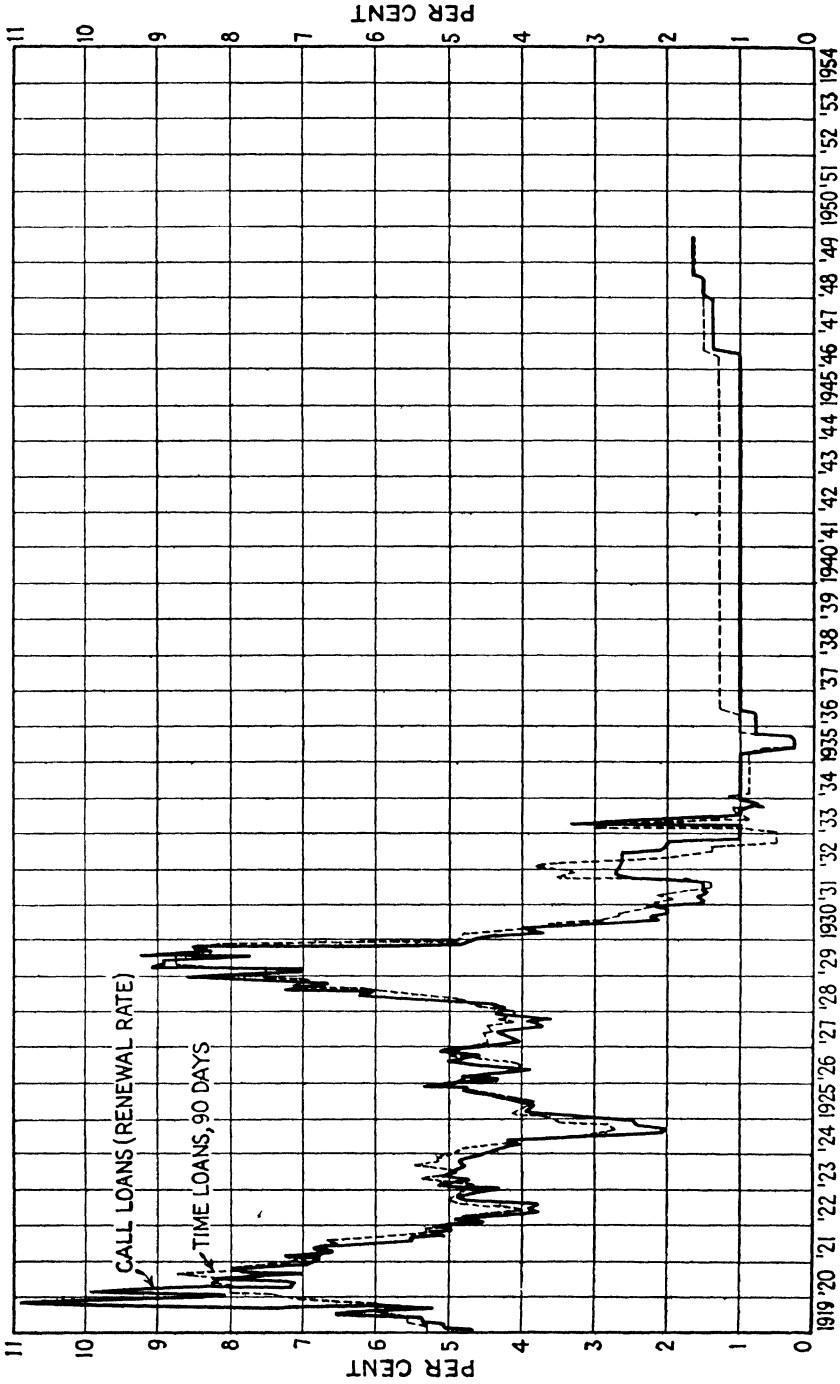
Acting in accordance with the requirements of the Securities Exchange Act, the Board issued Regulations T and U pertaining to security loans, and has subsequently issued a number of amendments. The former, which became effective October 1, 1934, prescribes rules with respect to the amount of credit that may be extended by security brokers to their customers. Regulation U, which became effective May 1, 1936, relates to loans by banks to individuals and brokers for the purpose of purchasing or carrying stocks.

The Board has made considerable use of its power over margins as a method of controlling stock speculation. On nine different occasions between 1934 and 1949 it changed margin requirements, raising them to curb excessive speculation and lowering them to encourage the purchase of shares. For example, during the rise in stock prices which followed the Second World War, requirements were raised in three steps from 40 per cent on February 4, 1945, to 100 per cent on January 21, 1946. Then after the break in prices that occurred in September, 1946, requirements were reduced first to 75 per cent, effective February 1, 1947, and then to 50 per cent, effective March 30, 1949. This regulatory device has considerable merit since by raising margin requirements the Board can restrain the demand for speculative credit without at the same time restricting the general supply of credit and raising the interest rate on business loans.

ILLIQUIDITY OF BROKERS' LOANS

While the brokers' loan market traditionally provided the main facility for the adjustment of the reserve position of banks before the 1930's, this type of loan is not self-liquidating in character. The typical commercial loan of high quality can be repaid when the current production or distribution cycle is completed. It supplies a working-capital need of some business firm. Brokers' loans, however, permit speculators to carry investment securities and usually finance, directly or indirectly, fixed-capital requirements. Such loans can be liquidated by a bank if another bank can be found to take them over, if the collateral securities are sold, or if the borrower repays by selling other assets. In normal times other banks in position to lend can usually be found so that cash can be realized on short notice. But in periods of banking strain, brokers' loans cannot be shifted, nor can the collateral be sold except on a small scale. Funds committed to this market become temporarily frozen. The same is true, however, of most bank assets, including

CHART 17. OPEN-MARKET SECURITY LOAN RATES, 1919-1949



Source: Board of Governors of Federal Reserve System; monthly data.

commercial loans. Bank liquidity in general can be maintained in such times only if central bank or government credit is expanded.

RATES ON OPEN-MARKET SECURITY LOANS

The course of call and time loan rates in comparison with the discount rate of the Federal Reserve Bank of New York since 1919 is shown in Chart 17. Borrowers have usually been able to obtain funds more cheaply on a demand than on a time basis. Evidently the banks have a greater preference for the demand contract than do the brokers. Call loan rates are also more sensitive to changing money-market conditions. They move through a wider range and usually lead time loan rates in both upward and downward changes. In the last half of 1919 and again during 1928 and 1929, call rates drew well above time loan rates. At the other extreme, during periods of easy money—notably 1922, 1924, 1927, and 1931–1947—call rates fell below time rates. Both rates have been higher on the average than the discount rate of the Federal Reserve Bank of New York. Being more sensitive, however, they widen their differential when money is tight, and on occasion they even drop below the discount rate when extremely easy money prevails. Both rates lead the discount rate at turning points.

Review Questions

1. Distinguish between call and time loans of brokers. Why are call loans usually the more important division?
2. Explain how call loans are made.
3. Why have New York City banks made practically all the call loans to members of the New York Stock Exchange since 1930?
4. Comment on the nature and importance of nonbank brokers' loans during the 1920's. Explain how the Banking Act of 1933 and the Securities Exchange Act of 1934 effectively eliminated this type of loan.
5. For what general purposes do brokers borrow?
6. Study and interpret Table 37.
7. "The most important factor governing the amount of brokers' loans is the movement of securities and cash back and forth between margin customers and cash customers." Explain this statement.
8. How are brokers' loans affected by changes in the price of stocks?
9. What relation does the volume of trading in stocks bear to the amount of brokers' loans?
10. How do short sales of securities affect brokers' loans?
11. Explain the influence of margin requirements for security loans on the amount of brokers' loans.
12. What relation does the level of brokers' loan rates have to the amount of such loans?
13. Explain the relation between brokers' loans and the amount of security loans by banks to nonbroker customers.

14. Discuss the harm to business of excessive security speculation.

15. "The Board of Governors of the Federal Reserve System has power to control both the supply and the demand for credit in the security loan market." Develop this statement.

16. Compare brokers' loans and commercial loans from the standpoint of liquidity.

17. Study Chart 17 and interpret carefully the main facts which it brings out.

Advanced Questions and Problems

1. Explain the relation between bankers' balances held by New York City banks and the amount of their brokers' loans before the 1930's. Why has this relation been much less apparent since the early 1930's?

2. "Security speculation absorbs bank credit and thereby draws it away from business proper." Do you agree or disagree with this statement? Explain in full.

3. Bring Chart 17 up to date, and interpret the changes since 1948.

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CHAPTER XXXIII

THE COMMERCIAL-PAPER MARKET

The open market for commercial paper is entitled to a position of equal prominence with brokers' loans in the money market of the United States. For while the flow of funds through the latter has usually been larger, the commercial-paper market is the oldest division; it is also the broadest division aside from U.S. government securities. Moreover, this market is a distinctive feature of the financial system, since no other country possesses an open market in single-name, short-term promissory notes worthy of mention.

The peculiar need for such a market in the United States grew out of the unit system of commercial banking which lacked facilities for the ready transfer of surpluses of banking funds in one section of the country to other areas that were suffering from shortages. England, Germany, France, and other important nations had little need for this type of market owing to their nation-wide, branch banking systems by which transfers of bank reserves could be made quickly and effectively within each of the large banking institutions.

In the broadest sense, commercial paper includes all short-term evidences of indebtedness used in the financing of business operations—bankers' acceptances, trade bills of exchange, promissory notes of business firms that borrow from their own banks, as well as open-market commercial paper. The term is used in this chapter in the last and narrower meaning, *viz.*, the short-term notes of high-credit concerns which borrow indirectly from banks and other lenders all over the country with a commercial-paper house acting as intermediary.

There are in the United States several thousand business enterprises with high credit standing that wish to borrow on the favorable terms afforded by the open market. There are also thousands of banks and other lenders that possess surplus funds from time to time which they wish to invest for short periods. It is the business of the commercial-paper house to bring these two groups together for the benefit of all concerned. Thus, the open market for commercial paper embraces three groups which are considered more fully in subsequent sections: (1) commercial-paper houses, (2) borrowing business firms, and (3) lenders—banks and others.

DEVELOPMENT OF THE MARKET

The modern commercial-paper house and market are the product of a gradual development stretching over a century and a half. It is well established that brokers handling promissory notes and trade bills were operating in a few of the important commercial centers of the country as early as 1790. The rapid expansion of industry, trade, and banking during the early part of the nineteenth century was accompanied by further growth in note brokerage. By 1820, "note shavers" were plying their trade in many of the smaller towns as well as in the larger commercial centers. The broadening importance of the market is indicated by the fact that rates on open-market commercial paper in leading cities were quoted in the *Financial Register of the United States* during the 1830's.

In the period before the Civil War, New York City became the leading market for commercial paper, with Boston and Philadelphia in second and third places, respectively. Smaller markets existed in the thriving smaller cities of the Middle West and South, including St. Louis, Cincinnati, Baltimore, and New Orleans. Dealers in this period with but few exceptions acted as brokers, rather than buying the paper from borrowers outright as does the modern commercial-paper house. The bulk of borrowing was done by textile mills in New England, dry goods jobbers, wholesale dealers in hardware, and wholesale grocers. The buyers were principally banks, although some paper was purchased by wealthy individuals and merchants.

The modern practice of commercial-paper houses of buying notes from borrowers outright, rather than on a brokerage basis, had its beginnings just before the Civil War. It developed rapidly after 1880 and became the prevailing method by 1910. Dealers did not as a rule indorse the purchased notes.

Closely allied to the outright purchase of notes by dealers was the development of more systematic methods of credit investigation. With the acceptance of greater responsibilities and risks, the dealers became more discriminating in their selection of paper. In the vicinity of 1900, the larger dealers created credit departments which kept files of relevant information about borrowing customers. Borrowers were required to present detailed financial statements that were carefully analyzed as a basis for passing intelligently on applications.

THE COMMERCIAL-PAPER HOUSE

Organization. The bulk of the commercial-paper business has been handled in recent years by eight or ten houses. The partnership form of organization prevails although three of the leading dealers are corpo-

rations. All the houses have a main office in one of the leading cities; some have branch offices in addition to the main office; and others use correspondents or sales representatives instead of branches in order to save expense. Correspondents may or may not originate and sell each other's paper. But in the majority of cases, this method is adopted since it enables each house to present a wider range of offerings to banks, as well as to enlarge the market for its own originations.

Most houses combine other operations, such as investment banking and security brokerage, with their commercial-paper business. This has been increasingly true since the early 1930's owing to the restricted amount of commercial paper.

The Paper Handled. Open-market commercial paper is typically the single-name promissory note of the borrower, unsecured by specific collateral and unindorsed by another party. It is usually made payable to "ourselves" at some designated bank, and is indorsed in blank by the maker in order to establish negotiability and make it payable to bearer (see the accompanying specimen).

SPECIMEN OF OPEN-MARKET COMMERCIAL-PAPER NOTE

\$5,000.00	New York, N.Y.	August 4 th , 1948
<i>Six months after date we, promise to pay to the order of</i>		
<i>Ourselves</i>		
<i>Five Thousand Dollars</i>		
<i>at the The National City Bank of New York</i>		
<i>Value Received</i>	<i>The Doe Textile Mills, Inc.</i>	
<i>No. 1</i>	<i>Due Feb. 4th, 1949</i>	<i>By John Doe, President</i>

<i>The Doe Textile Mills, Inc.</i> <i>By John Doe President</i>	Reverse side
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Unsecured, single-name paper has constituted over three-fourths of the total issued in recent years; the remaining one-fourth has been given additional security by indorsement, guarantee, or the pledge of specific collateral.¹ Indorsement by a responsible second party is frequently required in the case of certain textile mills, small closely held corporations, and unseasoned new borrowers. A large part of the paper secured by collateral is accounted for by instalment finance company notes which are usually secured by customer notes receivable.

The denominations of commercial paper are primarily adapted to the requirements of purchasing banks and other buyers. Since between 50 and 75 per cent of the amount issued is in \$5,000 units, this may be thought of as the "primary denomination," with the other denominations as multiples or fractions of this unit. Notes for small banks are often issued for \$2,500, and sometimes for as little as \$1,000. At the other extreme, large banks have occasionally bought in denominations of \$1 million. Only a few notes, however, are made out for less than \$2,500 or for more than \$50,000.

Commercial paper sold by dealers runs for different periods but by far the most common maturity is 6 months. Occasionally firms borrow for as short a period as 30 days or for as long as 18 months, but these are exceptional. Maturities are mainly determined by the working-capital needs of borrowers which are governed by such factors as the period of inventory turnover, the collection period for receivables, and the seasonal character of the business. Firms that have a relatively steady requirement for working capital usually borrow for 6 months or longer in order to minimize dealers' commission charges which are ordinarily $\frac{1}{4}$ per cent of face value irrespective of maturity.

Origination of Paper. The discriminating selection of paper offered by borrowing concerns might well be designated the heart of the commercial-paper business. While dealers do not assume a direct liability by indorsing the notes, they cannot afford to sully their reputations by selling inferior paper. The better houses have on occasion taken up defaulted notes in order to preserve a record of no customer losses. Moreover, dealers would have difficulty in disposing of low-grade paper, since purchasing banks no longer buy paper "by the inch" as in the early days.²

¹ The National Credit Office reports that 93.1 per cent of the borrowing concerns issued "straight" paper in 1948; 3.1 per cent indorsed paper; 2.4 per cent collateral-secured paper; and 1.4 per cent guaranteed paper.

² Even as late as the 1880's it is reported that some bankers bought paper "by the inch." Separating about an inch of notes from the stack, they would tell the dealers: "I'll take that much." From A. O. Greef, *The Commercial Paper Business in the United States* (Cambridge, Harvard University Press, 1938), p. 100.

All this means that a most careful credit investigation must precede the actual purchase of notes from an applicant. The initial hurdle is one of size. The prospective borrower must be large enough to occupy a strong position in its line of business. Firms with net worth of less than \$300,000 and with an annual need for less than \$300,000 of open-market funds are seldom able to borrow. But size alone is not sufficient. It is the job of the credit department to keep an up-to-date file of financial and other relevant information concerning all actual and potential customers. As a background a survey of the industry to which the concern belongs is necessary. This survey covers the character and structure of the industry, nature of the product, past developments, present status, and future prospects. Next, the position of the firm in the industry is examined. This requires various approaches. Much can be learned from a detailed analysis of the balance sheets and operating statements over a period of years in comparison with the records of the whole industry and with those of the strongest firms. An expert analyst can readily form a judgment whether the earnings record, the financial position, the operating efficiency, and the future prospect of the company are satisfactory.

Perhaps an even more important consideration than the foregoing impersonal analysis of the company is the character and integrity of the management. The most fruitful methods here are personal interviews, inquiries from banks and trade creditors with whom the management deals, and reports from specialized credit agencies.

In addition, inquiries are directed to the depository banks of the customer to find out his line of credit, outstanding bank indebtedness, average deposit balance, and past payment record, as well as their opinion of him as a risk. Firms from whom the customer purchases materials and supplies are questioned concerning methods of payment, whether he takes cash discounts, and the nature of past relationships. Competitors of the client, banks, and others who may be in position to know are likewise approached. Newspaper clippings, court records, and other such information are systematically collected.

If the customer meets the exacting credit standards of the house and agreement is reached on rates, commission, and other details, the notes may then be procured and sold to investors.

Methods of Procuring Paper. Commercial-paper houses procure the bulk of their paper by outright purchase. That is, the borrowing firm is immediately paid the face value of the notes less the discount and commission. This method ensures the borrower a specific amount of funds at a definite time. The dealer assumes the risk that he may not be able to dispose of the notes at the purchase price, either because of

a general rise of money rates or of inherent weaknesses in the notes. On the other hand, he may gain by selling the notes for an amount larger than the purchase price plus the normal commission.

A small amount of paper is still sold on a brokerage or consignment basis, mainly the notes of finance companies. By this method the dealer sells the notes at the best price obtainable and remits the proceeds less commission *after* the sale is completed.

A third method, which is a compromise between the first two, is the "open-rate" basis. It is far less common than the outright-purchase method, but more so than the brokerage basis. The dealer advances a substantial amount, usually 90 per cent or more of the face amount, upon receiving the notes. Later on when the notes are sold, the remainder with adjustment for discount and commission is turned over to the borrower. In this way the dealer shifts the risk to the borrower who realizes the gain or stands the loss arising from a favorable or unfavorable market. A variation of this method is sometimes employed whereby the dealer extends limited protection to the borrower by assuming the loss if the rate of discount exceeds a stipulated maximum.

The Dealer's Commission. The standard commission of dealers is $\frac{1}{4}$ per cent of the face value of notes handled, irrespective of the maturity of the paper. The commission is paid by the borrower and is therefore a part of his cost of credit. On a six-months' note the commission would be equivalent to $\frac{1}{2}$ per cent per annum; on a three-months' note to 1 per cent. When possible within the limits of credit needs, borrowers therefore attempt to sell paper with a maturity of six months or longer.

While the standard commission of dealers has been $\frac{1}{4}$ per cent for many years, departures from it are numerous. As a matter of fact, the actual commission charged is largely the result of bargaining between dealers and borrowers and of the competitive situation among dealers and banks. When credit is scarce and interest rates are high, dealers are able to realize a higher commission, sometimes as much as $\frac{1}{2}$ per cent. On the other hand, when bank reserves are excessive and interest rates are low, dealers are forced to shade their commission. The commission then charged "seasoned" borrowers may be as low as $\frac{1}{8}$ per cent, or the paper may even be purchased "flat" (without commission). In the latter event, the dealer's profit would depend on his ability to sell notes for a greater amount than his purchase price, *i.e.*, at a lower discount rate than was applied to the notes when purchased.

At a given time also, the commission charged the various customers of the same house often varies. A higher charge may be applied to notes that are difficult to market because of the credit status of the issuing

concern or the type of paper offered. At the same time, the commission may be shaded for the best names whose paper is in demand and whose bargaining power is strong.

Methods of Financing Operations. Commercial-paper houses draw upon two sources of funds, *viz.*, their own capital and loans from commercial banks. The total amount of funds required varies with their inventory of purchased notes, which in turn depends on the relation between the volume of purchases and sales. When a small amount of note offerings is combined with a strong demand by investors, as in the 1930's, the capital funds of many dealers are sufficient to finance operations without resort to the banks. But when the amount of notes offered is large, dealers sometimes depend on the banks for credit to the extent of several times their own capital.

Loans are usually arranged with large banks in New York City and other leading cities where the dealers keep deposit accounts and where rates are lowest. Most of the loans are on a demand basis, although some dealers borrow a part of requirements on time. Irrespective of maturity, such loans are nearly always secured by some form of collateral, which usually consists of the notes being offered. The banks expect a margin of about 10 per cent of face value for their protection. But some of the strongest houses borrow without any margin, and even on an unsecured basis. Rates charged are among the lowest in the money market in view of the high quality of the collateral security and the short duration of the typical loan. They approximate the renewal rate on stock exchange call loans and the open-market rate on commercial paper itself.

Methods of Selling Paper. Commercial paper is sold mainly by resident or traveling salesmen with headquarters at the main offices of dealers. Salesmen call on banks and other clients located in designated territories. The sales department of the main office also sells a substantial amount by telephone and mail. Use of the telephone is usually confined to offerings of the highest grade paper to the larger banks. Selling by mail is better adapted to the smaller banks. Direct correspondence is employed in some cases where this method holds promise. Otherwise banks are circularized periodically with offering sheets which list and briefly describe the paper for sale. Owing to the strong demand for a small volume of available paper in recent years, the use of traveling salesmen has diminished. An appreciable amount of paper is also sold through branch offices, correspondents, and sales representatives.

It is customary to sell commercial paper with an option period during

which the buyer is given an opportunity to investigate the credit standing of the maker. The most common option is 10 days but it varies between 7 and 17 days, depending on the distance of the buyer from sources of credit information. If upon investigation the buyer wishes to return the paper, he may do so at any time within the limit of the option period. The dealer agrees to repurchase it at the original rate of discount.

OPEN-MARKET BORROWERS

Qualifications of Borrowers. Borrowing through open-market channels is possible for less than 5 per cent of the business firms of the country. The remaining firms for one reason or another do not measure up to the high standards required by commercial-paper houses. These standards are essential in order to preserve the reputation of commercial paper as an almost riskless investment for secondary reserves of banks throughout the nation. Obviously, a textile concern of New England cannot expect a bank on the West Coast to purchase its unsecured note unless its credit standing is unquestioned. Since the general qualifications of borrowers were discussed on page 525, it is only necessary to direct attention to them at this point.

The Demand for Funds. The demand for open-market funds has undergone a marked decline since the First World War, as Table 38 indicates. Between 1920 and 1948 the amount of paper outstanding decreased from \$1,113 million to 287 million.

There are two main reasons for this sharp curtailment of open-market borrowing: (1) the working-capital needs of business declined in relation to sales, and (2) business firms raised working capital more largely in other ways. Business management achieved a marked improvement in inventory turnover during the past two decades. For example, department store sales in 1940 were the same as in 1920, but inventory was 35 per cent lower in 1940.

Open-market borrowing also lost out during the period to competing methods of raising working capital. First, the sale of stocks and bonds became more widely used as a means of securing operating funds. The growth of large enterprise opened the capital markets to a wider section of business which took advantage of the favorable stock market of the late 1920's to reduce its dependence on the banks. Second, the larger finance companies—General Motors Acceptance Corporation, Commercial Investment Trust, and Commercial Credit Company—increasingly sold their notes directly to banks rather than to commercial-paper dealers. In the period 1935–1942 the total amount of outstandings of these companies was a little larger on the average than the entire amount

of outstandings reported by commercial-paper dealers, and at the beginning of 1949 it was 50 per cent larger.¹ Third, direct bank loans were more readily available at favorable rates. This has been particularly true since the bank holiday of 1933. Large surplus bank reserves have existed and city banks have extended loans at rates nearly as low as those in the open market. During the whole period, also, the growth in the scale of banking enabled most business concerns to obtain ade-

TABLE 38. THE DEMAND FOR OPEN-MARKET FUNDS, 1920-1948

Year	Number of borrowers*	Amount of paper outstanding,† millions of dollars	Estimated annual sales by dealers‡	Average annual borrowing per concern,§ thousands of dollars
1920	4,395	1,113	2,671	608
1925	2,754	743	1,783	647
1930	1,674	489	1,174	701
1933	548	95	228	416
1935	654	174	418	639
1940	734	234	562	765
1941	773	317	761	984
1942	703	320	768	1,092
1943	507	182	437	862
1944	425	165	396	932
1945	375	130	312	832
1946	387	167	401	1,036
1947	429	256	614	1,431
1948	424	287	689	1,625

* Figures of National Credit Office, Inc.

† Annual averages of the "outstandings" at the end of each month as reported in the *Federal Reserve Bulletin*.

‡ Estimated on assumption that the average maturity is five months.

§ Computed by dividing estimated annual sales by the number of borrowers.

quate credit from depositary banks.² Last, business corporations were disposed to retain in the business a generous part of current earnings which made them more independent of both the banks and the open market.

Type and Location of Borrowers. Open-market borrowers are characterized more by the great diversity of their business activities than by concentration in any one field. Well-recognized credit standing is

¹ National Credit Office, Inc.

² National banks and many state banks are subject to a legal limit of loans to one borrower of 10 per cent of capital and surplus.

their common denominator rather than engagement in any particular line of business. In fact, it would be difficult to pick out any important type of business that does not continuously or intermittently have representation in the group of open-market borrowers.

The bulk of borrowing is done by concerns that are engaged in manufacturing or domestic trade. Public utilities, railroads, mining companies, farmers, and foreign traders usually raise working capital in other ways. The two leading types of borrowers are concerns in the

TABLE 39. OPEN-MARKET BORROWERS CLASSIFIED BY TYPE OF BUSINESS, 1948

Type of business*	Number of firms	Per cent of total number
Foodstuffs	118	27.8
Textiles	110	25.9
Finance companies, factors, and industrial bankers	76	17.9
Metals and hardware	26	6.1
Chemicals, drugs, paints, fertilizers	19	4.5
Leather and shoes	17	4.0
Machinery and equipment	17	4.0
Lumber and wood products	15	3.5
Paper and publishing	7	1.6
Tobacco products	6	1.4
Public utilities	1	0.2
Clay and glass products; other building materials	1	0.2
Miscellaneous	11	2.6
Total	424	100.0

SOURCE: National Credit Office, Inc.

* Includes manufacturers, wholesalers, and retailers in most fields.

fields of foodstuffs and textiles which accounted for more than one-half of the total number in 1948. Instalment finance companies also make considerable use of the market, and a wide representation of other fields is evident (see Table 39).

The great diversity of open-market borrowers is not confined to types of activity, but extends as well to location. This is indicated in Table 40. While three-fourths of the names are located in the Federal Reserve districts along the Atlantic seaboard and in the Chicago district, every district contained a substantial representation.

TABLE 40. OPEN-MARKET BORROWERS CLASSIFIED BY LOCATION, 1948

Federal Reserve District	Number of Firms
Boston	68
New York	70
Chicago	57
Richmond	39
Atlanta	37
Philadelphia	30
St. Louis	29
Dallas	28
San Francisco	24
Kansas City	17
Minneapolis	14
Cleveland	11
Total	424

SOURCE: National Credit Office, Inc.

Advantages and Disadvantages. Over the years the open market has provided a number of advantages to business firms whose credit standing was sufficiently recognized that commercial-paper houses would purchase their short-term notes. Perhaps most important is the lower cost of borrowing. The situation since the early 1930's has been exceptional in that city banks, having substantial excess reserves, have lent to their customers at rates as low as those in the open market. Periods of high money rates, *e.g.*, 1920, 1928, and 1929, also present exceptions, since at such times banks, being under pressure to take care of their own customers and to repay indebtedness, do not bid strongly for open-market securities. This, combined with larger demands for credit, results in relatively high rates in the sensitive open markets. Incidentally, in figuring the net cost of borrowing in the open market it is necessary for the borrower to include the dealer's commission. He should also allow for any reduction in bank balances that open-market borrowing makes possible.

Closely allied to the first advantage is the fact that open-market borrowing improves the competitive position of a business firm in the credit market. In bargaining with its banks on rates and other loan terms, it can point out a convenient alternative. Moreover, the prestige that goes with open-market borrowing tends to increase the competition among various banks for the borrower's account.

A third advantage to the borrowing firm grows out of financial recognition and publicity received. Recognition as an open-market borrower

is likely to prove valuable when it is desired to sell stocks or bonds for capital expansion. In fact, the commercial-paper house may itself be an underwriter of long-term securities. Moreover, the publicity received is sometimes good advertising for the sale of products.

Finally, many open-market borrowers regard this method as a most desirable supplement to direct bank borrowing. In some cases the 10 per cent loan limit may prevent their depositary bank from advancing the full amount of needed funds. In other instances it may prove more convenient to deal with one commercial-paper house than to borrow from several depositary banks. A program frequently followed is that of alternating bank and open-market borrowing, so that periodic clean-ups can be effected even though some debt may constantly be outstanding. Another practice is to borrow concurrently from both sources, varying the proportions depending upon rates and other terms.

Several objections to open-market borrowing from the standpoint of borrowers are also raised.

First, it is alleged that commercial-paper houses interfere with the management of borrowing firms. But such objective criticism is usually constructive, and for this reason is welcomed by capable corporate officers. Criticisms of operating methods and policies are of course made whenever weaknesses in the position of a client develop. In any event, commercial-paper houses are no more disposed to interfere with management than the banks.

Second, it is contended that concerns that borrow in the open market are subjected to a barrage of inconvenient credit inquiries. This objection is inconsequential for companies that issue audited financial statements as a matter of course.

A third alleged objection is that commercial-paper houses are "fair-weather" friends who desert borrowers in times of emergency. This accusation is of doubtful validity since the best companies can usually arrange for credit needs without much trouble either in the open market or directly at the banks.

A final disadvantage frequently mentioned is that open-market borrowing is likely to encourage overexpansion. This contention is adequately answered by the almost infinitesimal loss ratio of open-market-commercial paper, and by the fact that losses are much lower than on direct bank loans.

Thus, open-market borrowing presents no disadvantages of real consequence to borrowers unless the net cost of credit is higher than on direct bank loans. Indeed, in view of the various advantages cited, business concerns whose standing permits open-market borrowing are well ad-

vised to utilize this source of funds as a general policy for part of their current requirements.

OPEN-MARKET LENDERS

While many types of institution purchase some commercial paper, approximately 95 per cent of it is sold to commercial banks. Other investors include savings banks, insurance companies, trustees of estates, investment companies, educational and other endowed institutions, business corporations, and private investors. The small proportion owned by other investors is accounted for by the short maturities and relatively low yields. They find bonds, mortgage loans, stocks, real estate, and other investment media better suited to their needs.

The nation-wide character of the market is well brought out by Table 41 which gives the amount of open-market commercial paper held by national banks in broad geographic divisions of the country at midyear 1942. Every state was represented with the single exception of Mississippi. The largest market is found among the country banks and the reserve city banks. Large banks in New York City and Chicago have held very little of such paper since 1933, owing to an agreement to purchase no notes yielding less than $1\frac{1}{2}$ per cent. Certain other city banks have likewise withdrawn from the market since they do not want to promote the volume of open-market financing at declining rates in competition with their own loans. This has resulted in a growth in the relative importance of the market among country banks. At the end of 1940 these banks held one-half of the total open-market commercial paper of national banks even though their assets were less than one-third of the total.

TABLE 41. OPEN-MARKET COMMERCIAL PAPER HELD BY NATIONAL BANKS
CLASSIFIED ACCORDING TO GEOGRAPHIC DIVISIONS OF THE UNITED
STATES, JUNE 30, 1942
(In millions of dollars)

Geographic Division	Amount
New England states	74.9
Eastern states	55.6
Southern states	29.4
Middle Western states	73.4
Western states	25.7
Pacific states	8.3
Total United States	267.4

SOURCE: Comptroller of the Currency, *Abstract of Reports of Condition of National Banks*, No. 210, p. 12.

In the past the tendency has been for large city banks to hold a smaller part of the total outstanding commercial paper when their reserve

position is under pressure and money rates are high and to hold a larger proportion when their reserves are abundant and interest rates are low. For example, during the high-rate period, 1928–1929, the city banks owned on the average about 45 per cent of the total, while in the low-rate period, 1930–1933, they owned approximately 70 per cent of the total. Conversely, the country banks held 55 per cent in the first period and 30 per cent in the second. This relationship arises from the greater sensitivity of the city banks to changing credit conditions. But the period of superabundant reserves since 1933 provides an exception to the rule. As already indicated, many of the large city banks boycotted the open market in an effort to preserve the rate level and the volume of direct loans, instead of magnifying their competition with dealers by bidding for paper.

For a comparison of the short fluctuations of the commercial-paper rate with other rates in the money market the reader is referred to Chart 18, page 551. Being less subject to arbitrary conditions created by the Treasury, the Federal Reserve System, or agreements among large banks, this rate probably reflects the true money-market situation more faithfully than any of the others. Along with brokers' loan rates, it is normally higher and more sensitive to changes than the discount rate of the Federal Reserve Bank of New York.

SIGNIFICANCE OF THE MARKET

Despite its relatively small size the open market for commercial paper is an important element in the financial system of the United States. This was more conspicuously true before the establishment of the Federal Reserve System which contributed greatly to the mobility and availability of credit throughout the country. But it is still true, and will doubtless continue to be so for many decades to come. For the importance of this market should be measured by the *flow* of funds through it rather than by the amount of paper outstanding at one time, and perhaps even more by its contribution to the most effective use of credit resources.

The market affords a facility, nation-wide in scope, through which borrowers of high standing and banks with loanable funds are brought into contact. The actual borrowers gain from the fact that they can usually obtain funds at lower rates and often realize other important benefits as well. Other borrowers benefit from the competition of the open market even though they actually borrow directly from their own banks. The beneficent effects arising from its constant pressure on semimonopolistic credit situations are seldom appreciated by borrowers.

Banks and other investors are rewarded in that the market provides an investment which is safe, liquid, and at the same time yields a comparatively high return. The large city banks often denounce the open market as an unfair competitor taking away business and forcing down rates on loans. But such an outlook is exceedingly shortsighted with respect to the larger welfare of the banks. The business of banking carries such a heavy public responsibility that the banks must face the alternatives of meeting legitimate credit needs at competitive rates or of submitting to more government intervention. In a very real sense, whether or not they realize it, the open market is one of their best friends, since it exerts a strong influence in the direction of a healthier banking system.

The general public benefits by the contribution of the open market to the effective employment of the credit resources of the country. The business operations of many enterprises and areas have been stimulated by the availability of credit at reasonable rates, and at the same time the areas from which the funds were transferred have been protected from a temptation to overexpand. That is to say, the nation-wide equalizing influence of the market on the distribution of credit and hence on the rate of interest has contributed over the years to the economic welfare of all.¹

Review Questions

1. Define the term "open-market commercial paper."
2. Why has there been a peculiar need for an open market for commercial paper in the United States?
3. Summarize the development of the open market for commercial paper.
4. State the general function of the commercial-paper house.
5. Describe the nature of open-market commercial paper, including the form of instrument, denominations, and maturities.
6. Outline the nature of the credit investigation carried out by a commercial-paper house before purchasing paper offered by a borrowing business firm.
7. What different methods of procuring open-market commercial paper are employed?
8. How is the commission of a commercial-paper house determined?
9. Explain the methods by which commercial-paper houses finance their operations.
10. What methods are utilized in selling commercial paper?
11. Study Table 38 and explain why the amount of commercial paper outstanding has declined so sharply since the 1920's.

¹ In the preparation of this chapter, the author has drawn heavily on the excellent study by A. O. Greef, *The Commercial Paper House in the United States* (Cambridge, Harvard University Press, 1938), 451 pp.

12. Study Tables 39 and 40 and indicate the main facts which they reveal with regard to the types of borrowers and their location.

13. What advantages has the open market provided certain businesses? What objections to open-market borrowing are sometimes raised?

14. Discuss the types and locations of buyers of open-market commercial paper.

Advanced Questions and Problems

1. Study Chart 18, page 551, and compare the movements of the commercial-paper rate with the Federal Reserve bank discount rate and the rate on bankers acceptances.

2. Discuss the economic and financial significance of the open market for commercial paper. Why is the amount of paper outstanding an inadequate measure of this market?

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CHAPTER XXXIV

THE BANKERS' ACCEPTANCE MARKET

The bankers' acceptance market is the adopted child of the money-market family in the United States. Unlike the brokers' loan market and the commercial-paper market, both of which are indigenous products of more than a century of development, this market was consciously created as a part of the banking reform program when the Federal Reserve System was established in 1914. It was patterned very largely after the London bill market which represented an evolutionary development of two centuries in the financial center of the world.

The bulk of international trade, whether within or without the British Empire, was financed through London in terms of the pound sterling which was recognized as the principal international money unit. The sale of silk to the United States by Japan or the sale of coffee by Brazil to Sweden, for example, usually gave rise to a sterling bill in London even though the goods never touched British shores.

Briefly stated, the theory of the bankers' acceptance is as follows: A borrower may under certain circumstances obtain short-term credit by arranging for his bank to "accept" a time draft upon it. The bank stamps its official "accepted" across the face of the draft and thereby converts it into a bankers' acceptance. The instrument, now being a bank obligation, may be sold to an acceptance dealer who in turn may sell it to another bank with surplus funds to invest. Before the acceptance matures, the borrower puts the bank in funds to redeem it in accordance with the agreement. Thus, the borrower is enabled indirectly to borrow at a low rate in the open market from other banks with surplus funds on hand.

The usefulness of the bankers' acceptance is most clearly indicated in foreign trade transactions where the credit of the buyer, the laws and customs of trade, and the exchange value of the foreign money may all be unknown quantities to the seller. According to classical theory, each acceptance should be tied to a specific underlying transaction, the completion of which produces funds for payment. Actual practice, however, has drifted somewhat away from this ideal through the use of acceptance credits for domestic and foreign storage of commodities and for the creation of dollar exchange. The German acceptance credits of

the late 1920's, in particular, which were later funded into the "Stand-still" agreements, were divorced from any specific goods transactions.

ESTABLISHMENT OF THE MARKET

For various reasons, there was general agreement among the founders of the Federal Reserve System that the new banking machinery should include a bankers' acceptance market. It was felt (1) that the great actual and potential importance of New York City as a center of international commerce called for a correspondingly important financial position; (2) that the foreign trade of the United States would be encouraged by such a market; (3) that our banks would enjoy a part of the commission previously collected by banks in London and other world centers; (4) that an active bankers' acceptance market would provide a short-term, liquid security superior to stock exchange call loans for the investment of secondary reserves; (5) that such a market would be a valuable aid to the Federal Reserve authorities in the control of credit; (6) that an acceptance market would tend to equalize interest rates in the financial centers of the world as well as domestically; and (7) that the greater mobility and availability of credit, along with the foregoing other advantages, would contribute to the economic welfare of the entire country.

The task of establishing a bankers' acceptance market was a major one since it was necessary to start from scratch. National banks were not empowered by the National Bank Act to accept time drafts, so that the small amount of acceptance business was confined at the time to a few private and state-chartered banks. It was therefore necessary to encourage the development of all the groups and institutions essential to such a market: (1) acceptance banks and houses; (2) borrowers who would use this method of raising short-term credit; (3) investors who would purchase acceptances; and (4) dealers who would perform the function of intermediaries between the buyers and sellers. Also, it was necessary to encourage the establishment of foreign branches of American banks and American branches of foreign banks in order that adequate facilities would be available to finance international trade. Furthermore, it was essential to provide for special support to dealers and the infant market by the Federal Reserve banks.

The Federal Reserve Act conferred the needed legal powers for the development of the new market. National banks were enabled under certain restrictions to accept time drafts, and the Federal Reserve banks were permitted to rediscount or purchase eligible acceptances. The legal framework, however, was only a prerequisite to the actual development of the market. It could not of course blossom forth overnight in

mature form, but must evolve gradually over a considerable period of time.

THE ACCEPTING BANKS

Member Banks. The operations of accepting banks are restricted in a number of respects by the Federal Reserve Act and the rulings of the Board of Governors. Member banks of the Federal Reserve System are permitted to accept time drafts arising out of (1) foreign trade, (2) storage of readily marketable staples, (3) domestic shipment, and (4) dollar exchange.¹ The maturity is limited to six months for the first three classes and to three months in the case of dollar exchange drafts. No specific security is required in the cases of foreign trade and dollar exchange acceptances but unless adequate security is furnished, a bank is not allowed to accept drafts for one interest in excess of 10 per cent of its capital and surplus. Security in the form of warehouse receipts or shipping documents is required for classes 2 and 3 above.

Unless a bank has a special permit from the Board of Governors, it cannot accept drafts in classes 1, 2, and 3 to a total amount in excess of one-half of capital and surplus. With such a permit, however, a bank can accept up to the amount of capital and surplus. With or without a special permit, the amount of dollar exchange acceptances of a bank is restricted to one-half of capital and surplus, in addition to classes 1, 2, and 3. Thus, with a special permit, which practically all banks that grant acceptance credits possess, a bank may legally have acceptances outstanding to the maximum amount of $1\frac{1}{2}$ times its capital and surplus, provided one-third of the total consists of dollar exchange credits.

Specialized Acceptance Institutions. In addition to the member banks there are some nonmember banks and a few specialized acceptance institutions which grant acceptance credits, but the amounts involved are a small part of the total. Taken together, all the specialized acceptance institutions have accounted for between 5 and 11 per cent of the total acceptances since 1922. During the 1920's their proportion approached the upper limit of this range, but during the 1930's it declined to the vicinity of the lower limit.

While all national banks and most state banks are permitted by law to grant acceptance credits, only the larger city banks have importantly entered this field. The number of special permits of the Board of Gover-

¹ The original Federal Reserve Act permitted member banks to grant acceptance credits only in financing imports and exports. Power to accept drafts drawn to finance domestic shipments, storage of readily marketable staples, and dollar exchange was extended by an amendment to the Act on September 7, 1916. A gradual liberalization in the rulings of the Board of Governors also widened the field for dollar acceptance credits.

nors enabling member banks to accept up to the amount of capital and surplus was approximately 150 at the end of 1947, or only about 2 per cent of all member banks.¹ Every Federal Reserve District was represented, but the seaboard districts, as would be expected, accounted for most of the permits. The origination of acceptances is highly concentrated in the large banks of New York City, Boston, San Francisco, and Los Angeles. The New York Federal Reserve district alone accounts for between 60 and 70 per cent of the acceptances outstanding.

Commission for Accepting Drafts. When a bank originates a bankers' acceptance, it underwrites the credit of the borrower and thereby permits him to tap the open-market reservoir of funds. Moreover, in so doing the bank incurs certain definite expenses and assumes a risk of future loss for which a reasonable charge is justified. In practice, this charge has ranged between $\frac{1}{2}$ per cent and 2 per cent per annum. The prevailing rate at present (1949) is $1\frac{1}{2}$ per cent. This applies irrespective of the type of underlying transaction, except that the commission is split when the financing is arranged by foreign correspondent banks. The commission is usually paid by the borrower when the draft is accepted.

DEMAND FOR ACCEPTANCE CREDIT

The demand for dollar acceptance credits arises in financing the following activities: (1) imports into the United States; (2) exports from the United States; (3) domestic shipments; (4) domestic storage; (5) shipments between foreign countries; (6) storage of goods in foreign countries; and (7) dollar exchange. Thus, acceptances are used primarily to finance the movement of goods, especially in international trade, and the storage of staple commodities. They are therefore largely noncompetitive with open-market commercial paper, which is used mainly to raise working capital for domestic manufacturers and distributors. The two methods of financing are most likely to compete in the fields of domestic storage and shipment. Both methods experience more competition from direct bank loans than from one another. Attention is called to the accompanying specimens of acceptances arising for different purposes.

The total amount of outstanding acceptances rose steadily between 1914 and 1920, reaching a peak of \$1.1 billion in the latter year. Part of this increase resulted from the sharp rise of prices during and after the

¹ The Board of Governors may grant a special permit, provided the surplus of the member bank is 20 per cent or more of capital stock, its condition is satisfactory, and conditions in the community warrant such action.

SPECIMENS OF BANKERS' ACCEPTANCES

D 326			MONTevideo, URUGUAY		May 1, 1946
NINETY DAYS					
Pay to the order of		OURSELVES		SIGHT	
NO				\$ 000,000.00	
Value received and charge the same to the account of:				Dollars	
To: THE FIRST NATIONAL BANK OF BOSTON, MASS.		SIGNED		SIGNED	
Payable at:		BANK OF URUGUAY			

D 326			SANTOS, BRAZIL		May 1, 1946
NINETY DAYS					
Pay to the order of		OURSELVES		SIGHT	
NO				\$ 000,000.00	
Value received and charge the same to the account of:				Dollars	
To: THE FIRST NATIONAL BANK OF BOSTON, MASS.		SIGNED		SIGNED	
Payable at:		X. Y. Z. COFFEE CO.			

D 326			Boston, Mass., U.S.A.		May 1, 1946
NINETY DAYS					
Pay to the order of		OURSELVES		SIGHT	
NO				\$ 000,000.00	
Value received and charge the same to the account of:				Dollars	
To: THE FIRST NATIONAL BANK OF BOSTON, MASS.		SIGNED		SIGNED	
Payable at:		A. B. C. COTTON CO.			

D 326			Boston, Mass.		May 1, 1946
NINETY DAYS					
Pay to the order of		OURSELVES		SIGHT	
NO				\$ 000,000.00	
Value received and charge the same to the account of:				Dollars	
To: THE FIRST NATIONAL BANK OF BOSTON, MASS.		SIGNED		SIGNED	
Payable at:		Q. R. MACHINE CO.			

First World War, but in the main the growth was real. A substantial decline occurred during the depression of 1921, followed by another

TABLE 42. BANKERS' ACCEPTANCES OUTSTANDING IN THE UNITED STATES
CLASSIFIED BY USE OF FUNDS, 1924-1949

(In millions of dollars)

End of year	Total	Imports into United States	Exports from United States	Domestic shipment and storage	Foreign storage and shipment	Dollar exchange
1924	821	292	305	200	.. . .	23
1925	774	311	297	129	17	19
1926	755	284	261	145	40	26
1927	1,081	313	391	218	131	28
1928	1,284	316	497	190	243	39
1929	1,732	383	524	308	441	76
1930	1,556	221	415	306	561	52
1931	974	159	222	267	296	31
1932	710	79	164	230	228	10
1933	764	94	207	277	182	4
1934	543	89	140	193	119	2
1935	397	107	94	110	84	2
1936	373	126	86	83	76	2
1937	343	117	87	78	59	2
1938	270	95	60	57	56	3
1939	233	103	39	54	22	16
1940	209	109	18	44	27	10
1941	194	116	15	48	11	4
1942	118	57	9	38	14	†
1943	117	66	11	30	9	†
1944	129	86	14	25	3	†
1945	154	103	18	26	7	†
1946	227	162	29	29	7	†
1947	261	159	63	25	11	3
1948	259	164	57	25	12	1
1949*	204	119	46	20	17	2

SOURCE: Board of Governors of the Federal Reserve System.

* April 30.

† Less than \$500,000.

period of rapid growth that carried the total volume to a new peak of \$1.7 billion at the end of 1929. Following this, the amount outstanding soon dropped to the lowest level since the First World War, first under

conditions of depression and then of war. The market has shown few signs of revival since the war (see Table 42).

Financing International Trade. It is evident from Table 42 that the greater part of dollar acceptances arises in the financing of international trade. This source accounted for about two-thirds of the total before the Second World War, and since the war it has given rise to approximately four-fifths. While exports were a more important source than imports in the years 1927–1934, the reverse has since been true. Since the use of acceptances in financing exports, imports, and shipments between foreign countries was described in Chapter XXVI, there is no need for repetition.

Financing Domestic Shipment and Storage. The Federal Reserve Act as amended September 7, 1916, authorizes member banks to accept drafts financing (1) the domestic shipment of goods, provided shipping documents securing title are attached at the time of acceptance; and (2) the storage of readily marketable staples in an approved warehouse if the bank is secured by warehouse receipts. In both cases the maturity of the acceptance is limited to six months.

Some notion of the importance and changes in volume of domestic bank acceptances may be gained from Table 42. During the entire period 1924–1949, they represented on the average about one-fifth of total outstanding acceptances. Like all the other categories, they reached their peak in 1929 and since then have sustained a sharp contraction.

Before 1929 the Board of Governors observed a strict interpretation of the term "domestic shipment." It was held that the life of acceptances in this category should be based on the period of time required for shipment and that they should not be used to finance general working-capital needs.¹ But in 1929 the Board reversed its previous position. It ruled that acceptances growing out of a domestic shipment are eligible as far as maturity is concerned if the period is consistent with the prevailing credit term of the particular business.²

In the administration of the use of bankers' acceptances to finance the storage of goods, it fell to the Board of governors to define the term "readily marketable staple," which it did as follows: "an article of commerce, agriculture, or industry of such uses as to make it the subject of constant dealings in ready markets with such frequent quotations of prices as to make (a) the price easily and definitely ascertainable and (b) the staple itself easy to realize upon by sale at any time."³ Cattle,

¹ *Federal Reserve Bulletin*, 1920, p. 1301.

² *Ibid.*, 1929, p. 811.

³ *Ibid.*, 1919, p. 652.

coal, cotton, cottonseed, cotton yarns, flour, potatoes, sugar, and wool have been held in particular cases to constitute readily marketable staples while automobiles, automobile parts, tires, sacramental wine, and whisky have been denied that status. This list should be regarded as merely illustrative since the Board has made no effort to prepare an exhaustive classification.

The Board has also established a number of guiding rules with respect to the eligibility for acceptance of drafts secured by warehouse receipts, the most important of which are the following: (1) the goods must be "held in storage pending a reasonably immediate sale, shipment, or distribution into the process of manufacture. A draft which is drawn to carry goods for speculative purposes . . . is not eligible for acceptance."¹ (2) A draft is ineligible if the real purpose of the acceptance credit is to furnish working capital.² (3) The warehouse receipt must be issued by a warehouseman independent of the borrower. The borrower cannot have control over the goods or have access to them, except for purposes of inspection when accompanied by the warehouseman.³ (4) "A draft drawn abroad, payable in the United States in dollars and secured by a warehouse receipt covering readily marketable staples stored in a warehouse located in a foreign country, is eligible for acceptance by a member bank"⁴

Commodities Financed. Most bankers' acceptances arise in financing the shipment and storage of raw materials. Cotton normally accounts for about one-fourth of the volume, followed in order by sugar, grains, and coffee. A wide variety of other products is also represented, including hides, rubber, iron and steel, wool, copper, tobacco, silk, automobiles, lard and meats, and lumber.

Advantages to Borrowers. Definite advantages are enjoyed by borrowers whose activities can be financed by means of dollar acceptances. American exporters and importers are able to avoid the risk of exchange fluctuations, and usually they are able to finance their operations more economically and conveniently in New York than in London or another foreign money market. Bankers' acceptance rates in New York are often lower, but even if they are not an extra commission charge by the foreign bank is avoided.

In the domestic field, borrowers realize the benefit of both lower rates and greater availability of credit. By means of the acceptance market

¹ *Ibid.*, 1919, p. 858.

² *Ibid.*, 1922, p. 52.

³ *Ibid.*, 1918, pp. 31, 634; 1926, p. 666.

⁴ *Ibid.*, 1919, p. 740.

the funds of large commercial and central banks can be used to finance the movement and storage of raw materials and other products throughout the country. This new facility performs a *direct* service to many borrowers in supplementing local bank credit at low rates, and it affords an *indirect* service to a still larger number by offering a competitive alternative to direct bank loans for bargaining purposes.

INVESTORS

The market for dollar acceptances has been a highly concentrated one. Over the years most of the bills have been bought by one of three groups: (1) the Federal Reserve banks, (2) foreign central and commercial banks, and (3) large city commercial banks. This presents a contrast to open-market commercial paper which has enjoyed a nationwide market among all sizes of banks.

Federal Reserve Bank Holdings. The Federal Reserve banks as sponsors of the dollar acceptance market have undertaken to give it a large measure of support. As a matter of policy they have posted buying rates at which they have stood ready to purchase all the prime, bank-indorsed acceptances offered to them.¹ Prior to the abnormal money market ushered in by the 1930's, the buying rates posted were low relative to other rates in the open market, so that the Reserve banks usually owned between 25 and 50 per cent of all outstanding acceptances (see Table 43). This meant that they offered a higher price (lower rate of discount) for that part of the acceptances than other investors. The extent of this artificial support by the Reserve banks was thus gauged by the buying-rate schedule which determined the amount of outstanding acceptances held by them.

Since 1934 the amount of acceptances owned by the Reserve banks has been negligible, owing to the ability of the smaller market to stand by itself. With large amounts of excess reserves, the city banks have

¹ The buying rate schedules quoted in the *Federal Reserve Bulletin* on selected dates were as follows:

Days until maturity	Rate, per cent		
	March 21, 1929	Aug. 24, 1946	May 31, 1949
1-45	5¼	¾	1½
46-90	5⅜	¾	1½
91-120	5½	⅞	1⅝
121-180	5⅝	1¼	1¾

TABLE 43. OWNERSHIP OF BANKERS' DOLLAR ACCEPTANCES, 1925-1949
(In millions of dollars)

End of year	Total	Held by accepting banks		Held by Federal Reserve banks		Held by others
		Own bills	Bills bought	Own account	Account of foreign correspondents	
1925	774	38	55	372	70	239
1926	755	35	42	378	59	241
1927	1,081	58	47	390	229	356
1928	1,284	27	49	488	325	396
1929	1,732	59	132	391	548	603
1930	1,556	90	282	328	439	417
1931	974	131	131	305	251	156
1932	710	234	380	4	41	62
1933	764	223	219	127	4	190
1934	543	243	254	†	1	46
1935	397	183	185		†	29
1936	373	151	164		.....	57
1937	343	147	131		2	63
1938	270	121	91	...	†	58
1939	233	105	70	.....	.....	57
1940	209	100	67		.....	42
1941	195	92	54		.....	49
1942	118	60	34	..	.....	25
1943	117	52	38		.....	27
1944	129	44	50		.....	35
1945	154	64	48		.....	42
1946	227	74	94	..	.....	58
1947	261	88	109		.....	64
1948	259	71	76	..	.....	112
1949*	204	59	28	..	.....	116

SOURCE: *Federal Reserve Bulletin*.

* April 30.

† Less than \$500,000.

bid so strongly for the limited supply of acceptances that the open-market rate has declined below the Reserve bank buying rates (see Chart 18, page 551). It should not be inferred from this, however, that the acceptance market has come of age and that it will never again re-

quire the support of the Reserve banks. When and if more normal international trade conditions are restored, the Reserve banks may again hold an appreciable amount.

The Reserve banks purchase all bankers' acceptances under the supervision of the Federal Open Market Committee as a phase of general open-market policy. In practice, most of them are actually bought for the System account at the Federal Reserve Bank of New York. Purchases are made from both banks and dealers. Banks that hold acceptances frequently meet a primary reserve deficiency by selling them to the Reserve bank rather than by borrowing. The greater part of the acceptance portfolio of the Reserve banks has usually arisen from such purchases.

The purchase of acceptances by the Reserve banks from dealers may be either an outright one or under a "repurchase agreement." In the former case, the Reserve banks follow the general policy of holding the acceptances until maturity. Under the repurchase agreement the dealer agrees to buy the acceptances back within 15 days or less. This was the common method by which dealers financed their inventory during the 1920's. The yield on the acceptances was approximately the same as the buying rate of the Reserve banks, so that dealers suffered no direct loss from carrying them. Since 1933, however, dealers have been able to finance their operations more economically by direct loans from the commercial banks.

Foreign Bank Investors. During the period 1927-1931, foreign central and commercial banks represented one of the largest sources of demand for dollar acceptances.¹ The Bank of France was the largest purchaser but many other central banks invested a part of their reserves in this way. Central bank holdings overshadowed those of foreign commercial banks. With the advent of the international banking crisis of 1931, however, this source of demand was quickly withdrawn, and it has since been of negligible importance.

The Federal Reserve Bank of New York purchased the larger part of these acceptances for the account of the foreign banks. They were bought almost entirely from dealers and at a less favorable price than the bills bought for the Reserve banks themselves. The Reserve banks indorsed these bills for which a commission of $\frac{1}{8}$ per cent per annum was

¹ The Bureau of Foreign and Domestic Commerce estimated the holdings of dollar acceptances by foreigners as follows: end of 1927, \$406 million; 1928, \$565 million; 1929, \$865 million; 1930, \$702 million; 1931, \$265 million. Published in the Bureau's annual pamphlet, *The Balance of International Payments of the United States*

charged. Large commercial banks in New York City also bought and guaranteed acceptances for their foreign correspondents.

Commercial Bank Investors. Table 43 further discloses that domestic commercial banks owned a surprisingly small part of outstanding acceptances in the years preceding 1932. This situation was disturbing to the sponsors of the new market, since according to plan these banks were to constitute the chief source of demand, and the Reserve banks were to take only the overflow. The fact of the matter is that, in attempting to stimulate volume, the Reserve banks set their buying rates so low that call loans, commercial paper, and other alternative forms of short-term investment were more attractive, even considering the fact that no investor in bankers' acceptances has ever sustained a loss of principal.

Since 1932, however, in consequence of the abnormal money market situation, the commercial banks have held the bulk of outstanding acceptances. With large uninvested reserves at their disposal, the banks have bid eagerly for the limited supply of acceptances and other forms of short-term investment. The small group of accepting banks has held most of the outstanding acceptances—about three-fourths in recent years—leaving only one-fourth for all other banks and investors. Moreover, in order to keep their funds at work and to avoid the dealers' commission, the accepting banks have retained nearly one-half of their own acceptances instead of selling them in the open market. Acceptances so held are not really open-market paper, but are the equivalent of a straight bank loan to the borrower. Thus, the market has been a rather narrow one, restricted mainly to the large city banks.

Another aspect of the marked institutional concentration of the market is a high degree of geographical concentration. At mid-year 1942 the national banks in thirty-six states owned no "acceptances of other banks payable in the United States," and the total amount held exceeded \$1 million in only two states—New York and Texas. The situation was not far different in 1930, when the national banks in twenty-nine states owned no acceptances of other banks, and the amount held exceeded \$1 million in but five states.¹

A great variety of other investors have from time to time bought bankers' acceptances, but their share of the total has been insignificant. In this group have been included: savings banks; insurance companies; business corporations; endowed institutions such as hospitals, colleges, and churches; and wealthy individuals.

¹ *Annual Reports of the Comptroller of the Currency.*

DEALERS IN BANKERS' ACCEPTANCES

The function of the dealers in bankers' acceptances in general terms is the same as that of middlemen in other markets, *viz.*, to provide adequate facilities so that the bids of buyers and the offers of sellers may be brought together and a fair market price may be quoted. The dealers stand ready to buy acceptances at all times, and they maintain an inventory of different maturities to meet the demands of banks and others.

Almost all open-market transactions in acceptances are handled by some half-dozen "recognized" dealers.¹ A dealer is "recognized" when the Federal Reserve banks accept his indorsement, and also are willing to finance his portfolio by buying acceptances under repurchase agreement. In order to acquire this status, a dealer must have adequate capital and facilities, a satisfactory financial position, and reputable management. Most dealers do not restrict their activities to this one field but also handle or underwrite other securities.

Dealers purchase acceptances outright at a discount from face value determined by the rate and the maturity. They hope to realize a profit by selling at a still lower rate (higher price). The usual trading profit is $\frac{1}{8}$ per cent per annum, but if money rates change or the particular purchase varies from standard, the profit may increase, disappear, or turn to a loss. Dealers seek their profit by rapid turnover instead of by holding acceptances to maturity. If requested, they indorse the acceptances which they sell, and with this guaranty the bills usually command a slightly lower rate. The Federal Reserve banks require a dealer indorsement unless the acceptance already bears a satisfactory bank indorsement.

In the purchase of bankers' acceptances dealers have to exercise care concerning both the accepting institution and the eligibility of the acceptances for purchase by the Federal Reserve banks. Acceptances of the less well-known banks sell at higher rates of discount than those of recognized institutions in the larger cities. Ineligible acceptances likewise bring a less favorable price. While their volume is not large, they occasionally arise from the following: the storage of goods in warehouses under the control of the borrower; the storage of goods that are not classed as "readily marketable staples"; dollar exchange drafts

¹ The following dealers were engaged in the bankers' acceptance business in New York City in 1948: Briggs Schaedle & Co., Inc.; Discount Corporation of New York; The First Boston Corporation; M. and T. Discount Corporation; D. W. Rich & Company, Inc.; and Salomon Brothers & Hutzler.

drawn by banks in countries not approved for this purpose by the Board of Governors; and acceptances with maturities in excess of the legal limit.

In addition to the purchase and sale of existing acceptances, dealers quote rates at which they will purchase them for future delivery. Most of these "forward" acceptances are for delivery within a few weeks, but sometimes when the money-rate level seems stable, quotations are made for several months ahead. The forward rate of discount is ordinarily higher than the current market rate and increases with the length of the time interval.

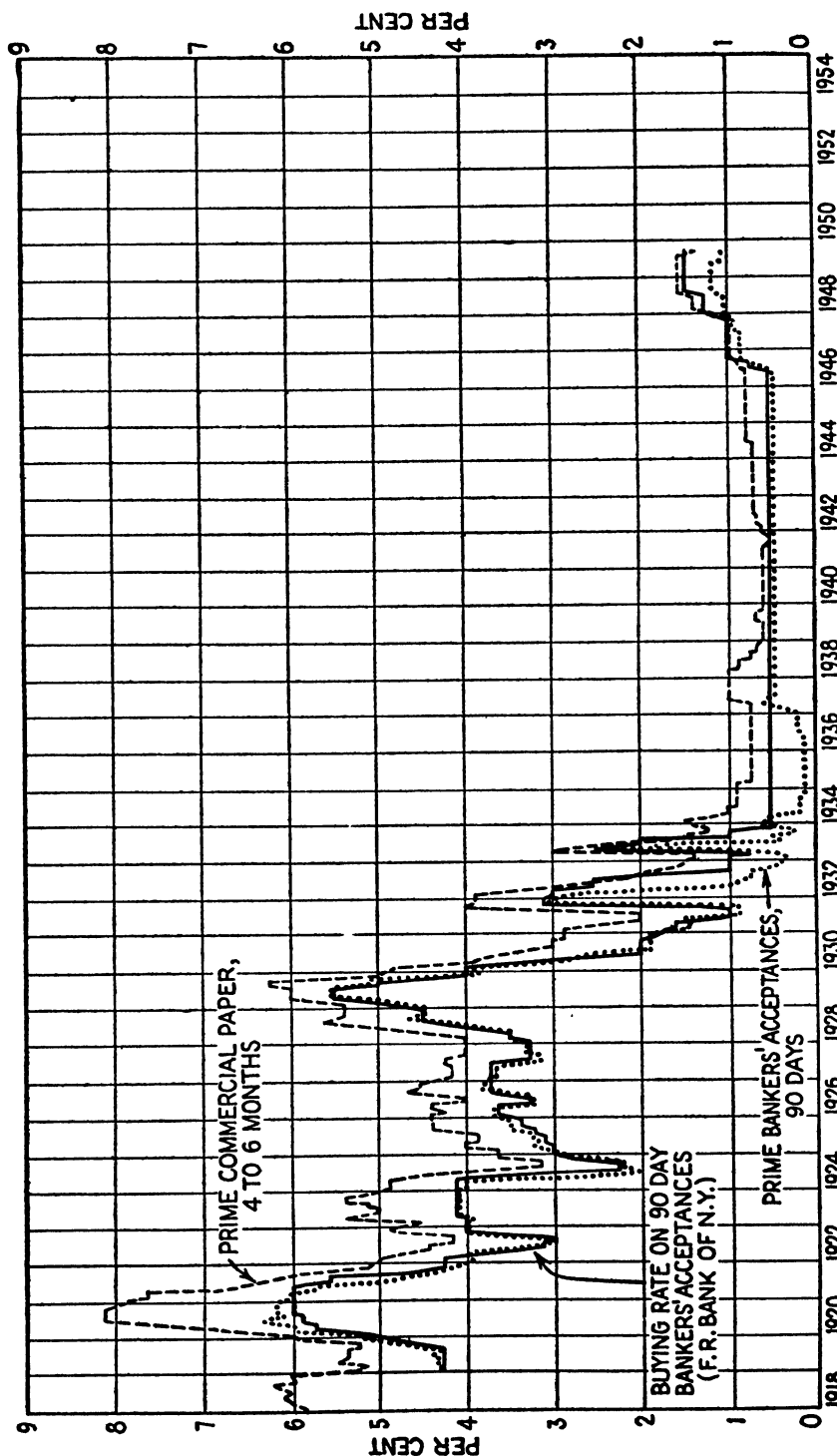
Under normal conditions dealers borrow heavily to finance acceptances purchased, since their own capital is small in relation to operations. They borrow either from the Federal Reserve banks or from commercial banks, depending on which offers the more favorable terms. Before the 1930's, the Reserve banks financed dealers' requirements for the most part on the basis of "repurchase agreements," which have already been described. But since that time dealers have been able to borrow more advantageously from commercial banks. Call loans secured by acceptances are the most common arrangement. The face value of the collateral is generally from 2 to 5 per cent larger than the amount of the loan. These loans, however, are not open-market call loans. Rather, they are customer loans made with the understanding that the bank will not call them so long as adequate collateral is provided. Rates on such loans vary with different customers and banks, but are usually at least as low as the yield on bankers' acceptances.

Unsecured "day loans" are often employed to finance the requirements of dealers during the day. Such loans bear no interest and are taken up at the end of each day by the proceeds of sales or by secured call loans.

RATES ON BANKERS' ACCEPTANCES

During the 1920's the open-market rate on 90-day, prime bankers' acceptances ruled about as much below the discount rate of the Federal Reserve Bank of New York as the rate on 4- to 6-month commercial paper ruled above it (see Chart 18). More specifically, the acceptance rate usually ranged from $\frac{1}{4}$ to $\frac{3}{4}$ per cent lower than the discount rate, and the commercial paper rate ranged from $\frac{1}{4}$ to $\frac{3}{4}$ per cent higher than the discount rate. This relationship was altered, however, during the easy money era of the 1930's and 1940's. After 1932, the commercial paper rate also ruled from $\frac{1}{4}$ to $\frac{1}{2}$ per cent below the discount rate until 1947 when it again rose above the discount rate. In 1949, a more normal relationship between these three rates appeared to be emerging.

CHART 18. RATES ON BANKERS' ACCEPTANCES AND COMMERCIAL PAPER, 1919-1949



Source: Board of Governors of the Federal Reserve System; monthly data.

The low level of the acceptance rate results partly from the fact that prime acceptances are the obligations of our largest and strongest banks and partly from the artificial support given by the Federal Reserve banks. As already indicated, these banks always quote a schedule of rates at which they will purchase prime acceptances of different maturities. Before 1934, the buying rates of the Federal Reserve banks were set below the bids of other investors for a substantial part of the outstanding acceptances which naturally flowed to the Reserve banks. This meant that the acceptance rate was held *below* the level to which it would have gravitated under the free forces of supply and demand.

During this period of liberal support, the open-market acceptance rate was governed by the buying rate of the Reserve banks. It could not rise appreciably above the buying rate, since acceptances would flow to the Reserve banks until the market rate dropped as low as the buying rate. Nor could it fall appreciably below the buying rate, since at a rate so low other investors would not purchase acceptances. In other words, the only condition under which the open-market rate could decline below the Reserve buying rate was one in which the demands of other investors equaled supply at such a low rate. That this condition did not obtain in this period is indicated in Chart 18; it is also shown by the fact that the Reserve banks held from 20 to 50 per cent of all outstanding acceptances during that period.

Since 1934, however, the Reserve banks have held a negligible amount of acceptances. Other investors have purchased them at a rate well below the Reserve buying rate. The open-market acceptance rate dropped to $\frac{1}{8}$ per cent in 1935 and 1936, under the pincer effect of increased demand and reduced supply, when the Reserve buying rate stood at $\frac{1}{2}$ per cent. It has remained below the official buying rate up to the present time (February, 1949).

While discussion in this section has been confined to the 90-day rate on prime acceptances for the sake of simplicity, it should not be forgotten that there are many different rates. The rates on acceptances of short maturities are lower than those on long maturities. Acceptances of the smaller, less well-known banks usually bear higher rates, and those which for any reason are not eligible for purchase by the Federal Reserve banks sell at higher rates. Finally, forward rates are usually higher than current rates and rise with the length of the future time interval.

ECONOMIC SIGNIFICANCE OF THE MARKET

We have already seen the benefits of the acceptance market to the parties directly involved, *viz.*, importers, exporters, and other borrowers;

accepting banks; investors; and dealers. In addition, the entire community tends to gain in so far as the facilities of the market promote a more efficient use of productive resources and a sounder banking system. If the market expedites the flow of imports and exports at somewhat lower costs, all consumers of imported goods and all producers of exports stand to gain. Likewise, in so far as the shipment and storage of farm and other domestic products are financed more economically by acceptances, a general advantage is realized. Furthermore, the free flow of international funds between the money centers of the world is encouraged by the market. In short, the welfare of all is enhanced by the existence of a strong financial system, the resources of which are mobile and economically distributed.

CONCLUSIONS AND PROSPECTS

An Undeveloped Market. In spite of the conscious encouragement given by the Federal Reserve authorities, the dollar acceptance market has failed thus far to attain a rounded development. Its narrowness from the standpoint of investors has already been discussed. The commercial banks of the country, generally speaking, have not bought acceptances as a secondary reserve investment. Even the large money-market banks which give rise to most of the acceptances have found other investment media more attractive, and have bought open-market acceptances sparingly. The same can be said of other investors, including savings banks, insurance companies, business corporations, endowed institutions, trustees, and individuals. As a result of this situation the bulk of outstanding acceptances during the 1920's was in the hands of the Federal Reserve banks and foreign banks.

The chief reason for the narrow nature of the market was the fact that call loans, commercial paper, U.S. government securities, and other short-term securities offered a higher return in relation to safety and liquidity. This circumstance was a consequence of the paternalistic policy of support by the Board of Governors. In their zeal to build up acceptance volume by holding Reserve bank buying rates low, they encouraged the creation of more acceptances than the open market would absorb at so low a rate. Such a policy was doubtless necessary and desirable in the early years, but henceforth the market should in general be encouraged to stand on its own feet. This can be done by keeping the official buying rate slightly above the market rate, so that Reserve bank credit would enter the market through the acceptance channel only for emergency needs. An independent acceptance market, supported broadly by commercial banks and other investors, is a healthier component of the entire money market than an artificially supported

market, even though the amount of outstanding acceptances may be somewhat smaller. The Board of Governors has apparently held this view since 1934.

Improved Acceptance Practice. A Federal Reserve Committee on acceptance practice made a thoroughgoing survey of this field in the early 1930's and reported its findings late in 1936.¹ A summary of its most important findings and conclusions, which point the way to improved acceptance practices, follows:

1. Investors in bankers' acceptances have never suffered a loss of principal. During the period 1920–1932, the losses of accepting banks were also relatively small—about 0.03 per cent per annum of the total acceptance business done.

2. The largest loss relative to volume was sustained by accepting banks in the category "shipment between and storage in foreign countries" on which the loss rate during the period 1925–1932 was between 0.05 and 0.09 per cent per annum.

3. The category showing the second largest loss rate was "imports" on which the rate during 1925–1932 was less than 0.02 per cent. Half of this loss arose from goods which were released on trust receipts.

4. Losses have been "for the most part associated with the types of eventualities which should be forestalled more by judgment, prudence, and vigilance of bankers than by official regulations."

5. The general field of acceptance activities should not be narrowed by further official regulations.

6. "Regulations should contain a general requirement that with respect to credits covering export and import transactions and shipments between foreign countries, the accepting bank is expected to obtain satisfactory evidence, documentary or otherwise, as to the precise nature of the transactions underlying the credit extended."

7. "In the long run sound acceptance practice depends most largely on sound credit judgment on the part of the accepting bank, and the principal reliance for improvement in practice must be placed upon the gradual process of the seasoning of judgment of acceptors and the development of sound traditions."

8. "The bankers' acceptance should be the prime commercial credit instrument and acceptances which come into the market should be based on transactions as nearly riskless and above suspicion as possible."

The Future of the Market. On first view one might readily conclude that the acceptance market is either settling down to a position of per-

¹ For the complete report of the Federal Reserve Committee, see *Federal Reserve Bulletin*, September, 1937, pp. 839–850.

manent insignificance or is dying a natural death. This view might be supported by the observance that after a quarter century of subsidized existence the amount of outstanding acceptances was less in 1949 than in 1916, shortly after the market was organized. Other things which might be mentioned include the narrowness of investor interest, the insignificant amount of acceptance credit employed in export trade and in other categories, and the fact that in recent years about one-third of the outstanding acceptances have not even entered the open market but have been held by the accepting banks.

It would be a mistake, however, to stop at that point without also considering the potentialities of the market. To begin with, the drastic contraction of acceptances has been in large part a consequence of abnormal conditions.

First, commercial bank reserves have never before been so abundant, nor money rates so low as in the period 1933-1949. Under these circumstances straight bank loans have supplanted acceptance credits in many fields. But this development is unlikely to persist under a condition of less abundant bank reserves accompanied by higher rates. Regardless of how or when this condition is brought about, the future doubtless holds it in store.

Second, the 1930's and 1940's have witnessed a drastic change in both the amount and nature of world trade. The amount of world trade was sharply curtailed during the great depression of the 1930's, and during the Second World War international trade was financed in the main by governments. This was still true in 1946 and 1947, and to a lesser extent in 1948 and 1949. What the future holds for the acceptance market depends on the kind of world order that emerges from the peace settlements. If the United Nations can develop a new era of international cooperation, the dollar acceptance is likely to become the most important instrument in international finance. But if excessive nationalism and autarchy prevail, the volume of world trade will be restricted and a larger part of it will be directly financed by governments as during the war. In this event there will be a very limited field for the use of the bankers' acceptance.

Third, wider use of acceptances may develop in financing domestic storage and shipment and other working-capital needs of business.

Finally, the future of the acceptance market in large measure depends on the aptitude and aggressiveness of our accepting banks in the international field and on the type of guidance provided by the Federal Reserve authorities.

TABLE 44. COMPARISONS OF SHORT-TERM OPEN MARKETS: AMOUNTS OUTSTANDING AND RATES, APRIL, 1949

Type of obligation	Amount outstanding April 30, 1949, millions of dollars	Money rates, per cent per annum
U.S. Treasury bills	11,542	1.16
U.S. Treasury certificates of indebtedness	28,710	1.20
U.S. Treasury notes with maturity of 1 year or less	3,596	1.20
U.S. Treasury bonds, callable in 1 year or less	7,630	0.96-1.17
Total U.S. marketable securities with maturity of 1 year or less	51,478	
Brokers' loans	329	1.63*
Commercial paper	249	1.56
Bankers' acceptances	204	1.19
Total short-term money markets	52,260	

SOURCES: *Treasury Bulletin*, June, 1949, pp. 15, 19, 35; *Federal Reserve Bulletin*, June, 1949, pp. 699-700.
 * Call loan renewal rate.

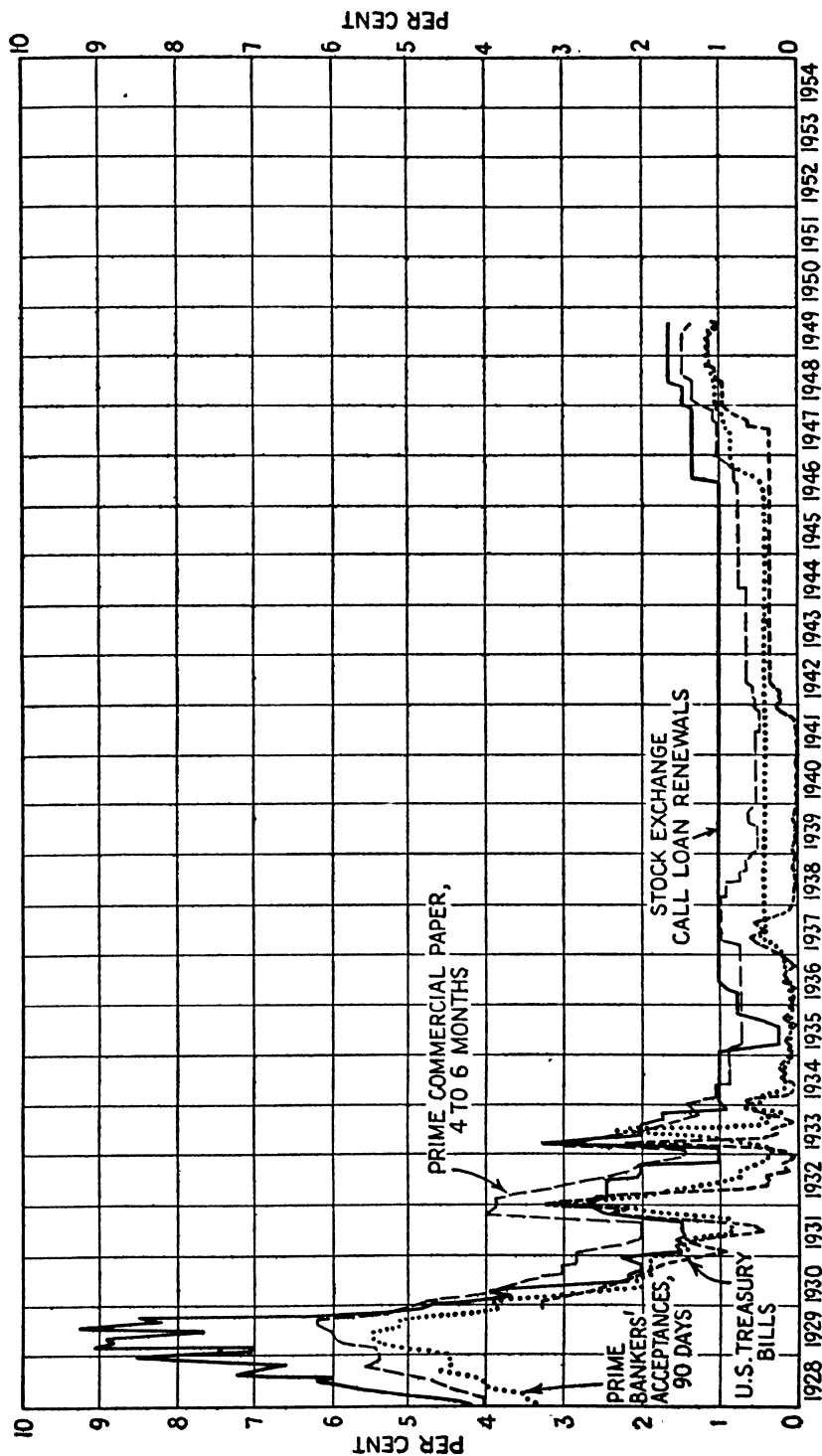
COMPARISONS OF SHORT-TERM OPEN MARKETS

It remains to compare the four short-term divisions of the money market as media for investment of bank secondary reserves. For this purpose attention is directed to Table 44 which shows the amount outstanding and the rate in each market in April, 1949. The most impressive fact is the dominance of government securities, which accounted for 98.5 per cent of total obligations. This means obviously that banks have little choice beyond the government market. The amounts of brokers' loans, commercial paper, and bankers' acceptances are nominal in relation to the needs for secondary reserves.

The spread in yields in 1949 is too narrow to be a matter of large consequence when difference in qualities is considered. But Chart 19 brings out the fact that the pattern of the rate structure changes with financial conditions. As a consequence, the relative attractiveness of the different obligations as investments also varies from time to time.

Treasury bills have had the lowest rate of all over the years owing to their higher degree of safety and liquidity and also to the fact that they qualify more widely as legal investments (see Chart 19). The next higher rate in the market has been that on bankers' acceptances. Being the obligations of well-known city banks and enjoying a preferred status

CHART 19. SHORT-TERM MONEY RATES, 1928-1949



SOURCE: *Banking and Monetary Statistics*, 1928 to 1941; *Federal Reserve Bulletin*, 1942-1949; monthly data.

at the Reserve banks, they are only slightly inferior to Treasury bills in liquidity and safety. The rates on open-market commercial paper and stock exchange call loans have averaged about the same over the years and have ruled a step higher than acceptances. Normally, they have been about as much above the discount rate of the Federal Reserve Bank of New York as the acceptance rate has been below.

Customers' loan rates in principal cities—not included in the chart—have been appreciably higher than the rate on open-market commercial paper. Customers' rates in New York City have been lower than those in other Northern and Eastern cities, and these rates in turn have been lower than those in Southern and Western cities. The respective rates at the end of March, 1949, were as follows: open-market commercial paper, 1.56 per cent; New York City customers' rate, 2.42 per cent; Northern and Eastern cities, 2.68 per cent; Southern and Western cities, 3.12 per cent.¹ Customers' rates in the smaller cities have been still higher, and the highest rates of all have been in the small towns. Factors of risk, competition, and banking costs mainly account for these differences. In some degree the published rates overstate the actual differences, since they do not apply to comparable loans. The differences are very small on loans of the same size to businesses of the same credit standing.

The outstanding feature of the money-rate structure is the essential unity that prevails. All rates rise and fall together during periods of significant change. This suggests that the forces governing rates penetrate to all sections of the loan market. For this reason one may well view this market for general purposes as one great market composed of many subdivisions.

An almost equally important feature of the rate structure, however, is the differences which are apparent in the various sectors. Differences in rate levels and the reasons therefor have already been discussed. But there are also significant differences in sensitivity to basic conditions in the money market. For the present purpose, sensitivity may be measured in terms of both *speed* and *extent* of response to underlying changes. With regard to the former, the call loan rate and the commercial-paper rate have run a dead heat for first place. The acceptance rate and the Treasury bill rate have reacted less quickly at times only because of direct controls exerted in these markets by the monetary authorities.

With respect to extent of response, the call rate has shown the widest

¹ *Federal Reserve Bulletin*, June, 1949, p. 700.

range of fluctuation. In both the tight-money periods of 1920 and 1929 it rose well above the other rates, and in the easy-money periods of 1924, 1927, and 1931–1935 it fell below the commercial-paper rate and even dropped below the acceptance rate in 1924 and 1931. However, the capacity of the call rate to reflect easy money was limited between mid-year 1936 and 1946 when the New York City banks agreed upon a minimum of 1 per cent. The high sensitivity of the call rate arises from both the demand and supply sides. The demand for credit in the stock market is exceedingly insistent when speculators hold a strong belief in rising prices. From the standpoint of supply, the banks become increasingly reluctant to make stock exchange loans as their reserve position tightens. This is in part because of their desire to give priority to commercial customers and in part because of the lower standing of security loans in the eyes of the Federal Reserve authorities.

The commercial-paper rate has stood next to the call rate in the extent of response to change, followed in order by the acceptance rate and the Treasury bill rate. With the advent of the 1930's the acceptance rate exhibited greater sensitivity than formerly owing to a change in Reserve policy. The strong artificial support given formerly was changed to stand-by support at an official buying rate above the market rate. On the contrary, the Treasury bill rate was pegged during the war and while the rate was permitted to rise beginning at midyear 1947 it remains subject to Reserve and Treasury control at present (July, 1949).

Regarded as a whole the open-market rates have been considerably more sensitive than customers' loan rates both in speed and extent of response. This has been particularly evident in the customers' market of the smaller cities and towns, but it has also been true in less degree in New York City. The explanation of this difference lies mainly in the marginal character of the open markets and in the breadth and vitality of competition in them. When the banks have excess reserves, they bid strongly for liquid earning assets to serve as secondary reserves and thereby drive open-market rates down sharply. On the other hand when reserves are deficient, the banks offer liquid earning assets for sale with the result that open-market rates rise sharply. Customers' rates are more sluggish because of the intramarginal nature of the market and because of the personal bank-customer relationship which limits the intensity of competition.

Review Questions

1. For what reasons did the founders of the Federal Reserve System provide for a new bankers' acceptance market?

2. Indicate the scope of the task of establishing the new market.
3. State the restrictions which apply to member banks in the granting of acceptance credits.
4. Compare the economic activities financed by means of bankers' acceptances with those financed by open-market commercial paper.
5. Give an illustration of the use of a dollar acceptance credit to finance an import to the United States.
6. Illustrate the use of a dollar acceptance credit to finance an export from the United States.
7. Comment on the use, and summarize the regulations pertaining to the employment, of bankers' acceptances in financing domestic shipment and storage of commodities.
8. Indicate the commodities, the shipment and storage of which are frequently financed by bankers' acceptances.
9. What advantages do certain classes of borrowers realize from the availability of the bankers' acceptance market?
10. "The market for dollar acceptances has been a highly concentrated one." Develop this statement.
11. Discuss the importance and the practices of the Federal Reserve banks in the acceptance market.
12. Comment on the importance of foreign central and commercial banks as investors in dollar acceptances.
13. Account for the small holdings of bankers' acceptances by domestic commercial banks in the years preceding 1932.
14. Explain why the large city banks, especially those in New York City, have owned the bulk of bankers' acceptances since 1932.
15. What is the general function of dealers in bankers' acceptances?
16. State the meaning of the term "recognized dealer" in bankers' acceptances.
17. Discuss the nature of the business of the dealer in bankers' acceptances.
18. Compare changes in the rate on bankers' acceptances with changes in the rate on commercial paper and the discount rate of the Federal Reserve Bank of New York as brought out in Chart 18.
19. Discuss the economic significance of the bankers' acceptance market.
20. How do you account for the narrow nature of the bankers' acceptance market?
21. Comment on the future prospects of the bankers' acceptance market.
22. Study and interpret Table 44 which compares the short-term open markets with respect to size and rates.

Advanced Questions and Problems

1. Explain the conditions prior to the 1930's under which the Federal Reserve banks usually owned between 25 and 50 per cent of all outstanding bankers' acceptances.
2. Why have the Reserve banks owned a negligible amount of bankers' acceptances since 1934?
3. Bring Chart 18 up to date and interpret the changes since 1948.
4. "During the 1920's the open-market rate on bankers' acceptances was governed by the buying rate of the Reserve banks." Give a logical explanation of this statement.

5. Bring Chart 19 up to date, and summarize the principal facts which it emphasizes.

6. Why have open-market money rates been considerably more sensitive than customers' loan rates both in speed and extent of response to financial changes? Explain.

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CHAPTER XXXV

FISCAL AND MONETARY MANAGEMENT

No other group of government economic policies exerts a more profound influence on a private enterprise economy than those in the monetary and fiscal fields. If wisely conceived and effectively applied, these policies will promote the welfare of the nation. But if poorly conceived, they may actively defeat the basic purposes of the economy and even lead to its disorganization or destruction. These policies influence importantly the level of employment and production in regard to both cyclical changes and long-term trends. They also influence the distribution of wealth and income through their effect on the price level and the price structure. In view of these facts no citizen and no institution can escape their pervasive—and sometimes dominating—effects.

Like other over-all government policies, fiscal and monetary policies should be continuously adapted to the welfare of the people as new conditions unfold. They cannot be permanently established once and for all no matter how well they may fit conditions of the time and place. This implies a positive program of management by the government.

The breadth of the topic is such that the present chapter must discuss in a summary manner (1) the basic objectives of the economy, (2) the monetary standard, (3) the control of bank credit, (4) management of the Federal debt, and (5) organization for fiscal and monetary management.

BASIC OBJECTIVES OF THE ECONOMY

The generally recognized objectives of the economy are (1) high-level employment and production, (2) stable employment and production, (3) equitable distribution of income, and (4) a reasonable degree of economic progress accompanied by a rising standard of living.

Summary of Objectives. 1. There should be jobs for all who are capable and desirous of working. Experience shows, however, that unemployment in a dynamic, private enterprise economy can scarcely be reduced below 2 or 3 per cent of the labor force. This number of persons is unemployed because of adjustment to ever-present economic changes. In order for maximum employment to be translated into high-level pro-

duction, workers must put in a reasonable number of hours and must work efficiently with modern tools in well-managed enterprises.¹

2. It is not enough, however, that employment and production reach a high level in times of business boom. Instead, they should be maintained stably at this level in so far as possible. Unemployment is a waste that can never be regained. The wide cyclical fluctuations of business are perhaps the most serious threat to the private enterprise system.

3. The economic product should be divided equitably among different producing classes and among the individuals of each class. This does not mean equality of income. Rather, it means reward in proportion to contribution, modified in some degree by society for humanitarian and other reasons.

4. While the desirability of economic progress is a widely accepted objective, there are no very definite standards by which to determine the proper rate of such progress. Probably all would agree that productive efficiency should increase more rapidly than population so that per capita income may rise. In the United States total production has risen at the annual rate of about 3 per cent during the past century, and production per capita has risen between 1 and 2 per cent per annum.

The keynotes of economic progress are (1) vigorous promotion of research, and (2) growth in capital investment, so that new and more efficient facilities may replace the old. Such private investment is possible only when profitable opportunities exist and when investment funds are available either from voluntary savings or from bank credit expansion. When unemployment exists, the rate of real investment can be increased with little or no sacrifice to current consumption. But when resources are fully employed, the rate of real investment can be increased only by curtailing current consumption. That is, the present must be sacrificed to the future. For this reason there is some danger of promoting progress too rapidly from the standpoint of today's consumers.

Progress may also be made without much additional investment by better organization and coordination, by more efficient methods, by forward-looking personnel policies, by educational and training programs, and by development of innovations which require little additional capital.

¹ Under a free economy, maximum production should not be regarded as a possible maximum under the forced-draft conditions of war, when additional labor from housewives, the old, and the young may be necessary as well as longer hours for all. In peacetime, people should be free to decide as between more income and more leisure in order that the highest satisfactions in life may be realized.

The economic objectives of a country are frequently viewed in a narrowly nationalistic manner with little regard for the rest of the world. This is a mistake even if self-interest is the sole motivation. No nation can long prosper unless its neighbors are also enjoying economic health. International cooperation is the only environment in which there can be hope for peace, individual freedom, private enterprise, and democracy. Moreover, to the extent that unselfish motives are present, there is all the more reason to view objectives from a world standpoint.

Objectives and Monetary Management. Once the broad goals of the economy are accepted, it is clearly evident that all public policies, including monetary policies, should be designed to foster them. In fact, the final test of the goodness of any economic policy, again including monetary policy, is its consistency with the basic objectives as summarized just above. Failure to apply this test is responsible for many of the inconsistencies which have been, and remain, altogether too numerous in our monetary system.

Since the objectives are so broad in nature, problems of monetary management must be approached with an equally broad viewpoint. They cannot be narrowly conceived in terms of the present powers and functions of the Board of Governors of the Federal Reserve System. Instead, their foundations must be considered wherever they may exist. Large monetary responsibilities reside in the Treasury, and in other departments of the government. And still deeper responsibilities rest with the Congress and the President that together establish the monetary laws of the land.

THE MONETARY STANDARD

The Standard and the Objectives. A fundamental part of monetary policy is concerned with the choice of a monetary standard. Since this topic was discussed in Chapter V, there is no need here to recount introductory details. Attention will be given only to certain of the larger aspects.

A primary proposition which follows from the preceding section is that the monetary standard—whatever its technical nature may be—should always be consistent with the basic objectives. It should be designed with sufficient adaptability never to thwart these aims, but rather to promote them. The problem of harmonizing the standard with the objectives, however, is not an easy one. There is some conflict among the objectives themselves, so that judgment must be exercised in weighting their relative importance under existing circumstances. Also, there is some conflict as in almost all policies between their long- and short-term aspects. The only solution to these conflicts is a balanced com-

promise designed to realize maximum welfare and justice. This is a large order, but the problem is no more difficult than many other public policy problems that have to be solved in a similar manner.

Applying the Test. Application of the acid test of consistency with objectives shows that monetary standards employed in the past fail to meet these specifications.

Metallic Standards. A conventional metallic standard—designation of the value of a certain weight of metal as the monetary unit—is too rigid in nature. This is true whether the metal be gold, silver, or some other. Blind adherence to such a standard as if it were sacred law is entirely unjustified. The vagaries of supply and demand for any metal always lead to changes—sometimes violent—in its value relationships with other things. To permit such changes to cause depression or to defeat other basic objectives flies in the face of logic and exhibits a gross lack of perspective. Important as it is, the monetary standard should not be the fixed fulcrum to which all other facets of the economy must be adjusted. This means that if the world returns to gold, a measure of flexibility should be provided for the price of gold in terms of national monetary units, rather than the excessively rigid price of gold in dollars and pounds sterling that obtained in the century prior to the First World War.

History affords numerous examples of the sacrifice of basic objectives to the false goal of a rigid standard. One of these was 1875–1896 when the price level in the United States declined by about 50 per cent. This was a difficult period of adjustment when years of depression exceeded years of prosperity. In large part the price decline was a consequence of adherence to a rigid gold standard. The value of gold rose both because of increased demand and reduced relative supply. Beginning in the 1870's, several major nations adopted the gold standard and thereby materially increased the monetary demand. At the same time there was a decline in gold production in relation to the existing gold stock.

Another outstanding example was the return of the United Kingdom to gold in 1925 on the same basis as obtained before the First World War. Meanwhile, prices in Great Britain had risen relative to those in the United States with the result that the pound sterling was overvalued in terms of gold. Adherence to this basis required difficult downward adjustments of prices and wages in order to avoid the loss of gold. The struggle ended six years later (September, 1931) when the United Kingdom was again forced to suspend redemption of money in gold. Here then was another instance of pursuit of a false monetary goal with a needless sacrifice of employment and the standard of life.

The Stable-price-level Standard. Proponents of some type of stable-

price-level standard likewise disregard the rigidity and narrowness of this goal. When substantial unemployment exists, a rise in the price level may well provide healthy encouragement to increased production, and it may promote a better balance in price relationships. A good case for a moderate uptrend of the price level can also be made under certain circumstances in order to foster investment and economic progress.

On the other hand, it is possible to visualize full-employment conditions under which economic welfare may best be served by a slowly falling price level. These conditions are rising productive efficiency accompanied by falling unit costs of production and a vigorous spirit of enterprise in the presence of good profit prospects. Under these circumstances a decline of prices at a rate no greater than the rise of productive efficiency may prevent a too-rapid rate of investment in general, and may also intercept specific investment mistakes. In addition, justice may be furthered by permitting creditors and other fixed-income classes to participate in the growing national income.

Furthermore, it is entirely possible that some change in the price level may be called for in order to encourage international economic cooperation. No nation can reasonably disregard its rightful place in the world community.

Thus, a stable-price-level standard would almost certainly work at cross purposes with the more basic aims of the economy. Its adoption would therefore be unwise even assuming it could in practice be realized. All this does not mean, however, that *reasonable* stability of the price level is to be disparaged. Almost certainly it would be one of the conditions of maximum welfare. But the latter should never be sacrificed on the altar of a stable-price-level standard.

The Maximum Welfare Standard. If monetary standards heretofore employed have been inconsistent with basic objectives, what standard does meet this test? The answer appears to be that no proximate standard can be substituted for maximum economic welfare itself without at times defeating this ultimate goal. Maximum welfare is a balanced blend of the separate basic objectives discussed above.

The objection may well be raised that while all may agree on the ultimate goal, it is too general, intangible, and remote to be administered in practice. Wide disagreement regarding the proper monetary policy at any time to achieve this end is almost certain. This does indeed point to the great difficulty of the problem. Nevertheless, it must be faced along with other equally stubborn problems of public policy. All of them, whether they relate to money, monopoly, taxation, or some other phase of economic life, should be put to the test of maximum welfare.

A promising approach to the maximum welfare standard at the international level is to be found in the International Monetary Fund. All member countries are required to establish a parity of their moneys with the gold dollar. Yet each country may change the gold value of its money by as much as 10 per cent, and larger changes may be made with approval of the Fund when basic conditions justify such action. There is thus pressure and aid from the Fund to make fundamental adjustments in each country in the interest of international monetary stability. But no country is slavishly committed to a fixed gold parity which may prove to be untenable. At the same time the common gold basis provides for stable exchange rates, apart from alterations dictated by basic conditions.

CONTROL OF BANK CREDIT

The control of bank credit has been discussed in Chapter XI so that repetition of details is unnecessary. The relevance of this problem to monetary management will be recognized, however, when it is recalled that the bulk of the money stock is in the form of deposits. Credit control can be constructively applied only when it is directed toward realization of the stated basic economic objectives. These should be the guides or criteria.

The means of credit control—the discount rate, open-market operations, changes in reserve requirements, counsel, publicity, and direct selective measures—should be made adequate to the task assigned the monetary authorities. Monetary management, no matter how wisely conceived, cannot be exercised unless powers are sufficient.

DEBT MANAGEMENT

One of the war legacies—a Federal debt in excess of \$250 billion—has elevated debt management to one of the most important phases of monetary management. Interest at this point is in the broad monetary aspects of the problem rather than in the detailed, technical aspects.

Congress and the President have the greatest responsibility of all in determining whether there shall be a Federal budget deficit or surplus, the size of the deficit or surplus, and hence the amount by which debt will be expanded or retired. This over-all decision depends in large part on the basic philosophy regarding the role of the government in the economic system. Should the role be the traditional one before the 1930's when little or no responsibility was taken for the level of employment? Or should the government assume large responsibility for employment as under the New Deal and in greater degree under the Labor Party of the United Kingdom? Or should a happy medium somewhere between these extremes be adopted? Questions such as these must be answered

in order to deal wisely with the most important aspect of debt management which pertains to the size of the debt together with the amount and direction of change.

From this point on responsibility for debt management rests mainly with the Treasury. Administration of the debt is a complex and highly technical problem which cannot be fully discussed at this point. Only three aspects will be considered, *viz.*, ownership of the securities, yields, and artificial support of Federal security prices.

When the Federal debt is expanding, it makes a material difference from a monetary standpoint to whom the new securities are sold. If sold to individuals and other nonbank interests, no change in the amount of demand deposits and reserves of commercial banks takes place. If the securities are sold to commercial banks, new demand deposits are created and reserves remain the same. But if sold to the Federal Reserve banks, both reserves and deposits are created. The market for new securities, and the retirement of old securities should therefore be harmonized with the over-all monetary policy of the country. This topic was discussed more fully in Chapter XXXI.

With the huge increase in the Federal debt, the interest-rate basis on which it is offered becomes a matter of large national concern. The most obvious effect is on the carrying cost, which must sooner or later come from taxation. In fiscal 1948, interest on the public debt amounted to \$5.2 billion. But an even more significant effect of the rate basis follows from its dominance over the entire interest-rate structure. This in turn influences the amount and velocity of money, the level of production, and the level of prices. There has been an unfortunate tendency in the Treasury to overweight the interest-cost effect and to disregard the broad monetary influences of the rate basis of the Federal debt. This leads to a bias toward abnormally low rates with the danger of creating serious monetary problems at a later date. It is readily possible for a small saving in interest cost to cause such far-reaching maladjustments in the economy as to be penny-wise and pound-foolish.

A strong case can be made that the postwar dilemma in the monetary and fiscal policy of the United States is in large part a consequence of the decision to finance the Second World War at an abnormally low interest cost. In the face of unprecedented war and postwar credit demands, the rate basis chosen was at the approximate all-time low point—ranging from $\frac{3}{8}$ per cent on bills to $2\frac{1}{2}$ per cent on long-term bonds. Once established in 1942 the rate structure was adhered to and maintained by artificial methods until midyear 1947 when short-term rates were permitted to rise somewhat. However, the Reserve authorities announced

their intention near the end of 1947 to support long-term government securities at approximately par, which meant a yield of $2\frac{1}{2}$ per cent or less on the longest term issues. Between the end of November, 1947, and November, 1948, Reserve bank holdings of bonds rose from \$970 million to \$11,181 million, purchased in the market largely from insurance companies, savings banks, and commercial banks. In some weeks purchases exceeded \$500 million. In the seven following months the government bond market strengthened to such an extent that the Reserve bank bond portfolio was steadily reduced to \$7,780 million at midyear 1949.

Both the Treasury and the Reserve authorities favored the support policy, believing that, despite its drawbacks, there was no practical alternative. Without it they feared chaos in the government bond market. This was unthinkable in view of the huge amounts owned by financial institutions whose solvency would be threatened by a sharp decline in prices. They also feared the repercussions of such a debacle on business confidence and hence on business activity. Consequently, the policy was firmly established and remains in force in 1949, although many voices are raised in protest.

The monetary dilemma created by the policy is that it actively encourages a further rise in the commodity price level and at the same time forestalls the use of all traditional methods of curbing price inflation. In the face of this inconsistency, perspective can be gained by once again applying the test of basic economic objectives. If the danger of price inflation importantly threatens these objectives, as the government officially states and many economists affirm, is it not high time to fight the enemy on all fronts instead of giving him treasonable aid and comfort? More specifically, support of government bond prices has dominated all other monetary objectives during the postwar period. It has been the fulcrum about which other financial policies have revolved. Sooner or later this goal must be seen in its true colors, as a will-o'-the-wisp which if slavishly followed will certainly obstruct the welfare of the nation.

If this be true, heroic measures to permit pursuit of real objectives are justified. A reasonable first approach would be a Federal Reserve policy designed to bring about an orderly rise of interest rates to a more normal level. In view of the size of the Federal debt such a policy would have to be applied cautiously and experimentally. But there is good reason to believe that such a policy could be successfully realized. Unlimited support could be given by the Reserve banks to the bond market at each of a series of higher yield steps, just as unlimited support has thus far been given to the pegged rate structure. Eventually a rate would be

reached at which the market could stand by itself. At this point a restoration of traditional credit control powers of the Reserve authorities would begin, and the road would be cleared for application of monetary policies in harmony with basic objectives.

If after adequate experiment the foregoing approach should prove unworkable, even more heroic measures should be undertaken to restore once again conditions that permit the pursuit of peacetime monetary aims. Another method would be for the Treasury to stand part of the depreciation in government bonds by means of a bonus payment or by a tax refund to holders who could establish such a loss. While this method would doubtless meet with political obstacles, the cost to taxpayers would in fact be small compared with the irreparable losses which follow from shortsighted monetary policies.

ECONOMIC STABILIZATION

One of the leading challenges to this generation is that of moderating cyclical fluctuations in employment, production, and the price level without at the same time sacrificing the essential features of a free private enterprise economy, or of political democracy. Stable employment can readily be achieved by communism, socialism, or some other form of statism. But the price is much too high—being the sacrifice of individual freedom and enterprise, of democratic institutions, of efficient production, and of economic progress. Nevertheless, the wastes and hardships that accompany a major depression are likewise unbearable. In fact, they provide such fertile soil for the ideology of statism that it is unlikely that either democracy or private enterprise would survive a repetition of the 1930's. The challenge is therefore a vital one.

Some variation in employment is inevitable under a private enterprise system. In fact, fluctuations within reasonable limits serve a constructive purpose. After a period of increased investment which involves innovations, a pause is necessary to consolidate the gains. Mistakes must be corrected and inefficiencies which inevitably creep into business must be weeded out. But the correction should be held within constructive limits. If it is permitted to go further, efficient enterprise is sacrificed and general economic disorganization follows.

There is good reason to believe that much can be done with instruments now available to moderate the swings of the business cycle. The approach should be mainly through *framework* controls of the Federal government, the most important of which fall in the fiscal and monetary field. Except in extreme emergencies, controls should not obstruct the functioning of the market and its system of freely determined prices.

By and large the price system should provide the guiding hand to both production and consumption. In no other way can consumers' choices so effectively dictate the most efficient uses of labor and other basic resources. One of the strongest features of private enterprise is that most administrative decisions are made by business men who, being familiar with the facts, are most competent to make them. This feature should be preserved. Experience during the war provided a healthy appreciation of the inability of government officials to make decisions wisely in regard to business management and prices. Space permits no more than a suggestive outline of fiscal and monetary policies looking toward stabilization.

Fiscal Policies. For purposes of discussion, Federal fiscal policies may be classified as follows: (1) revenues; (2) expenditures; (3) debt management; and (4) loans, grants, and guarantees. In view of the greatly enlarged role of the government in economic affairs since the early 1930's, its fiscal policies influence the level of employment in far greater degree than in earlier periods.

1. Federal revenues from taxation should balance expenditures at a high level of employment and should provide a sizable cash budget surplus at maximum employment. For this purpose, high-level employment may be defined as about 92 per cent of the total civilian labor force. During 1948 the total force averaged about 61.5 million so that there would have been 56.6 million employed and 4.9 million unemployed at the 92 per cent level. Actually, unemployment averaged something under 2 million for the year, so that there would have been a sizable budget surplus.¹ This would also mean that a budget deficit would emerge when employment fell below the 92 per cent level and that the deficit would increase as employment declined.²

While constant effort should be made to improve the equity of the tax structure, the rate level should be kept as stable as possible. However, a reduction in the level would be justified to combat extreme depression, and a rise in the level should be employed to meet the threat of extreme price inflation. The general tax level policy should be to vary the rate with changes in Federal expenditures only to the extent necessary to produce a balanced cash budget at the selected point of high-level employment (about 92 per cent of the civilian labor force). The chief merit of this proposal is that the budget deficit would give support to the na-

¹ *Monthly Labor Review*, December, 1948, p. 656.

² A somewhat similar proposal has been made by the Committee for Economic Development in *Monetary and Fiscal Policy for Greater Economic Stability* (New York, 1948), p. 41.

tional income and expenditures during depression and thereby exert a moderating influence. On the other hand, the budget surplus in boom periods would have a restraining effect and would lessen the danger of excessive price inflation.

2. Federal expenditures should be planned with a view to moderating variations in employment. An automatic tendency in this direction exists as an incident to unemployment insurance and relief payments. These payments rise as depression deepens and decline as full employment is approached. In addition, expenditures on useful public works, carefully blueprinted in advance for the purpose, should be undertaken during depression. Conversely, such expenditures should be curtailed somewhat in the advanced stage of prosperity if price inflation appears to be probable.

3. A material contribution to stability can be made by Federal debt management. During depression, borrowing operations—both for new money and refundings—should be planned with a view to maximum stimulation of private expenditures. In general, this would mean borrowing from the commercial and Federal Reserve banks and redeeming debt in the hands of individuals and other nonbank interests. Opposite methods should be adopted if price inflation threatens during a boom. That is, the budget surplus should be used to retire securities held by the commercial and Federal Reserve banks, and debt should be shifted in so far as possible from the banks to individuals and other nonbank interests.

4. Variations in the amounts of Federal loans, grants, and guarantees may also be utilized with appreciable effects. During depression greater liberality would stimulate private expenditures; during prosperity curtailment of these activities would work against inflation.

Monetary Policies. In addition to fiscal policies, monetary controls can also contribute importantly to economic stabilization in ways which have already been discussed. To repeat in summary form: When price inflation threatens, the Reserve authorities may exert a strong restraining influence by selling securities, raising legal reserve requirements, raising the Reserve bank discount rate, raising margin requirements on speculative loans, tightening the terms of consumer credit, and by publicity and counsel. These steps should of course be taken in proper combination so that together they form a consistent and effective program. During depression these methods may be reversed in order to promote recovery.

Experience has proved that monetary controls are more effective in a boom, if applied, than in a depression. The greatest problem when inflation threatens is the lack of courage to use the restraining powers in a

timely manner and thereby to assume the risk of causing a business recession. During the postwar period, as already indicated, a new obstacle to use of these powers has arisen in the shape of the support program for Federal security prices. This program has at least temporarily blocked the effective use of any of the traditional credit control measures. It should also be pointed out that even if these measures are applied they operate only through affecting the amount, cost, and availability of money. The Reserve authorities do not have any direct influence on that widely variable factor, the velocity of circulation of money. Nevertheless, if utilized, their powers of restraint are very strong.

During depression the circumstances bearing on the effectiveness of monetary controls are quite different. There is little difficulty in employing the measures of control, since all groups are desirous of recovery. Instead, the main trouble lies in the ineffectiveness of monetary measures. Abundant bank reserves and low interest rates unquestionably restrain the forces of decline and promote expansion. But the 1930's conclusively proved the inadequacy of these measures to offset a tide of deflation. Profit opportunities must be visualized by business and prospects of assured income must impress consumers before excess bank reserves will be utilized.

The monetary controls just enumerated should be amalgamated with fiscal policies promoting economic stabilization into a consistent over-all program. Such a program, if wisely and courageously applied, holds promise of moderating materially the extremes of booms and depressions. It must be emphasized, however, that the scope of the problem of economic stabilization is much broader than that of fiscal and monetary policies. While they stand at its core, a complete program of economic stabilization would reach well beyond to many other aspects of the economy. Among other things such a program would also embrace the environment of private enterprise; the maintenance of competition; regulation of monopoly; adjustability of the price and wage structure; policies of business management; policies of commercial banks and other financial institutions; policies of labor unions; policies of agriculture; attitudes of the consuming public; and broad international relationships.

ORGANIZATION FOR FISCAL AND MONETARY MANAGEMENT

Attainment of the basic objectives, including fiscal and monetary goals, depends in large part on proper organization of the Federal government. Before 1946 there was little coordination of activities of departments, agencies, and the committees of Congress in terms of an integrated na-

tional policy. Activities were carried on in separate compartments with the result that glaring inconsistencies were frequently present. But promising new developments have occurred since 1946, and there is a growing awareness of the necessity of improvement in government efficiency if it is to meet its responsibilities under modern conditions.

One of these new developments was the Employment Act of 1946, approved February 20, 1946. Another was establishment on July 7, 1947, of the Congressional Commission on the Organization of the Executive Branch of the Government, headed by Herbert Hoover. The Commission's investigation has been wide in scope and was presented to Congress in a series of 20 reports. The McClellan-Dawson bill, sponsored by it, and introduced into the Eighty-first Congress would give the President permanent powers to abolish, transfer, consolidate, and coordinate all executive agencies of the government.

The Employment Act of 1946. Passage of the Employment Act of 1946 was of such marked significance that a summary of its main provisions is necessary. The broad declaration of policy was as follows:

The Congress hereby declares that it is the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy, with the assistance and cooperation of industry, agriculture, labor, and State and local governments, to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power.¹

The President was required to transmit to the Congress at the beginning of each regular session an Economic Report to be referred to the Joint Committee on the Economic Report. This report was to set forth:

... (1) the levels of employment, production and purchasing power obtaining in the United States . . . ; (2) current and foreseeable trends . . . ; (3) a review of the economic program of the Federal Government and a review of economic conditions affecting employment . . . ; and (4) a program for carrying out the policy declared in section 2, together with such recommendations for legislation as he may deem necessary or desirable.²

The President was also authorized to transmit supplementary reports to the Congress. These have taken the form of the Midyear Economic Reports of 1947, 1948, and 1949.

¹ Section 2.

² Section 3.

A Council of Economic Advisers was created in the executive office of the President, consisting of three members each of whom "as a result of his training, experience, and attainments, is exceptionally qualified to analyze and interpret economic developments, to appraise programs and activities of the Government . . . , and to formulate and recommend national economic policy to promote employment, production, and purchasing power under free enterprise."¹ Members were to be appointed by the President with the advice and consent of the Senate.

The duties and functions of the Council were as follows: (1) to assist the President in preparing the Economic Report; (2) to gather and interpret information concerning economic developments in the light of the broad purposes of the Act; (3) to appraise the programs of the Government and to make recommendations concerning them to the President; (4) to recommend to the President national economic policies to maintain maximum employment and production, and to promote free competitive enterprise; (5) to consult with such representatives of industry, agriculture, labor, consumers, state and local governments, and other groups, as it deems advisable; (6) to utilize the services, facilities, and information of other government agencies and private research agencies to the fullest possible extent in order to avoid duplication and expense; and (7) to make an annual report to the President.

A Joint Committee on the Economic Report, composed of seven members of the Senate and seven members of the House of Representatives was established. Political parties were to be represented as nearly as possible in proportion to their numbers in the Senate and the House. The functions of the Joint Committee were:

. . . (1) to make a continuing study of matters relating to the Economic Report; (2) to study means of coordinating programs in order to further the policy of this Act; and (3) as a guide to the several committees of the Congress dealing with legislation relating to the Economic Report, not later than March 1 of each year to file a report with the Senate and House of Representatives containing its findings and recommendations with respect to each of the main recommendations made by the President in the Economic Report, and from time to time to make such other reports and recommendations to the Senate and the House of Representatives as it deems advisable.²

Features of the Act. Certain outstanding features of the Act are evident from the foregoing summary.

First, an active responsibility is assigned to the Federal government to promote maximum employment and production in whatever manner is deemed practicable.

¹ Section 4.

² Section 5.

Second, a coordinated effort is to be made by the Administration and Congress to develop and effectuate wise economic policies. The Council of Economic Advisers is to consult not only with the executive departments and agencies of the government, but also with industry, agriculture, labor, consumers, state and local governments, private research agencies, and other groups.

Third, the promotion of free competitive enterprise is specifically included as an aim of the Act. Interpretations by the Council point out their policy of chief reliance on the competitive price mechanism to guide production and consumption. Individual enterprises are to make most of the decisions pertaining to their operations. Thus, the Council opposes a controlled economy in the sense of usurping the traditional province of business management. The role of the government is viewed as that of establishing proper over-all national policies, facilitating and complementing private enterprise, and of regulating monopoly and other business practices which threaten the general welfare.¹

Fourth, the Act is based on the beliefs that wide economic fluctuations are not inevitable in an environment of private enterprise and democracy, and that by mobilizing the brains of government officials, business management, labor leaders, and others, it will be possible materially to moderate such fluctuations.

Last, the Council of Economic Advisers is a purely consultative and advisory body without any administrative powers. It can carry out the basic purposes of the Act only by influencing the programs and decisions of the Administration, Congress, and outside private interests. It is not designed as a superstatistical and research agency but as a small body of highly competent economists assisted by a relatively small staff.

Prospects. The period of operation is too short to make more than a preliminary appraisal of the record of the Council. It has functioned thus far under conditions of abnormally high effective demand arising from the two preceding decades of depression and war. The acid test will come when shortages have been largely made up, and when demands of consumers and business begin to flag. A kingdom may be won, and little can be lost. Even a partial moderation of the ravages of depression and price inflation would be a vast contribution to human welfare.

As time goes on, the Council should be judged by its contribution to welfare in light of the tools and methods at its disposal. After two centuries of recorded cyclical fluctuations, it would indeed be a miracle if a mere advisory agency could abruptly change the pattern of economic

¹ Council of Economic Advisers, *Third Annual Report to the President*, December, 1948, pp. 11-12.

behavior. The problem facing the Council is too complex and deep-seated for reasonable persons to expect such a miracle. Experimental, trial-and-error methods must be employed. This will require patience and farsighted cooperation on the part of all responsible parties, including individual consumers.

There is good reason to believe and to hope that the Council can accomplish much in the direction of shaping wise national policies. But it seems unlikely that its best efforts can lead to anything like stabilization of employment and production at maximum levels. This goal can be realized if at all only when the executive establishment of the government is granted wider authority by Congress to adjust flexibly all programs relevant to economic stabilization. For example, the Federal tax level (including social-security taxes) and certain expenditure programs might be set up by Congress with some leeway, say 5 per cent, for change by the President or by an appropriate agency. A precedent for such procedure already exists in the monetary controls exercised by the Board of Governors of the Federal Reserve System. There is another precedent in flexible tariff rates. Clearly, the objective of stable production at a high level cannot be attained, or even approached, without proper organization and adequate powers.

The urgent importance of the matter is such that Congress should immediately provide for an exhaustive study of all aspects—including the fiscal and monetary—of the problem. Without such a study there is not an adequate factual and analytical basis on which to develop an organizational program. A bipartisan commission similar to the recent Commission on Organization of the Executive Branch of the Government would promise the most in tangible results. The investigation should enlist the most competent minds in the country, and it should result in recommendation of a definite program to be acted upon by the Congress. Only in some such manner can a program tailored to this challenging and imperative task be developed.

Review Questions

1. Summarize the basic objectives of the economy.
2. "Once the broad goals of the economy are accepted, it is clearly evident that monetary policies should be designed to foster them." Support this statement.
3. Apply the test of consistency with basic objectives to the traditional gold standard that existed during the four decades prior to the First World War.
4. Test the stable-price-level standard in terms of the basic objectives.
5. What is meant by the maximum welfare standard?
6. Discuss the relation of control of bank credit to the broader problem of monetary management.

7. Indicate the large responsibilities of Congress and the President with respect to management of the Federal debt.

8. Summarize the arguments for and against the wisdom of Reserve bank support of the government bond market in the vicinity of par during 1948. Give your own opinion of this policy, and give reasons.

9. Why does the problem of economic stabilization present such a great challenge to this generation? Discuss fully.

10. Explain the ways in which Federal fiscal policies can be shaped in order to promote economic stabilization.

11. Point out the ways in which monetary controls can contribute to economic stabilization.

12. Is coordination of fiscal and monetary controls necessary in order to promote economic stabilization?

13. Summarize the provisions of the Employment Act of 1946. What are its outstanding features?

Advanced Questions and Problems

1. "No other group of Government economic policies exerts a more profound influence on a private enterprise economy than those in the monetary and fiscal fields." Develop the ideas implied by this statement.

2. "When the Federal debt is expanding it makes a material difference from a monetary standpoint to whom the new securities are sold." Explain this statement.

3. "With the huge increase in the Federal debt, the interest rate basis on which it is offered becomes a matter of large national concern." Develop this statement.

4. "Experience has proved that monetary controls are more effective in a boom, if applied, than in a depression." Discuss this statement.

5. Appraise the record and prospects of the Council of Economic Advisers.

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