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MONEY, DEBT AND ECONOMIC ACTIVITY

by

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PRENTICE-HALL, INC.

New York

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70 Fifth Avenue, New York

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First printing . . . . May, 1948
Second printing . . . October, 1948
Third printing . . . . July, 1949
Fourth printing . . . . April, 1952

PRINTED IN THE UNITED STATES OF AMERICA

In Memory of

HASTINGS HORNELL HART

PREFACE

EVENTS SINCE 1914 have been fascinating (if also disconcerting) for students of money. We have witnessed astronomical inflations, and the world's longest and deepest depression. Money the world over has been virtually divorced from gold. Interest rates have ceased to play their age-old part in the market system. The established uniformities of "velocity of circulation" have broken down. Experiences of World War II have upset our traditional skepticism of price control; experiences since then have reminded us of the inadequacy of our forecasting methods.

The subject of "money and banking," with so much new experience to interpret, tends to lose coherence. Only a few years ago, money was the prize course in many economics departments—the surest to command spontaneous interest among students, and the one in which the teacher had the strongest sense of showing how useful economics could be. Today, the subject of money looks much more drab. Courses in the "fiscal policy" aspects of public finance, in business cycles, in international trade, and in "pure theory" now eclipse courses in money. They are so stimulating largely because so much of their subject matter has been appropriated from "money and banking" courses.

This incorporation of monetary topics is a sound development in the teaching of these other subjects. But it is not a reason for letting money and banking become merely a collection of loosely related fragments that other courses have not yet taken over. On the contrary, the course in money can best interpret the record and show how to fit the different parts of economics together. Ideally, we might rely for "synthesis" of the student's thought primarily on an advanced course in economic theory, stressing dynamic aspects. But in the present unsatisfactory state of dynamic theory, money is overwhelmingly the best focus for much of what the economist has to present.

Such novelty as I can fairly claim for this book lies in its stress on cross-connections—both between topics within the field of

money, and between money and other fields. I should hesitate to claim novelty for the substance of the argument at any point (unless perhaps for the treatment of uncertainty in Part II). The pattern of cross-connections, too, will strike many students of money as familiar: it is along the lines of contemporary economics —one of those things that are "found and not made." The contribution I hope I have made is one of bringing useful ideas out from between the lines of the literature.

This is an institutionalist book. It starts out from institutions: accounting practices, debt, the banking structure. The key theoretical concept of "liquidity" is shown as something that grows out of these institutions. The importance of facts is stressed throughout. I have tried to convey a sense of the evolution of economic institutions—avoiding the pitfall of letting notions of evolution suppress the question *what* it is that changes. "Noneconomic" influences on prices and "noneconomic" restrictions on policy are frankly recognized. Above all, the book is institutionalist in its concern for getting an economics which can guide public policy.

At the same time, this is a theoretical book. Its core is in the theoretical chapters (Chapters VII and VIII) dealing with the payments approach and cash-balances approach. In Part I, the theory is largely between the lines, and not at a very high level of abstraction; but Part I is designed, nevertheless, to serve as introduction to the more explicitly theoretical material which follows. In the "applied economics" of Parts III, IV, and V, theoretical argument is used freely. In short, I operate on the principle that institutional and theoretical analysis are "completing" rather than "competing" goods.

In laying out the book, I have not intentionally passed over any monetary topic (however elementary) as something the reader was already supposed to know. On the other hand, I have not avoided any topic which I myself could handle, for fear of its being too difficult for students. It seems to me that practically everything about money is comprehensible to an intelligent reader who is willing to give the subject sustained attention and to face the fact that the views he may have picked up casually in high school or by listening to the radio may have to be screened and straightened out with an eye to possible bias. I have not tried to hide the

existence of loose ends in monetary analysis. But I am confident that enough of the structure I present will withstand criticism to keep the reader from being left helpless in the face of the policy problems of our times.

To keep the book down to convenient size, I have been forced to drop some of the traditional "money and banking" material. I do not regard this necessity as a misfortune. Every subject must, sooner or later, pass through a phase of dropping excess baggage; such a phase is due in money and banking. But a check of the index and table of contents will show that I have found space for most of the traditional topics which are relevant to present-day policy problems. What is omitted is chiefly (1) detail on bimetallism and on banking history, and (2) detail on bank operations, legal instruments, functions of particular bank officers, and so forth. The first group of topics has lost current relevance. The second group is current enough, but its value is chiefly for students who need to know what it feels like to work in a bank because they aim to get banking jobs. Even this restricted group of students, in my opinion, can better spare this material than the materials it would displace. Such details can readily be learned on the job; the broader economics of money cannot.

This book is neither Keynesian, anti-Keynesian, nor on the fence. On the other hand, it is definitely not *pre*-Keynesian. It seems to me that the time has come to take Keynes matter-of-factly as one of the important sources of contemporary ideas. It would be absurd today to be for or against John Stuart Mill; and it is not the economics of Karl Marx that constrains people still to be for or against him. Why be for or against John Maynard Keynes? If we try to reject Keynes's ideas *in toto,* our thinking is impoverished, for he was the most fertile monetary thinker of the interwar years. If we feel obliged to follow a Keynesian "line," we are forced both to reject too much of the old economics and to block off too many promising new lines of inquiry.

The most direct intellectual influence on this book is probably that of J. R. Hicks. His "Suggestion for Simplifying the Theory of Money" (in *Economica,* February, 1935) gave direction to my monetary thinking. In particular, his proposal to develop the core of monetary theory out of banking theory, "regarding every individual in the community as being, on a small scale, a bank,"

is the clue from which I worked out the pattern of Parts I and II in this book. But my treatment of uncertainty diverges rather sharply from that of Dr. Hicks. This is the point at which, it seems to me, the literature is weakest—"classical" literature, Keynesian literature, and literature of compromise alike. Corrections for uncertainty factors lead to a convergence of the different points of view. It is my hope that in Part II I have brought this convergence to a stage where we can use both Keynesian and "classical" reasoning on our key problems, and not have to forget about one before we start using the other.

For permission to use copyrighted materials, I am indebted to the Committee for Economic Development, Professor Paul H. Douglas, Mr. Irving N. Fisher (on behalf of the estate of the late Professor Fisher), Professor Edwin Frickey, the Harvard University Press, The Macmillan Company, the National Bureau of Economic Research, Professor F. A. Pearson, Mrs. Warren M. Persons, the University of Chicago Press, and John Wiley & Sons, Inc.

Besides the obligations which the footnotes will make clear, I should record the influence of Professor Lloyd W. Mints and the late Professor Henry C. Simons, of the University of Chicago. At several crucial points (particularly Chapter X), I have been strongly influenced by Dr. Gardiner C. Means. Discussions with businessmen and economists during my two years with the Committee for Economic Development are reflected at many points; the estimates of cash stocks in the Appendix were also worked out during this period, and the chartbook material (particularly in Part III) developed out of wall charts designed for CED discussions. My colleague, Professor James W. Angell, was so friendly as to criticize early drafts of Parts II and IV, to their very great benefit. Professor Arthur D. Gayer, Professor G. L. Bach, and Mr. Charles Hoffman worked through the whole manuscript, catching up errors of substance, presentation, and arrangement. Miss Lillian Margot, of Prentice-Hall, contributed many shrewd insights in the editing process. I am indebted to Miss Joan Gordon for clearing up the illegible spots in my home-made typescript, and preventing it from disappearing in a quagmire of work papers.

A. G. H.

New York

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INTRODUCTION

A. Why Study Money?

Money, Employment, and Prices. Is it healthy to be interested in the study of money? People think of the subject as a desert of technicalities; a part of economics where we never talk about human beings; a study of empty symbols when we might be studying underlying realities. Is there any reason beyond force of habit for keeping money on the active list of economic problems?

The answer is another set of questions: Do you care whether we have "full employment" or whether workers are forced to stand idle? Do you care whether the buying power of your dollars is eaten away by rising price levels? Do you care whether public policies toward employment and price levels are practical and effective? Do you care whether those policies require detailed government supervision of a wide range of private decisions, or whether government influence can be kept fairly limited and impersonal?

If you care about these questions, you need to study money. Explanations of unemployment and of price gyrations are largely monetary. The most promising remedies proposed are "monetary-fiscal" measures.

Since the importance of money grows out of policy issues, this book is policy-oriented. That is, relevance to policy issues is the test of what belongs in the book and guides the study of institutions and theories. By "policy-oriented" I do *not* mean that this book aims to sell a specific line of policy measures. (I have some policy preferences which I do not try to hide; but whether you agree or disagree need not affect the usefulness of the book.) Economists are often accused of "knowing all the answers." This is something to beware of, especially at the start of a study. But it is the business of the student of economics to come to *know the questions.* If he succeeds in this, he can contribute to the social process of finding answers.

Monetary versus "Real" Analysis. Among non-economists, the monetary side of economic life is often taken to be all-important. Economists are forever struggling against a public tendency to take things at face value and ignore what we call in economics "real" considerations. For instance, we have to deny, loud and often, the proposition that whatever raises prices of real estate and stock exchange securities enriches the nation, whereas whatever lowers such prices impoverishes the nation. We have to insist on the importance of "real wages" as against money wages. Most annoying of all, we have to skirmish perpetually with the tribes of money cranks who propose to bring in the millennium, on very short notice, by introducing a new type of money—Technocrats, Social Credit advocates, melting-money fans (such as those who invented "Thirty Dollars Every Thursday"), Townsendites, and so forth.

In reaction to this muddled thinking, economists for generations have sternly insisted on analyzing the economy in "real" terms. Using "real" terms means stressing the actual physical quantities produced and consumed, rather than merely their money value; the value of a commodity in terms of other commodities; the purchasing power of incomes, rather than their nominal size. Money has been pictured as merely a "veil" which shrouds the true nature of the economic system. In hopes of exorcising the monetary devil, the theory of prices was labeled the theory of *value;* and that theory was often described as a theory of exchange under barter, which it emphatically is not.

This reaction went dangerously far, and for some years now, economists have been busy correcting its excesses. It is true, of course, that money values are not identical with social welfare, and that money measures must always be accepted with something more than a grain of salt. But the way our economy works depends very much on its money system and on our people's monetary habits of thought, and few economic problems can be solved without monetary analysis.

When economists were preoccupied with "real" problems, they felt that monetary analysis need only explain the general price level, leaving all other problems to other branches of economics.[1]

[1] For a clear-cut example, see Irving Fisher's *Elementary Principles of Economics* (New York: Macmillan, 1912).

This view is no longer accepted. We now feel that almost every branch of economics has monetary aspects. The study of money involves us in study of public finance, the capital market and debt system, and even the problems of labor and monopoly, besides the traditional sphere of "money and banking."

Plan of the Book. The goal of this book is the analysis of the policy issues in Part V. As was said above, the choice and arrangement of the other material in the book points toward the study of policy.

The rest of the Introduction links together the key concepts needed in the study of money: money, unit of account, debt, near-moneys, credit institutions, and payments.

Part I deals with *institutions*—those which make up the "debt structure." The core of Part I is banking—involving not only the mechanics of banking, but also the standards by which bankers choose their assets, and the mystery of "liquidity." These standards not only explain the way the banking system behaves, but they also give a clue to the way people who are not bankers choose *their* assets—a clue which will be useful in Part II.

Part II deals with *monetary theory*—that is, with economists' views of the relations of the liquid holdings of the public, money payments, and prices. This second part starts with relatively primitive theories focused entirely on prices, and goes on to modern theories focused largely on employment.

Part III deals with *business fluctuations.* I avoid the bottomless pit called the "theory of basic causes," where professional disagreements are endless. I discuss, not how fluctuations *originate,* but how they *develop.* Here there is a fair consensus among economists. One of the strongest points of agreement is the importance of monetary forces—both at "turning points" (peaks and troughs) and during cumulative expansions and contractions. It is hopeless to present much factual evidence on fluctuations in brief compass. But I have tried to show *what kind* of evidence underlies the argument, and to bring in a few key items.

Part IV deals with *international monetary relations.* Monetary mechanics come up again. I look especially hard at the way business fluctuations cross national boundaries—and the way foreign fears of American fluctuations poison international relations.

B. Money and the Unit of Account

"Money" Defined. "Money" is a term by which different economists mean different things. So we must tie its meaning down at the outset by a definition.

The definition I use in this book sticks close to the ordinary conversational use of the word: *"Money" is property with which the owner can pay off a definite amount of debt—with certainty and without delay, even though he is dealing with a stranger.* In the United States the articles which fit this definition are "coins" and "paper money"—that is, certain pieces of metal and of green paper, bearing official stamps of the United States Government.

What is money depends on community usages. A thing may be money at one time and place but not at another. Thus, an ordinary American "dollar bill" is money in New York but not in Tibet, and may or may not be money in Canada or Mexico.

The law makes some things "legal tender": that is, it binds creditors to accept these things in payment of debt.[2] Whatever is legal tender is money. But not all money is legal tender. During the 1920's, for example, most United States money in denominations larger than $1 consisted of Federal Reserve Notes, which were not legal tender. Creditors had a legal right to insist that debtors change their Federal Reserve Notes into forms of money that were legal tender; but it never paid to enforce this right. This fact suggests an alternative definition of money: *"Money" is property which community usage treats as if it were legal tender.*

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[2] If you owe somebody a debt and offer to settle it by handing over a used automobile, or by doing a job of work, or even by making out a check, the creditor has the right to refuse settlement. But there has to be some sort of settlement that he cannot refuse when the debt comes due for payment. If you offer legal tender and the creditor balks at taking it, the courts will back you up. Paying the money into court protects you against further interest charges, penalties for late payment, tying up of property you may have pledged as security, and so forth. On all phases of this subject, see Arthur Nussbaum, *Money in the Law* (Chicago: Foundation Press, 1939), Chapter I, section 4 (pp. 37–53). This chapter is very helpful on the whole question of the definition of money.

Under the Legal Tender Act of 1933, *all* American coin and paper money is now legal tender. Incidentally, this Act did not carry forward the old rules limiting the sums for which small coins are legal tender, so that we sometimes hear of debtors paying large sums in pennies just to annoy creditors.

As I define money, you can easily think of things which are almost money but not quite. "Moneyness" is not a yes-or-no affair, but a more-or-less one. In particular, a checking account ("money in the bank," as we say loosely) is almost the same as having money in your pocket. People have so much more "money in the bank" than they do pocketbook money that checking accounts have much greater monetary importance than money proper.

Because money (as I define it here) has no monopoly of moneyness, some economists prefer a broader definition—including checking deposits, or including all bank deposits. The trouble is that wherever you draw the line, there is something just outside it which has almost as much moneyness as the last item you included. But under a broad definition there is a temptation—which our narrow definition avoids—to ignore the moneyness of things you don't happen to include as "money." [3]

Debt. A "debt," formally speaking, is an obligation to pay money—in a definite amount at a definite time and place. Since I just defined money in terms of the ability to settle debt, we seem to be going around in a circle.[4] But a closer look at debt shows us a more useful definition.

More fundamentally, *"debt" is negative wealth, stated in a unit of account.* Negative wealth is a matter of everyday experience. If you have a pound of sugar in the cupboard, that is wealth—on a small scale. If you borrowed a pound of sugar from next door yesterday, to be returned today, however, *your* sugar is zero—you have sugar, but it is your neighbor's. Suppose that when you go to the cupboard, you find that the children have wickedly taken the sugar and mixed it in their mud pies. Then *your* sugar is less than nothing—you have to scurry around and get a pound before your sugar will be zero. You have to get two pounds before you own one pound, because the borrowed sugar counts as minus one pound. Similarly, a *debt* is something you have to

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[3] Watch out for errors of this sort in Part II, where we shall operate much of the time with a concept of "cash"——including money plus bank deposits.

[4] Such a circle in a set of definitions should not worry us too much, however, even if we cannot get out of it. Philosophers often classify some terms in a discussion as "indefinable," meaning that in the set of terms there are fewer *independent* definitions than there are terms. But this fact does not prevent us (or excuse us) from saying comprehensibly what our terms mean.

subtract from the amount of property in your hands to find out how much *your* wealth is.

The difference between "owing" a pound of sugar and owing a debt is that the unit of *debt* is not physically concrete. When you borrow physical goods, you may be pledged to hand back a specific physical object which somebody else owns but has let you use, such as a borrowed umbrella.[5] If not that, then you are pledged to hand back a quantity of something measured in cubic feet, pounds, bushels, or gallons—units which are defined by reference to museum specimens actually on hand at the Bureau of Standards in Washington. But the Bureau of Standards does not have a specimen of a unit of account on hand. There isn't any way to make a specimen; the modern unit of account is abstract.

The Unit of Account Defined. *A "unit of account" is a unit* (such as the dollar) *in which people value commodities and services sold, reckon up wealth, and calculate debts.* All civilized societies have such units. So do many (if not all) of the societies we choose to brand "primitive." The whole economic thinking of western peoples is permeated by units of account; it is doubtful whether men could think "economically" without their help.

Under our definition of money, the units in which money is counted are necessarily units of account. But there may be other units of account. A few centuries ago, it could and did happen (through wear on old coins and failure to mint new ones) that most of the coins in circulation would come to be thin and underweight. When this happened, some valuations were made by the actual number of coins, others by the equivalent number of full-weight coins. This practice of valuation meant having more than one unit of account. During the American Civil War, some accounts were kept in gold dollars which did not circulate, although most accounts were kept in current dollars, corresponding to the circulating Greenbacks. There were two units of account, one of

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[5] In such cases, though, the sense of obligation to repay sometimes wears thin. As a poet I can't identify has put it:

"The rain falls on the just
And on the unjust fella,
But mostly on the just, because
The unjust has the just's umbrella."

which had a form of money attached.[6] During the great inflations in Germany and Austria in the early 1920's, many accounts were kept in Swiss francs or American dollars, although these currencies were not in actual circulation there.

Tendency toward a Single Unit. Logically, there could perfectly well be many units of account in use at any one time and place. The value of shoes or ships or sealing-wax may serve as a unit; in fact, as we shall see shortly, purely abstract units are common. We have just looked at several historical cases of side-by-side units of account in which there was *only one* type of money. Besides these, there have been side-by-side units each linked to a *separate* type of money.

Foreign money is often used in frontier regions and in very small countries overshadowed by their neighbors. Sometimes foreign money has circulated alongside domestic money, both units being used in accounting. This happened in the United States in the early days of the federal constitution.[7] Both gold and silver served as money, without any machinery for keeping their values at a fixed ratio, in most western countries well into the nineteenth century.

Side-by-side units of account are always a nuisance. In modern times, governments have worked for standardization. Each national government has set up its own official unit and tried to prevent use of side-by-side units. Commonly the courts have so construed contracts using dual units as to push the contracting parties back into the use of official units.[8] Even internationally there have been efforts to cut down differences between different units of account—notably the "Latin Monetary Union" before World War I, under which the currency units of France, Italy, Belgium,

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[6] After the American devaluation of 1933–1934, some holders of "gold bonds" claimed that their bonds should be valued in a unit-of-account "gold dollar" which was worth more than the dollar proper. This claim was held by the courts to be invalid—not so much incorrect as impracticable to enforce—and was disallowed.

[7] The expression "two bits" is a relic of the use of Spanish (that is, Mexican) currency and accounting units.

[8] Compare the "gold clause" cases in the United States, cited above. Another instance was the handling of life insurance and bank accounts in Austria during the 1930's. In Austria, people's confidence in the new "schilling" established after the great inflation of the 1920's was so weak that many insisted on having life insurance, bank balances, and the like, payable in foreign-currency units. But when in 1931 it came to be hard to keep up the value of the Austrian schilling relative to other currencies, the government forced reconversion of these claims to schillings at standard rates.

Switzerland, and Greece were made substantially interchangeable.

During the interwar and postwar periods, there has been a tendency to work back toward side-by-side units through the "blocking" of some bank accounts. "Blocked" accounts began to appear during the 1930's, when some governments sought to limit transfers of funds into foreign currency, and restricted the use of the funds of foreigners or of emigrants. Wartime controls "blocked" accounts that might be used to help the enemy. In Europe since the war, "blocking" of bank accounts has been used in several countries to check inflationary spending of funds piled up during the war. When "blocked" funds are allowed to be used for some purposes but not for others, as often happens, accounting in lines of business where their use is allowed must sometimes be in special units corresponding to the blocked funds. It is too soon to know whether this sort of multiplication of units of account will continue or be reversed in the postwar period. The postwar monetary agreements are aimed to reverse this trend, but their success is still uncertain.

Abstract Units. Monetary evolution has not only standardized units of account, but has made them more and more abstract. Most of the oldest names for units of account are also names for units of weight, conspicuously the British "pound." [9] In historic times many units have been related to weights of *metals*, commonly gold and silver. But units of account have sometimes been tied to other commodities. The word *pecuniary* (from Latin *pecus*—a cow-critter) suggests that the early Romans reckoned in cattle; and scriptural and other sources imply similar valuation elsewhere in ancient times. Americans should not forget, moreover, that tobacco provided a unit of account in colonial Virginia.

Separability of the unit of account from concrete quantities of goods is shown by the medieval practice of "debasing the currency"—for instance, deciding that a "pound" should contain only half as much silver as it used to, and changing the coins to corre-

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[9] Once corresponding to a pound ("Troy weight") of silver. The pound was once a unit used over most of western Europe. The conventional symbol for the British pound (a modified *L*) is the initial of the Latin term *Librum* (corresponding to French *livre*—do you remember reading *The Three Musketeers*?) But reckoning in pounds has died out on the Continent.

spond.[10] In the Middle Ages, however, when a unit of account was unhitched from silver or gold, it had to be hitched on again at once, because the money which circulated was itself metallic. Not until paper money was introduced, about 1700, was there opportunity for purely abstract units.

Paper money, when it first appeared, was expressed in a familiar unit of account and was convertible into metallic money expressed in the same unit. But breakdowns of convertibility were common; and when they happened, there were side-by-side units. The paper-money unit was worth less than its supposed metallic equivalent. If the paper was only a small part of the community's circulation, accounting was not much affected.[11] But if paper was the bulk of the circulation, as it often came to be, many accounting records were kept in the paper-money unit, which obviously was abstract.

Abstract units of account arising in this way grew out of traditional more concrete units. Furthermore, they were generally expected to get back into touch with concrete units by a resumption of redemption of paper notes in gold or silver (whether at or below the traditional ratio of values). In the few conspicuous cases before the twentieth century in which hopes of redemption lapsed (particularly the Continental Currency of the American Revolution and the Assignats of the French Revolution), the commodity value of the abstract unit sank so rapidly as to drive it largely out of accounting use. On the other hand, eventual resumption was taken for granted in the classical cases of the British "restriction" period during the Napoleonic Wars, the American Civil War "greenback" era, and most of the suspensions of redemption in gold or silver during World War I. Thus, experience down to 1920 or so looked as if purely abstract units

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[10] The motive for doing this was commonly profit for the money-issuing authority, which called in existing coins and repaid the owners with *the same number* of lighter coins, retaining the difference in weight of metal. On account of this practice the metallic equivalent of European units had a marked downward drift.

[11] Thus, in nineteenth-century American banking, if one bank stopped giving gold and silver for its notes, these notes went at a discount compared with notes of other banks. But instead of quoting prices, and so forth, in depreciated notes, merchants had standard quotations which they puffed up if payment was to be made in such notes. On the other hand, at times when few banks were converting their notes into silver or gold on demand but notes of many banks were at par with each other, reckoning of prices and debts on a paper basis was common.

could not stand up long; but of course the evidence was not conclusive.

During the interwar period, several further steps toward abstractness were taken. The prewar habit of using large-denomination coins was not renewed, so that dealings in money metals ceased to be commonplace.[12] Linkage of accounting units with money metals no longer gave units concreteness. It would be more nearly true to say that linkage with accounting units has made the money metals mere abstractions to most people. From 1931 on, the more mechanical relations of the various units of account with gold and silver were successively broken. Psychological ties, of course, remain. Probably it would be a shock to most people to be told that gold and silver would henceforth have no relation to the nation's money.[13] But certainly no definite understandings about a restoration of redemption in coin are being held out.

C. Money and Near-Moneys

Money Proper. Money in the United States—in fact, all over the world—now consists almost entirely of paper "bills," which are supplemented by metallic small change. These "bills" are simply evidences of debt [14]—either government debt, or debt owed by semi-official banks.

In all countries with a long history, money proper consisted at some date chiefly of "full-bodied" coins of gold or silver, with a monetary value corresponding to the value of the weight of metal included in the coins. Papers representing debt have long served to some extent as money substitutes—both as means of payment and as "liquid" assets for their holders. But until bank notes

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12 Most Americans, for example, met with gold coins during the 1920's merely as prizes and gifts; and for the present generation of college students, even this recollection is growing dim.

13 It is interesting that Hitler's Germany went to a good deal of inconvenience to pretend that the relation of the mark to gold was "normal" long after the western countries had given up the pretense for their currencies. It was only after a year of World War II that the Nazis openly announced plans for a goldless future.

14 The language on the bill is often a curious mixture of what would be expected on a promissory note and what would be expected on a warehouse certificate for commodities in storage. Witness the face of the ordinary American one-dollar bill: "Silver Certificate—This certifies that there is on deposit in the Treasury of the United States of America One Dollar in silver Payable to the bearer on demand."

came into use about 1700, no such instruments of debt were well enough standardized and widely enough known to be acceptable among strangers and thus to become money in the strict sense.

Since 1700, however, bank notes, together with paper issues representing direct debts of the government, have everywhere displaced large-denomination coins in the hands of the public. Large coins found their way into bank vaults, the man in the street preferring paper in his pocketbook. In small denominations, coins are more convenient. But "full-bodied" small coins are inconveniently small, and sometimes are in danger of being melted down for their value as metal.[15] Thus, both the public and the government mints gain by having these coins put on a "token" basis, with a metal content worth far less then the coin. If silver is included, it is for tradition's sake. To all intents and purposes, small coins are simply evidences of government debt printed on metal instead of on paper. The denomination at which coins leave off and paper begins (one dollar in the United States, ten shillings in England, ten marks in interwar Germany) is simply a matter of convenience.[16]

Until recent years, some gold coins of moderate denominations (corresponding to from $5 to $25 in American currency) circulated in western countries. England, down to World War I, had no paper note below five pounds, and one-pound gold coins ("sovereigns") were in common use. In the United States, twenty-dollar gold pieces were used in California even in the interwar period. But this use of metal was much reduced by policies to "economize gold" after World War I, and is virtually extinct since 1933.

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[15] The disappearance of American silver coins (dimes, quarters, and half-dollars) during the Civil War of 1861–1865 was due to this cause. The public took refuge in the use of postage stamps. Presently special stamp issues, without gum, were put out to serve this purpose (the so-called "shinplasters"); but they proved highly inconvenient. When small silver coins were issued again after the Civil War, they were purposely made lightweight to keep this difficulty from recurring.

[16] Our dollar, considering the recent level of prices and incomes, is inconveniently small for a first paper unit. If any coin less destructive to pocketbooks than the silver dollar were offered as an alternative, the public might prefer coin to paper at this level.

Where the smallest paper unit available has a commodity purchasing power less than the dollar has had in late years, it is commonly a relic of a period when money was worth more, left stranded by a rise of prices. Thus, in France after the inflation which succeeded World War I, greasy and tattered five-franc notes (then worth 20 cents) were common; but year by year they were largely replaced by attractive brass coins, to everybody's satisfaction.

Since that date, governments have taken direct control of gold. Even the commercial banks (and, in the United States, the central banking system) have been forced to turn in their gold and take paper in exchange. Thus, paper has almost completely displaced metal in monetary use.

Types of Money in Use. The United States has many types of coin and paper money—issued in denominations from 1 cent to $10,000. An inventory of the stock of money (outside the Treasury and Federal Reserve Banks [17]) in the middle of 1947 is given in Table 1.

Government financial difficulties have often produced new types of paper money. Our "greenbacks" and National Bank Notes are relics of the Civil War; the silver certificates and Notes of 1890 are a monument to the long-continued wrangle over silver; the Federal Reserve Notes represent the monetary reorganization after the 1907 panic, put into effect during World War I. But, since all types are kept interconvertible, type-differences among the various paper-money issues mean but little to the holder of the money.

The number of types of money, like the number of units of account, tends to dwindle. When paper money first came into use, every country had many issues of bank notes. But after about 1870, one bank note was the same as another to the ordinary man, since all were made convertible into the country's standard money on equal terms. The note-issuing powers of banks outside government control have been gradually restricted. In the United States a punitive tax drove all issues but those of federal-chartered "National Banks" out of existence between 1863 and 1870. Since 1933, the notes of National Banks have been converted into Treasury liabilities. The surviving paper issues are those of the semi-official Federal Reserve Banks and of the Treasury itself. The same thing has happened in other countries, although in Canada and Scotland there are important survivals of commercial bank notes.

Near-Moneys. The world is full of things which are near-

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[17] Unfortunately, we lack data on the types and denominations of the $1.7 billion of coin and paper money held by commercial and savings banks. So we cannot itemize the holdings of the *non-bank public.*

moneys or money substitutes.[18] If we look at money as a form of property, we see that anything with a ready market and a relatively certain price may fill its place. If money is regarded as a means of payment, of course, only checking balances at banks, traveler's checks, and the like, can be considered to do its work directly; but the form-of-property point of view is the more important.

TABLE 1

UNITED STATES MONEY IN CIRCULATION, JUNE 29, 1947, BY TYPES AND DENOMINATIONS
(In millions of dollars)

Type	Amount	Denomination	Amount
Gold coin	0	Pennies and nickels	331
Silver dollars	148	Dimes, quarters, and half-dollars	876
Other silver coin	876	Dollars, silver	148
Minor coin	331	Dollars, paper	986
Total coin	1,355	$2	64
		$5	2,078
Gold certificates (old)	48	$10	6,289
Silver certificates and Treasury notes of 1890	2,062	$20	8,996
		Total small denominations	19,769
United States Notes ("greenbacks")	320	$50	2,466
National Bank Notes and Federal Reserve Bank Notes	512	$100	4,808
		$500	430
		$1000	810
Federal Reserve Notes	23,999	$5000	5
		$10000	12
Total paper	26,942	Total large denominations	8,528
		Denominations unknown	2
Total	28,297	Total	28,297

Source: Federal Reserve Bulletin. Detail does not add precisely to totals because of rounding.

[18] The terms are here used as synonyms.

When money was chiefly full-bodied coin, articles made of the money metals were favored items of property because they were near-moneys. Silver and even gold "plate" served as table ware in wealthy households as late as the seventeenth century, and jewelry with heavy gold settings was common. With both plate and jewelry, of course, much of the value lay in the design and workmanship and would be lost if the metal were melted down for monetary uses. But, even so, the metal content stabilized the value, and the possibility of such use was often in the owner's mind.[19] Meanwhile, the plate or jewelry yielded an income of direct satisfaction to the owner. In some parts of the world (particularly India), necklaces and bracelets of coins are common even today, and make jewelry and money almost directly interconvertible.[20]

As links from gold and silver to money have weakened, and as the credit system has developed, the monetary importance of plate and jewelry has shrunk.[21] In their place, *short-term debts receivable* have become relatively more and more important, and are now the dominant near-moneys.[22]

The difference between short-term debts and long-term debts, of course, is only one of degree. Long-term debts consequently have some standing as near-moneys, although further from money than short-term debts. Somewhat further still from money are commodities and corporation stocks which are "liquid" through having a public market with continuous price quotations. But the ranking of these forms of property as near-moneys fluctuates sharply with public confidence in the stability of their prices—a

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19 Numerous examples of this attitude will be found in the diary of Samuel Pepys, dated 1660–1668.

20 As anthropologists point out, there is almost everywhere a deepseated tradition of regarding gold and silver as "treasure," which probably antedates and to a large extent explains their use as money.

21 Two other factors also helped the relative decline of gold and silver plate as monetary assets: (1) the usefulness of "plate" has been undermined by revolutionary improvements in porcelain and glass for table use, whereas silversmithing has remained relatively static; (2) more and more property has come to be held by business corporations (instead of natural persons), making it unnatural to put assets in ornamental form without direct business usefulness.

22 In view of their quick and certain convertibility into money, bank deposits (that is, the debts of commercial banks) are the closest money substitutes. Government short-term securities (particularly Treasury Bills) are also nearly the same as money. Debts of credit institutions other than commercial banks are slightly more remote substitutes for money.

fact with a good deal of monetary importance, as we shall see later.

The whole subject of near-moneys will be analyzed in more detail in the course of Part I, so that further discussion here is superfluous.

D. The Payment System

Creation of Debts by Transactions. Many people think of money chiefly as a "means of payment" for goods and services. Emphasis on this aspect of money can be overdone. But to understand the crucial relation of money to debt, we need a picture of the payment system.[23]

Our society has an elaborate division of labor, and an enormous number of separate firms, households, and government bodies involved in production and consumption. There is also an incessant flow of "transactions" in which the ownership of goods and services changes hands. Every such transaction is a "purchase" for the person or firm getting the goods, a "sale" for the person or firm parting with them.

Every such transaction creates a *debt:* the buyer owes the seller the agreed monetary value of the item sold. In "cash and carry" dealings, the debt is extinguished at once by cash payment. But the great bulk of the debts arising from each day's transactions are still on the books at the end of the day—often, much longer.

Debt Settlement by Offset. Some debts are settled by offset between pairs of people who each owe the other. If a farmer sells eggs to a storekeeper and gets his canned goods at the store, such an offset is simple. Offset also works well between stock brokers and their customers. The broker may sell stock for his customer in the morning and buy in the afternoon; then only the difference between the two debts need be settled in cash.

Occasionally offset extends to more than two dealers and becomes *clearing*. Thus, the New York stock brokers, in the course of a day's dealings, pile up debts to each other for stocks and bonds exchanged. But since only "members" of the Exchange transfer securities on its floor, every debt owed *by* a stockbroker for securities transferred into his office is simultaneously a debt owed *to*

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[23] For a more detailed picture, see Chapter VII.

some other broker for securities transferred out of his office. Furthermore, each broker is both buyer and seller; and for most brokers, debts payable and debts receivable as a result of the day's transactions are about equal. Instead of sending thousands of checks to each other, the brokers "clear" their debts. That is, each broker who is a net debtor pays a central agency the excess of his debts payable over his debts receivable. The central agency in turn pays each broker who is a net creditor the excess of his debts receivable over his debts payable. By this device all interbroker debts are settled with a minimum of bother.

Debt Settlement by Transfer of Bank Debt. The most common form of debt settlement, in our economy, is payment by check. A check itself—that is, an order to a banker to pay "money" as directed by the person to whom the check is made out—is an evidence of debt. To draw a valid check, the drawer must have a checking account with a sufficient balance "on deposit"—that is, the banker must owe him a debt, of a special type, at least as great as the face value of the check. In short, check payment represents the transfer of a debt owed by a banker; and this is what we generally mean by a "cash" settlement.[24]

The process of check settlement creates interbank debts; for the person receiving the check is only rarely a depositor at the same bank as the drawer. When the receiver of the check endorses it and sends it to his bank for deposit to his account, he transfers to his banker the claim the check represents. The bank on which the check is drawn thus comes to be in debt to the bank in which the check is deposited.

It is possible, of course, to make interbank settlements in money. But the huge number of individual items makes this difficult. At the same time, bankers in a given locality find themselves in the same situation which makes clearing convenient for New York stock brokers[25]: their debts on account of checks deposited are

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[24] Even payment in money proper, of course, is actually a debt transfer, since modern money is also bank debt (or else government debt). Occasionally debts of non-bank third parties are used in settlement—a practice once common, when "bills of exchange" representing trade debts were a standard form of instrument and when checks were not yet in use.

[25] Clearing is, of course, in fact an invention of the bankers which the stock brokers have imitated. The New York Clearing House of the bankers, the oldest in this country, dates from 1853; the Stock Exchange Clearing House dates only from 1925.

chiefly to each other, and each individual bank has debts payable and debts receivable on this account roughly of equal size. Most cities have developed clearinghouses for check settlement.[26]

Another device for interbank settlement is the use of "correspondent" relationships. For a number of reasons, most commercial banks own checking accounts at one or more other banks; and downtown banks in great centers such as New York and Chicago specialize in such bankers' business. If a bank gets a check on another bank outside its own clearinghouse, it can deposit the check with a correspondent bank where it has an account, transferring the collection problem. By a longer or shorter chain of such transactions, the check can be routed either to the actual bank on which it is drawn, or to another bank in that bank's clearinghouse, or to a bank at which it has an account. This is the basic process for collecting out-of-town checks.

Before we had the Federal Reserve System, check collection through correspondent relationships often involved long chains of transactions, and it was sometimes weeks before checks came home to roost. But under the Federal Reserve System, most checks are drawn on banks which have correspondent relations with one of the twelve Federal Reserve Banks[27]; and each of the Reserve Banks has correspondent relations with each of the other eleven. In consequence, intercity check collections can always be made through Federal Reserve channels with no intermediaries except one or, at most, two of the Reserve Banks.

The ease of debt settlement through checks explains one major job of banking in our society: banks clear indirectly the debts arising from current transactions. Conceivably, of course, a direct clearing of individual and business debts might be established. The debt of a canning factory to its workers, for example, might be offset against the debts of the workers to their grocers and the debts of the grocers to the canning factory. But direct clearing works well only on a two-way market, like the Stock Exchange, where the same individual dealer is both buyer and seller of the same sort of article. Most markets are one-way markets. The

[26] Besides their clearing functions, clearinghouses serve as trade associations of bankers. Some organizations under this title, in fact, lack clearing functions entirely.

[27] All member banks and a large number of "nonmember clearing banks" carry accounts with Reserve Banks.

canning factory sells canned goods but does not buy them; it buys labor services, but does not sell them. To get a closed circle of transactions, therefore, would require representing a vast number of individuals at the clearings, and the process would be more elaborate than check settlement.

Check settlement, however, does obtain for ordinary business dealings many of the advantages of clearing—chiefly, a simplification of business paper work. It cannot eliminate the paper work of separate settlement of separate debt items between debtor and creditor. But it does produce, in the mere process of settlement, a very satisfactory business record (the canceled check itself), which not merely serves as a receipt but commonly records the essential facts about the transaction—sometimes even of the contract under which the transaction occurs.

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Note on Alternative Points of View and Supplementary Reading

It was long customary to open books on money with a discussion of "functions of money" as "medium of exchange," "standard of value," "standard of deferred payments," and "store of value." For an example of this procedure, see R. B. Westerfield, *Money, Credit and Banking* (New York: Ronald Press, 1938), pp. 6–12. This nomenclature strikes me as confusing, because the various "functions" are not co-ordinate. Not money, but the unit of account, is the standard of value; not money, but debt, is the ordinary medium of exchange; not only money, but all wealth, is a store of value.

An admirable introduction to the problem is the first chapter of D. H. Robertson, *Money* (New York: Harcourt, Brace, "New Edition Revised," 1929). For legal background, see A. Nussbaum, *Money in the Law* (Chicago: Foundation Press, 1939), Chapters I, II, and IV.

— Part I —

BANKING AND THE DEBT STRUCTURE

— *Chapter I* —

COMMERCIAL BANKING

A. Commercial Banks among Credit Institutions

Credit Institutions and Money. "Near-moneys," as I said in the Introduction, have more monetary importance than money proper. Near-moneys today are chiefly debts. They are not so much debts of households and business firms, however, as debts of *credit institutions.*[1]

Since the term "credit institution" keeps coming up in this book, it had better be defined. A "credit institution" is *a dealer in debts. Its assets consist chiefly of cash and debts receivable; its debts payable are almost as large as its total assets.*

There are several major groups of credit institutions in the United States, all of which will be discussed in the next few chapters. These groups are:

Commercial banks—discussed in this chapter.
"Governmental corporations and credit agencies"—discussed early in Chapter II—including:
  Home loan agencies.
  Farm loan agencies.
  Reconstruction Finance Corporation.
  Federal Deposit Insurance Corporation.
"Central banks" (including the Federal Reserve Banks and parts of the Treasury)—discussed later in Chapter II.
Miscellaneous private credit institutions—discussed in Chapter III —including:
  Mutual savings banks.
  Savings and loan associations.
  Life insurance companies.
  Minor groups:
    Postal Savings.
    Stock brokers.
    Installment loan companies.
    Credit unions.

[1] As will appear later, debts of the *government* are also important as near-moneys.

The order of discussion of the private institutions reflects roughly the degree of "moneyness" attached to their debts payable. The government agencies discussed in Chapters II and III are brought in at this stage because of their influence on banking.

The place of credit institutions and of government and private debt in the national balance sheet is the subject of Chapter III. Chapter III also traces the mechanics of growth or shrinkage in the public's holding of money and near-moneys—showing connections both with private borrowing and saving practices and with government finance.

Types of Commercial Banks. The earmark of the commercial bank is *letting its creditors* (depositors) *transfer claims by check.* When you draw a check, you are getting rid of a debt you owe, by *putting your banker in debt* to your former creditor. In exchange, of course, the banker is less in debt to you. For present-day purposes,[2] this peculiarity will serve us instead of a definition: every concern which provides checking facilities to the public [3] will be considered a commercial bank.

There are two useful ways to classify commercial banks: (1) by the government controls that reach them; (2) by the class of city in which they operate. The relative importance of different groups of banks, in both methods of classification, is shown in Figure 1—as measured by deposits.

To begin with the classification by controls, there are three types of controls to watch: (1) legal provisions in bank charters, restricting the kind of business banks can do; (2) reserve requirements—that is, minimum percentages of deposits which banks are required to hold in cash assets of specified types; (3) "bank examination." [4] These controls are handled differently by the vari-

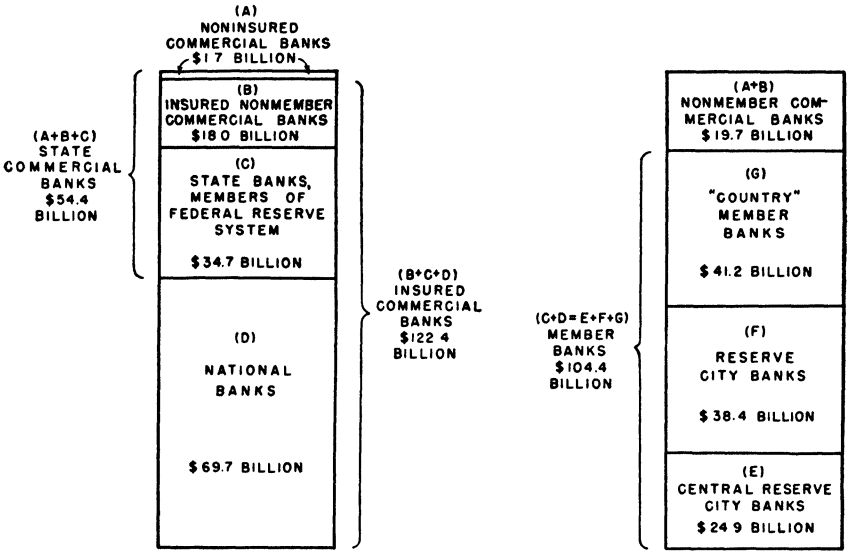
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[2] Other agencies used to provide checking facilities; for example, stock brokers gave some of their customers checkbooks in the 1920's. There was a time, besides, when the ancestors of our present commercial banks did not give their customers checkbooks, but issued transferable debts only in the form of bank notes. But for the United States since the Civil War, at least, letting check facilities define the commercial bank is at no point seriously misleading.

[3] Federal Reserve Banks also provide checking facilities, but only for banks and the federal government.

[4] This means inspection of the bank's books now and then by an "examiner," to make sure that (1) the books are correct, without errors or falsifications; (2) reserve requirements and charter provisions are followed; (3) rules for the selection of assets are obeyed.

ous states and by the federal government. Broadly, the controls are stiffer as banks become more involved with the federal government.



Source: Federal Reserve Bulletin

FIG. 1. TYPES OF COMMERCIAL BANKS. Heights on the diagram measure deposits (other than inter-bank) on June 29, 1947. Detail fails to add to the member banks total because of rounding to the nearest $0.1 billion.

The classification of banks by the control situation may be shown as a sort of totem pole (Figure 1, left-hand column). At the top of the pole are the banks on which controls sit lightest—the group (A) of "noninsured commercial banks." These banks are subject only to the rather mild charter provisions, reserve requirements, and examinations of state authorities.

The next group down are (B) "insured nonmember commercial banks." These are subject to the same state controls as group (A). Besides, they have protected their depositors by joining the Federal Deposit Insurance Corporation. This membership subjects them to FDIC examinations and FDIC rules for the selection of assets. FDIC controls are stiffer than those of the states.

The next group are (C) "state banks members of the Federal Reserve System." For the sake of the conveniences of Federal Reserve membership (to some extent for prestige), these banks have chosen to join the Federal Reserve. Membership subjects them

to Federal Reserve examinations, and to reserve requirements a good deal higher than those imposed by states.

The bottom group are (D) "National Banks." These banks are incorporated under federal rather than under state law. They are examined by the office of the Comptroller of the Currency—a bureau of the Treasury. Examination by the Comptroller is much the same as by the Reserve; but national bank charters are generally more restrictive than state charters.

Going up the totem pole instead of down, national banks are required to belong to the Federal Reserve System, so that groups (D) and (C) are all "member banks." By amount of deposits in mid-1947, national banks were 56 per cent of the commercial banking system and state member banks 28 per cent, so that member banks were 84 per cent.[5]

All member banks of the Federal Reserve System are required to belong to the Federal Deposit Insurance Corporation. So groups (D), (C), and (B) are all "insured banks." Noninsured banks hold only a little over 1 per cent of deposits; so it is fairly accurate to talk as if all commercial banks were insured.[6]

Groups (C), (B), and (A) are called "state banks." They were formerly classified by legal status as "state commercial banks," "trust companies," and "private (unincorporated) banks." But differences between "state commercial banks" and trust companies have faded, and private banks have come to be of trifling importance, so that this basis of classification is now only of historical importance.

The other classification is shown on the right-hand side of the same diagram. In this case, "member banks" are classified on a different basis. At the bottom are (E) "central reserve city banks"—that is, the downtown banks of New York and Chicago. Next come (F) "reserve city banks"—that is, downtown banks in the other chief financial centers. Other member banks (whether or not they are in cities) are called in Federal Reserve lingo "country banks" (G). This arrangement corresponds to a falling scale of required-reserve percentages and of responsibility for holding funds belonging to other banks.

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[5] By *number of banks*, however, national banks were only 36 per cent and all member banks only 49 per cent.

[6] By number, noninsured banks are nearly 5 per cent of all commercial banks.

Origins of Commercial Banking. The first important bank in the United States was the Bank of North America, set up in Philadelphia in 1781. There had been sporadic note-issuing operations in America earlier, and in Europe banking had long been established. But the first rapid growth of commercial banking here was just at the end of the Revolution. Besides the Bank of North America, commercial banks were set up in Boston (1784) and in New York (in the same year; although a regular charter for the Bank of New York was secured only in 1791).

The Continental Congress put up part of the capital for the Bank of North America and used the Bank as financial agent. The new federal government had a hand in starting the First Bank of the United States (1791–1811), and again put in some capital. This Bank stood in much the same relation to the American government as the Bank of England to the British, although in England the government held no shares.

All banks incorporated in the United States before 1838 were chartered by special legislative acts. The federal government issued no charters except that of the First Bank of the United States (1791–1811) and the Second Bank (1816–1836), which replaced it after a five-year hiatus. But states passed acts to incorporate a number of banks. There were also many "private banks" which operated as partnerships, without corporate charters.

In 1838, New York State adopted an act for "free banking." This act allowed any person or group to go into the banking business if it followed stated rules. The main requirement was the posting of collateral (bonds of New York or of the United States) [7] for all bank notes issued. Other states followed suit, and would-be bankers no longer had to persuade state legislatures to pass special acts for their benefit.[8]

The debts ("liabilities") of banks in the United States before the Civil War were largely bank notes. These purported to be payable to the bearer on demand in gold or silver. Often, however, they were not redeemable, and went at a discount. Banks also had debts in the form of deposits. Deposits grew faster than

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[7] At first, other types of collateral were accepted; but bank failures led to shortening of the list.

[8] This New York act was a major step in the development of "general incorporation laws" for business in general.

bank notes, and were considerably larger than bank notes in dollar amount by 1860. Checks were gradually coming into wider use—as is evidenced by the establishment of the first American clearinghouse in New York in 1853. But the bulk of the deposits were probably not payable on demand. In this country most people felt that you couldn't run a bank without issuing notes.[9]

The assets of banks in the United States before the Civil War were chiefly loans, the borrowers being chiefly private individuals and unincorporated firms. American bankers gave lip service to the English "real bills" tradition—requiring that loans be made only to firms in production and commerce and be secured by goods which would soon be ready for sale and whose sale would finance repayment of the loan. But in practice many bank loans were for long terms. Many loans which in form were for short terms were actually handled as long-term loans by means of renewals, and real estate was a favorite security. "Investments" held by banks were comparatively small.[10] Banks reported large proportions of assets in "cash"; but this consisted chiefly of interbank debts.

The form of banking just described worked pretty well part of the time. The Second Bank of the United States during the 1820's policed the bank notes of the state banks by insisting on prompt redemption. But its charter lapsed in 1836, just in time to leave banking unrestrained during the land-boom frenzy of 1836–1837. The 1837 crash involved wholesale bank failures. Another crash occurred in 1841, and still another in 1857. New England, under the "Suffolk Bank System," New York, under its often-amended bank laws, Louisiana, under its Act of 1842, and Indiana and Ohio, with State Banks modeled on the Bank of the United States, had banking systems that worked fairly smoothly between major crises. Through most of the west and south, however, bank failures caused by rash management or downright fraud were frequent. Holders of both bank notes and bank deposits were exposed to loss in most parts of the country most of the time.

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[9] In England, however, no London banks except the Bank of England were allowed to issue notes. Deposit banking in modern style developed there well before 1860.

[10] This fact is a testimonial to the slowness with which the states put teeth into their requirements of bond collateral for bank notes. Even by 1860, reporting banks showed only $70 million of investments (not all eligible as bank-note collateral) for over $200 million of note circulation.

Banking from the Civil War to World War I. The Civil War brought sharp changes in American banking. By-products of war finance were the National Bank system, and the elimination of bank notes issued by state-chartered banks. National bank charters were issued on the "free banking" system to all applicants who fulfilled stated requirements. National banks were allowed to issue bank notes upon pledging United States bonds with the Comptroller of the Currency. Bank notes of state-chartered banks were subjected to a heavy tax, and they vanished about 1870.

Most of the existing incorporated banks apparently gave up their state charters and took out new charters as national banks. By 1866 there were over 1600 national banks, and the number of state banks was much smaller. But bankers soon saw that a state bank did not really need to issue bank notes; yet state charters gave many advantages. The main advantages of a national bank charter were the income arising from bank-note issues,[11] and substantial prestige. State charters offered lower cash reserve requirements and fewer restrictions on the types of loans that might be made.[12] "Trust companies" under state charter could carry on general banking business with very low reserves, and could also add to income by handling estates as trustees under wills and trust agreements. Banking outside the National Bank system revived very quickly. By the early 1870's, deposits in state commercial banks, trust companies, and private (unincorporated) banks were around five eighths of those in national banks.[13] Although these banks

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[11] In effect, a national bank could buy government bonds by issuing bank notes and could pocket the interest on the bonds. For banks which were "in on the ground floor," this interest was a substantial contribution to income. Bonds which were eligible as bank-note collateral ("had the circulation privilege") were priced above other bonds on the market, showing that it was worth while to issue notes. At the same time, however, the fact that these bonds sold at a premium (and could be used as bank-note collateral only up to par) limited the marginal profitability of note issue. The premium, of course, had to be paid with funds other than the bank notes that the bonds secured, and was "amortized" out of the interest received.

[12] A sore point for national banks was the long-lasting prohibition of loans on real estate, which cut out many profitable loans.

[13] The widely used compilations of the Comptroller of the Currency show the low ebb of state banking around 1870 and suggest that state banking expanded rapidly during the 1870's. All the way from 1870 to 1914, they show state banks outgrowing national banks by a wide margin.

The Comptroller's figures, however, are totally unreliable for dates before 1914. They cover simply what was reported to the Comptroller by state authorities;

suffered more than national banks during the "hard times" of 1873–1878 and 1893–1898, state banks outgrew national banks in prosperity. By 1914, national banks were a good deal less than half of the commercial banking system.

National bank notes solved the problem of safety for the noteholder. People no longer had to worry about the soundness of the banks whose notes they held. One bank note was as good as another—or as good as a United States Note ("greenback") issued by the Treasury. A businessman who held enough bank notes to pay off his debts as they matured could no longer be forced into bankruptcy—as many had been in the panics of 1837 and 1857—for lack of "legal tender." Under the National Banking system, bank notes *were* legal tender; and from 1879 onward they were also convertible into gold. But in the panics of 1873, 1884, 1893, and 1907, the old trouble took a new form. By this time, deposit balances far outweighed bank-note circulation. In a panic, businessmen could be forced into bankruptcy because checks were not legal tender and banks ceased to cash checks. The panic of 1907 brought to a head a drive to cure the "inflexibility" of the note circulation, which forced banks to cease cashing checks in a crisis. The outcome was the Federal Reserve Act of 1913—of which more later.

Throughout the period, the main bank asset was loans to customers. Besides the bonds held to secure bank notes, the national banks held some other United States Government securities. They also took to buying bonds of state and local governments and of railways. But in 1914, securities other than those of the United States Government at national banks amounted to only one sixth of total loans. Commercial banks under state charter bought bonds rather more heavily; but their bondholdings in 1914 were only one fourth of their loans.

Although the *character* of banking was changing slowly, its *scale* changed rather quickly. The public's holdings of deposit balances at commercial banks were about $25 per capita in 1873, and

whole blocks of states are omitted for the early years. Moreover, they take no account of "private banks," which were very important in the early years but failed to grow much, so that their relative importance fell. A much more accurate picture for the early years is given by figures based on the federal tax on bank deposits, which was levied from 1865 to 1883. (See Federal Deposit Insurance Corporation, *Annual Report*, 1934, p. 103. An estimate of the Comptroller's errors of omission is given, *ibid.*, p. 105.) My own estimate appears in Appendix C, Table 17.

nearly $150 per capita in 1914.[14] These figures understate the importance of the growth, since prices in 1914 were lower than in 1873. Roughly, the "real" equivalent of the public's holdings of deposits at commercial banks grew at 5 per cent per annum. This rate of growth was about double the speed of growth of real national wealth per capita.

Banking from World War I to World War II. Just at the opening of World War I, the Federal Reserve System was set up.[15] The establishment of the Federal Reserve System put the desired "flexibility" into the nation's paper money by enabling "member banks" to borrow at the Federal Reserve Banks—which, in turn, could issue notes. All national banks were *required* to become members; other banks were *allowed* to do so. Most of the large banks and trust companies under state charter took out memberships. By 1923, when the country settled down to peacetime living after the war,[16] "state member banks" had about as much in deposits as "nonmember commercial banks." All member banks (national and state combined) held over two thirds of the *dollar amount* of deposits (excluding interbank deposits) in the commercial banks. Two thirds of the *number of banks,* however, stayed outside the Federal Reserve System.

Commercial bank assets during the interwar prosperity were still largely loans. But during World War I, banks bought government bonds on a large scale; and after the war, their holdings of bonds of other types outgrew their loans. Within the loan portfolio, the most rapid growth was in loans on securities (helping to finance the great stock-market boom of the 1920's) and on real estate. By 1929, when production, employment, and prices made their sharp downturn, old-fashioned loans no longer dominated the scene. At member banks, out of $36 billion of "loans and investments" only about $13 billion was apparently in business

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[14] This is my own estimate, arrived at by using the tax data referred to in footnote 13 for 1873, and correcting roughly for duplication because of checks in process of collection. In "1929 dollars" per capita, corresponding figures (obtained by using the Bureau of Labor Statistics wholesale price index to give a rough adjustment) are $28 for 1873 and $204 for 1914.

[15] On the Federal Reserve, see pp. 95–97.

[16] The years 1919–1920 were disturbed by a lively inflationary boom; after the break in 1920, the depression lasted through most of 1922. See Chapter XII.

loans. Ten billion dollars was in "investments," $10 billion in loans on securities, and $3 billion in loans on real estate.[17]

During the great economic collapse of 1930–1932, commercial banking was an economic storm center.[18] Banks failed right and left—on a scale which the country had not experienced since the days of "wildcat banking" before the Civil War. In the end, despite the presence of the Federal Reserve System, there was an old-fashioned bank panic early in 1933. Banks everywhere were closed for a week in March 1933, and all banks were closed for several weeks in some parts of the country. Not counting deposits in banks which reopened promptly after the "banking holiday," $8 billion of customers' deposit balances was tied up by bank failures between the middle of 1929 and March 1933; and, of this, $4 billion was still tied up in June 1933. (For comparison, the public's total deposits in operating commercial banks were $43 billion in 1929 and $27 billion in June 1933.)

To rebuild public confidence in the safety of banks, the federal government helped them in several ways from 1933 onward[19]; above all, it set up the Federal Deposit Insurance Corporation. Federal Reserve member banks were required to join this Corporation; others were allowed to join it. Since depositors in insured banks were guaranteed prompt repayment up to $5000 in case of failure, this measure made deposits as safe (from the owner's standpoint) as bank notes had been under the National Bank system. A large number of small banks stayed out of the system (by preference or because the FDIC felt that the risk of their failure was too serious). But the banks which joined the

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[17] Since the classification of bank assets in official statistics kept changing, it is hard to guess how quickly this change from nineteenth-century banking came about. Doubtless much of the amount on loan in 1873 or 1914 was secured by real estate and securities—or would have been if 1929 rules for collateral on loans had been in force. Perhaps tradition exaggerates the importance of business loans in the old days. In any case, we must clearly understand that by the end of the 1920's—if not before—banking rested chiefly on investments and on loans whose collateral was not created by current production.

[18] For an account of the bank crisis of the 1930's, see A. G. Hart, *Debts and Recovery* (New York, 20th Century Fund, 1938), Chapter III and Appendix, Tables 2–9. The figures in the text are from this source.

The depression shrinkage hit nonmember banks much harder than member banks, raising the member-bank proportion of banking business.

[19] See Chapter II, section B, below.

insurance system held the overwhelming bulk of deposits. Once the banks were reopened, they expanded operations again rather rapidly. Deposits were back within 10 per cent of the 1929 level by 1936, and passed the 1929 level in 1939.

The great slump carried banks another stage away from reliance on loans. From the middle of 1929 to the depression low of 1935, total loans of commercial banks fell from $36 to $15 billion; and at the end of the interwar period (1939) they had come back only to $17 billion. Something like $5 billion of the shrinkage was sheer evaporation—losses written off by banks when debtors couldn't pay. About $14 billion represented what banks collected from debtors, in excess of new loans made. Obviously, many debtors found it very painful to pay off loans in depression times. At the same time, these heavy losses hurt the banks badly. Many of the business firms, and many of the banks, most active in the predepression loan business were killed off by the depression. The survivors—both on the borrowing and on the lending side—were more cautious about bank loans. At the end of 1939, investments at commercial banks were 1⅓ times loans.

World War II brought a fresh expansion of bank loans—both during and after the fighting. But bank purchases of government securities in connection with war finance far outweighed the loan expansion. In the middle of 1947 investments at commercial banks were 2¼ times loans.

Banking as an Industry. Commercial banking is an important industry in the United States. It hires well over 300,000 workers, and its annual wage-and-salary payments are about $1 billion yearly. (For comparison, retail trade has about 7,000,000 workers and pays them about $15 billion.) Banking pays dividends of over a quarter-billion yearly to its stockholders, and hundreds of millions of interest to its time depositors. As I mentioned in the Introduction, banks do a large part of the accounting for American business and the government.

Concentration in Banking. Although banks are many, a few giant banks do much of the business. In 1946, out of 12,493 banks examined by the FDIC, 178 had deposits of more than $100 million each. These banks, less than 1½ per cent of the *number* of banks, held 54 per cent of the *dollar amount* of deposits (and also 54 per cent of bank assets). On the other hand,

TABLE 2: LIABILITIES OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947
(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
1. Total assets (= total liabilities + capital account: lines 6 + 7e)	43.4	59.4	144.4	33.2	46.4	45.2	19.6
2. Deposits of customers:							
a. General public[e]	26.6	39.9	113.8[d]	23.9	35.4	37.9	16.7
b. Government bodies[e]	4.8	4.5	8.6[d]	1.0	3.0	3.3	1.4
c. Banks[f]	4.5	7.9	11.2	5.2	4.9	0.9	0.2
d. Total deposits	35.8[d]	52.3	133.7[d]	30.0[d]	43.3	42.1	18.3
3. Rediscounts, etc.	0.07	0.02	0.06	0.001	0.01	0.04	0.01
4. Circulating notes	0.7	0.0	0.0	0.0	0.0	0.0	0.0
5. Other liabilities	0.6	0.6	1.1[d]	0.6	0.3	0.2	0.1
6. Total liabilities (2d + 3 + 4 + 5)	37.2	52.9	134.8[d]	30.6	43.6	42.3	18.3[d]
7. Capital account:							
a. Capital stock, etc.	3.3	3.0	3.2[d]	0.8	1.0	1.0	0.5
b. Surplus	2.0	2.4	4.2	1.3	1.2	1.2	0.5
c. Undivided profits	0.5	0.8	1.6	0.5	0.4	0.5	0.2
d. Reserves, etc.	0.5	0.4	0.6	0.1	0.2	0.2	0.1
e. Total capital account	6.2[d]	6.5[d]	9.6[d]	2.6[d]	2.8	2.9	1.2[d]
8. Ratio: Liabilities to assets (6/1)	85.7%	89.1%	93.4%	92.2%	94.0%	93.6%	93.3%

[a] Earliest call date for which we have FDIC figures.
[b] Last call date before World War II.
[c] First June call after Treasury deposits were put on a peacetime basis.
[d] Detail fails to add to this total because of rounding.
[e] For detail, see Table 3.
[f] Includes foreign banks and savings banks.

Source: Federal Deposit Insurance Corporation "call reports" (*Assets and Liabilities of Operating Insured Banks*, published semiannually), and *Federal Reserve Bulletin*, October 1947, pp. 1316–1317.

the 5500 banks with deposits of less than $2 million each had only about 4½ per cent of the deposits.

Concentration would be still greater if it were not for the American avoidance of "branch banking." In most other countries, almost all the business is done by a handful of giant banks, each with hundreds of branch offices scattered over the country. In the United States, no commercial bank is allowed to have branches outside the state of its head office. In many states branch banking is entirely prohibited; in others, it is limited to the bank's head-office city. Only in California is there branch banking of the sort carried on abroad.

This limitation of branch banking is sharply criticized by many bankers and by many economists. It does serve to limit the concentration of economic power—which by generally accepted American standards is a major consideration. But on the other hand, prohibiting branch banking interferes with the flow of savings from city to countryside and from east to south and west.[20] It prevents opening bank offices in towns too small to support independent banks. And it made possible the destructive wave of bank failures in the early 1930's.[21] Balancing advantages and disadvantages, we might be better off if we permitted the increased centralization of power implied by branch banking and were vigilant against its abuse. But the argument is by no means one-sided.

B. The Debts of Commercial Banks: Deposits

Commercial Bank Liabilities. Like other credit institutions, commercial banks owe almost as much as they own. This fact

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[20] In countries with branch banking (in Canada, for instance), some offices have deposits far in excess of loans, while others have loans equalling or exceeding deposits. Transfer of funds from offices rich in depositors to offices rich in loan opportunities has helped narrow the spread between interest rates charged farmers and rates charged city-dwellers.

[21] Failure of a bank with branches is not impossible, of course. But rescue operations by government are much easier than if all the bank offices involved are under separate ownership. The virtual certainty that government will rescue a branch bank rather than let it collapse wards off panics. In none of the branch-banking countries was there any heavy loss to bank depositors through failures in the 1930's, such as we experienced in this country. See Jacob Viner, "Recent Legislation and the Banking Situation," *American Economic Review*, Supplement, March 1936, pp. 106 ff.

TABLE 3: DEPOSITS IN INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947
(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
Deposits owned by general public ("Individuals, partnerships, and corporations"):							
9. Demand (subject to check)	14.9	24.8	78.2	20.6	23.9	23.4	10.3
10. Certified checks, etc.	0.4	0.8	2.1[d]	1.0	0.6	0.5	0.1
11. Time ("savings")	11.3	14.3	33.5	2.3	10.9	14.1	6.2
12. Total (9 + 10 + 11 = 2a)	26.6	39.9	113.8[d]	23.9	35.4	37.9[d]	16.7[d]
Deposits owned by government bodies:							
13. U. S. Government:							
a. Demand	1.7	0.7	0.2	0.04	0.08	0.07	0.02
b. War loan account	0.0	0.0	1.0	0.3	0.2	0.4	0.1
c. Time	0.7	0.08	0.1	0.02	0.01	0.05	0.01
d. Total federal	2.4	0.8	1.4[d]	0.4	0.4[d]	0.5	0.2[d]
14. State, municipal, etc.:							
a. Demand	2.0	3.1	6.5	0.6	2.3	2.5	1.1
b. Time	0.4	0.5	0.8[d]	0.02	0.3	0.3	0.1
c. Total state and local	2.4	3.7[d]	7.3[d]	0.6	2.6	2.8	1.2
15. Total government (13d + 14c)	4.8	4.5	8.6[d]	1.0	3.0	3.3	1.4

Total deposits other than interbank:							
16. Demand (9 + 10 + 13a + 13b + 14a)	19.0	29.5[d]	88.1[d]	22.5	27.1[d]	26.8[d]	11.7[d]
17. Time (11 + 13c + 14b)	12.4	14.9	34.4	2.3	11.2	14.5	6.4[d]
18. Total (16 + 17 = 12 + 15)	31.3[d]	44.4	122.5[d]	24.8[d]	38.3[d]	41.2[d]	18.0[d]
19. Interbank:							
a. Domestic banks	4.3	7.3	9.8[d]	4.0	4.8	0.9	0.2
b. Foreign banks	0.2	0.6	1.4	1.3	0.1	0.01	0.002
2d. Total deposits (18 + 19a + 19b)	35.8	52.3	133.7	30.0[d]	43.3[d]	42.1	18.3[d]
20. Adjusted demand deposits[e]	16.2	26.5	81.0	19.9	24.2	25.5	11.4

[a] Earliest call date for which we have FDIC figures.

[b] Last call date before World War II.

[c] First June call date after Treasury deposits were put on peacetime basis.

[d] Detail fails to add to this total because of rounding.

[e] Demand deposits other than interbank and U. S. Government, less items in collection.

Source: FDIC call reports and *Federal Reserve Bulletin.*

may be seen from Table 2, which shows figures for all commercial banks in the Federal Deposit Insurance system.[22]

Comparing total liabilities of commercial banks (item 6 of the table) with total assets (item 1), we find that in the 1930's these banks owed between 85 per cent and 90 per cent as much as they owned. In 1947 they owed about 93 per cent as much as they owned. Almost the whole of these debts which banks owe are deposit balances. Bank notes (item 4) have disappeared (you can just see their statistical tail disappearing into the historical rat-hole in the 1934 figures). "Rediscounts, etc." (item 3) (chiefly borrowings from the Federal Reserve and from "government corporations and credit agencies") are insignificant for these dates, and are always small compared to deposits. "Other liabilities" (item 5) are small. Bank debts are thus practically identical with bank deposits—the "near-money" for the sake of which we are studying banking.

The excess of what banks own over what they owe appears in the "capital account" (item 7). "Capital stock" (item 7a) records amounts paid in by stockholders when banks were organized (or later on when capital was increased with growing business). "Surplus" (item 7b) records earnings which bank directors have resolved to add to capital funds rather than to pay out in dividends.[23] "Undivided profits" (item 7c) are earnings not yet allocated either to permanent surplus or to dividends. "Reserves" (item 7d) are allowances for possible decline of asset values below the figures on which total assets and total net worth are based.

Any change in the bank's assets which is not fully offset by changes in its debts (liabilities) affects the capital account. If some asset falls in price below book value, its value on the books is often lowered, and the difference subtracted from a "reserve for decline in security values" or from undistributed profits.

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[22] All the tables in this chapter are drawn from figures of the Federal Deposit Insurance Corporation and Federal Reserve Board, and cover all "operating insured commercial banks" for midyear dates of 1934, 1939, and 1947. Similar figures have been published half-yearly from June, 1934, onward. The fine detail and high comparability of these FDIC series make these figures more useful for analysis than the slightly more complete figures for "all commercial banks" compiled by the Comptroller of the Currency with the aid of state reports.

[23] Part of surplus in some cases was "paid in" by stockholders at the time the bank was organized, or appeared on the books through a downward revaluation of capital stock.

Growth of net worth through interest on loans, or shrinkage of net worth through dividend payment to stockholders, is charged against undivided profits.

Classification of Deposits. The main types of deposits in commercial banks are shown in Table 3. These are classified on two different principles:

1. By the type of depositor. Thus, item 12 shows holdings of the "general public" (personal and business balances); item 15 shows holdings of government bodies; item 19 shows holdings of banks.
2. By the type of debt contract between the banker and his creditor, the depositor. The main classes are "demand" and "time" (chiefly "savings") deposits.

Later in the book (especially in Chapter VIII) the type-of-creditor classification will be studied closely. But in this chapter we are concerned chiefly with how things feel to the banker. Therefore, the main emphasis will be on the type-of-contract classification, with allowance for the creditor's influence upon the way the contract works.

Since we are looking at things in this chapter through the banker's eyes, these figures show deposits as they appear on bankers' books. When we come to look through the depositors' eyes, in Part II, we must take somewhat different figures.

The reason for the difference is the lapse of time in collecting checks. When a depositor draws a check to pay for something, he first sends it to the payee; the payee sends it to his bank; the payee's bank sends it home to the original bank through the clearing machinery. All this takes time and leads to some double-counting. At the stage *after* the check has reached the payee's bank but *before* it has gone through the drawer's bank, it has been added to the payee's account but not yet subtracted from the drawer's account. Thus, bank records count *twice* the funds which the check represents. "Adjusted demand deposits" (item 20 in Table 3) are calculated by subtracting checks in collection (item 31 in Table 5, below) from demand deposits of individuals, partnerships, corporations, and state and local governments (item 16). This item measures deposits as they would stand on the books of

both bankers and depositors if nobody drew any more checks until those now in collection had been cleared and subtracted from drawers' accounts.

Even this adjustment does not bring the figures into line with depositors' checkbooks. The drawer of a check subtracts it immediately on his checkbook stubs. The payee does not enter the corresponding amount on *his* stubs until he sends the check to his bank. Thus, checks in transit between drawer and payee are in limbo so far as accounting records go; neither drawer nor payee claims to own the funds.[24] In estimates of deposits based on *depositors'* records, the total we must look for and allocate among depositors is less than "adjusted deposits." [25]

The Banker's Contract with Depositors. The main obligation of a bank to its depositors is to give them "cash" for their deposits when called upon. This may mean paying out paper money over the counter, or settling at the clearings for checks which have found their way to other banks.

About two thirds of deposit obligations to the "general public" are classified as "demand deposits" (items 9–10). For almost the whole amount,[26] this means that the depositors have checkbooks and are free at any moment to draw out all they have on deposit.

The rest of the general public's holdings are "time deposits."

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[24] There has to be a corresponding discrepancy in debt accounts. The drawer of the check has scratched off the amount of the check from his list of "accounts payable." But the payee, not having received the payment yet, has not made the corresponding reduction in his "accounts receivable." If we get balance sheets from all businesses at the same moment, therefore, total debts receivable will appear to exceed debts payable. But *the excess of cash plus debts receivable over debts payable* will be accurate, since errors in bank deposits and in receivables cancel.

[25] Federal Reserve Board estimates of "estimated liquid holdings of individuals and businesses" (see *Federal Reserve Bulletin*) show demand deposits for these holders less than adjusted demand deposits—not only by the amount of state and local government deposits but by several billion more. For June, 1946, this allowance for "inter-depositor float" of checks is around $10 billion, as compared with about $6 billion of "interbank float" deducted in estimating "adjusted demand deposits." Estimates of "inter-customer float" are uncertain, however, since we lack a good statistical basis.

[26] Item 10 in the table represents amounts which not only *may be* drawn out, but are actually *in process* of being drawn. Checks (either checks drawn by the customer and "certified" by the bank, or the banker's "cashier's checks," or traveler's checks) have actually been written and are in transit.

Item 9 includes a small amount which depositors are not entitled to withdraw without giving the bank a few days' notice. In June, 1935, this amount was 5 per cent of item 9. Since then, the FDIC has not bothered to classify it separately.

These are deposits which the depositor is not formally entitled to cash without giving 30 days' notice. Almost the whole amount is in "savings deposits." That is, the depositor has a passbook on which the bank enters the amounts he deposits and withdraws, and keeps a record of his balance; no money can be withdrawn without this passbook. Roughly 95 per cent of item 11 takes this form.

Deposits of government bodies may be either demand or time. In either case, they are commonly secured by the "pledge" of government securities, owned by the bank, as collateral. The "war loan account" is a special type of deposit, developed to ease the pressures of war finance on banking. When the United States Treasury sold securities, it put the proceeds on deposit in banks all over the country. Each bank's share represented its own purchases of securities, plus proceeds of sales to its customers and neighbors. Thus, there was little shifting of deposits from bank to bank as securities were sold, and no pressure on bank reserves.[27] Between "bond drives," the Treasury spent more than taxes brought in. At intervals it "called" a percentage of the war loan account (uniform for all banks) for transfer into Treasury checking accounts. For the individual bank, changes in these balances were easy to predict.

Interbank deposits (item 19) are almost entirely checking accounts. Part belong to foreign banks, part to mutual savings banks. The bulk, however, are owed *by* commercial banks *to* commercial banks. For many analytical purposes, these obligations may be treated as offsetting each other and this part of deposits may be ignored. But they affect the business-policy problems of both debtor and creditor banks, and therefore they have to be kept in the picture in this chapter.

Traditions on Stability of Deposits. In planning his business, the banker has to allow for deposit instability. If a bank's deposits shrink, the bank has to pay out cash. If the drain cuts seriously into cash resources, the bank has to get more cash by selling investments or calling loans. Thus, whether the bank can count on deposits staying with it has a great deal to do with what assets it is good business to hold. This influence of deposits

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[27] In fact, since no reserves were required on War Loan balances, bond drives lowered required reserves.

upon bank assets will be examined in the next section of this chapter.

By tradition, the banker can count on most stability in his time deposits and least in his interbank deposits, with the general public's checking deposits and government deposits in between. It will appear shortly that this tradition does not entirely square with facts for large masses of depositors; but it probably holds true for individual accounts.

Time depositors, to begin with, think of their accounts as "savings" to provide for long-run goals or to create a "rainy-day" reserve—not as funds for everyday use. Bankers try to avoid instability in individual savings accounts—both by rejecting accounts which are likely to be unstable, and by setting up incentives for individual depositors to keep stable balances, through the rules printed in savings passbooks. In particular, interest is often paid only on the *smallest* amount which the depositor has to his credit in a half-year. The banker's right to demand 30 days' notice is almost never exercised; [28] but the knowledge that this right exists may have a sobering effect on depositors.

There is much less done to stabilize checking accounts one at a time. Banks do expect customers who may want large loans to keep large balances. But so many important customers have given up the practice of borrowing at banks that this is not much of a stabilizer. Banks do have minimum-balance requirements. But small depositors can get out from under these by putting their accounts on the "dime-a-check" basis with no minimum balance. Large depositors, who hold most of the amount on deposit, are probably mostly well above the minimums.[29] Individual accounts are much affected within the year (and even within the month or the week) by the seasonal ebb and flow of funds.

Interbank accounts, finally, may be expected to be most unstable of all. These accounts are concentrated in the large downtown

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[28] Banks do not require notice before payment as a matter of daily routine; the bother, expense, and loss of good will involved are prohibitive. But a bank cannot *suddenly* start requiring notice without alarming its customers. Any effort to check an outflow of cash from the bank by requiring notice is likely to boomerang; depositors who would otherwise have left their money on deposit are likely to give notice in order to "be on the safe side."

[29] Minimums are set high for accounts which are very active (draw a large number of checks), so that this finding is not by any means certain.

banks of our major cities,[30] and belong chiefly to the smaller outlying banks. A small percentage drain out of the bank accounts of these outlying banks' customers can add up to a large percentage drain on interbank balances, for the interbank balances are only a fraction of the customers' accounts. This intensification of the effects of a drain of cash was a feature of the great crises of the nineteenth century.

Instability in Practice. In actuality, time deposits seem to be less stable than this tradition would suggest, and demand deposits more stable. In the great recession of the 1930's, time deposits at all commercial banks dropped by 29 per cent, whereas demand deposits adjusted dropped 28 per cent and interbank deposits 35 per cent, from the middle of 1930 to the middle of 1932. In general, time deposits dropped more than checking deposits at big-city banks, but the opposite occurred at country banks.[31]

The explanation seems to be that although checking accounts viewed *one at a time* fluctuate more than savings accounts, they are less likely to move *all in the same direction.* In particular, savings depositors are more capable of stampeding and staging a "run" on a bank. Under deposit insurance, however, they are likely to be less panicky than in the past.

On the whole, we are probably right in assuming that bankers regard the traditions about deposit stability as correct for "normal" conditions, and plan their assets accordingly. But we must be on the lookout for points at which assets are affected by bank expectations about deposits which differ from the traditional standard.

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[30] Out of $11.2 billion of interbank balances in June, 1947, $4.2 billion were in downtown banks in New York, $1.1 billion in Chicago, and a further $4.9 billion in downtown banks in other "Reserve Cities." Thus, 90 per cent of the interbank deposits were in these banks; whereas nearly half of deposits other than interbank were in "country member banks" and "insured nonmember banks." See the *Federal Reserve Bulletin.*

[31] Percentages of decline from June 1930 to June 1932 run as follows:

	Central Reserve City		*Reserve City*	*Country*	*Other*	
Class of Bank	*New York*	*Chicago*	*Other*	*Members*	*Commercial*	*Total*
Time deposits	45%	36%	21%	24%	36%	29%
Adjusted demand deposits	10%	29%	22%	32%	44%	28%
Interbank deposits ...	36%	41%	29%	31%	56%	35%

These percentages are calculated from figures in Federal Reserve Board, *Banking and Monetary Statistics,* pp. 19, 34, 75, 81, 87, 93, and 99.

TABLE 4: MAJOR CLASSES OF ASSETS OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947
(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
21. Cash assets	9.4	19.4	32.2	7.8	11.2	9.7	3.5
22. U. S. Gov't securities	10.3	15.0	69.2	15.5	20.8	22.9	10.0
23. Other securities	6.2	7.0	8.3	1.6	2.3	3.1	1.3
24. Loans to customers	15.2	16.0	33.3[d]	8.1	11.4	9.1	4.6
25. Real estate, etc.	1.6	1.7	1.0	0.2	0.3	0.4	0.1
26. Miscellaneous assets	0.7	0.3	0.5	0.2	0.2	0.1	0.04
1. Total assets	43.4[d]	59.4[d]	144.4[d]	33.2[d]	46.4[d]	45.2[d]	19.6[d]

[a] Earliest call date for which we have FDIC figures.
[b] Last call date before World War II.
[c] First June call after Treasury deposits were put on a peacetime basis
[d] Detail fails to add to this total because of rounding.

Source: FDIC call reports and *Federal Reserve Bulletin.*

C. The Assets of Commercial Banks

Major Asset Classes. Commercial bank assets, like bank liabilities, are mostly near-moneys. Almost without exception, the things banks own are cash or debts receivable. Most of the debts receivable are scheduled for payment so soon—or can be sold on the Stock Exchange so readily—as to have a high degree of "moneyness." [32]

The breakdown of bank assets by major classes is shown in Table 4. The bulk is in cash assets, United States Government securities, and loans. The effect of the war shows up in the huge postwar item for government securities—about half of total assets, whereas they were a quarter of total assets in the 1930's. Loans dropped off from 35 per cent of assets in 1934 to 27 per cent in 1939 and 23 per cent in 1947—despite a sharp growth in their amount early in the war and again during reconversion.

The makeup of the various major asset classes will be examined later. The main thing to observe here is the strong similarity of the asset structure as among the different groups of banks. Country banks and insured nonmember banks show smaller proportions in cash and larger proportions in securities than do reserve city and central reserve city banks; but the differences in percentages of assets as among the major classes are not overwhelming. On the other hand, there are significant regional differences. Take the ratio of investments (items 22 and 23) to loans (item 24) as an indicator. The 1947 average ratio for all insured banks was about 2.3. Of the 26 states where insured banks had loans and investments exceeding $1 billion, seven (California, Georgia, Missouri, Tennessee, Texas, Virginia, and Washington) had ratios below 2.0. At the other extreme, five of these 26 states (Florida, Indiana, Iowa, New Jersey, and Wisconsin) had ratios above 3.0. Not only the ratios but their causes are diverse. Low ratios (indicating heavy use of bank loans) are found in southern states partly because they are largely rural and partly because they have rising industries; but they are also found in California and in New York (with a ratio of 2.1). The high ratios in such states as

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[32] In fair weather, that is. In a crisis, loans may "freeze."

TABLE 5: CASH ASSETS OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947
(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
27. "Cash in vault" (coin and paper money)	0.6	0.9	1.8[d]	0.2	0.5	0.8	0.4
28. Reserve balances on deposit at F. R. Banks	3.8	10.0	16.0	5.2	6.3	4.6	0.0
29. Deposits at other banks in U.S.A.	3.6	6.1	8.5	0.2	1.9	3.4	3.0
30. Deposits at foreign banks	0.1	0.04	0.03	0.02	0.01	0.003	0.0007
31. Checks in collection	1.1	2.2	5.8[d]	2.2	2.6	0.8	0.1
21. Total cash assets	9.3[d]	19.4	32.2	7.8	11.2	9.7	3.5
MEMORANDA:							
Deposits subject to reserve:							
32. Demand[e]	15.5	27.0	76.2[d]	25.3	27.7	23.4	[e]
33. Time[e]	9.7	11.6	28.1	2.3	11.3	14.5	[e]
Reserve required:							
34. On net demand deposits	7–13%	12–22¾%	14–20%	20%	20%	14%	[e]
35. On time deposits	3%	5%	6%	6%	6%	6%	[e]
Amount of reserve:							
36. Required	2.1	5.9	15.4	5.2	6.2	4.1	[e]
37. Excess	1.7	4.1	0.8	0.02	0.2	0.5	[e]
38. Net debtorship to banks in U.S.A.[f]	0.7	1.2	1.3	3.7	2.9	–2.5	–2.8

[a] Earliest call date for which we have FDIC figures.
[b] Last call date before World War II.
[c] First June call date after Treasury deposits were put on peacetime basis.
[d] Detail fails to add to this total because of rounding.
[e] No reserve calculations performed for nonmember banks.
[f] Item 19 from Table 3, minus Item 29.

Source: FDIC call reports and *Federal Reserve Bulletin.*

Indiana and Iowa reflect loan repayment by prosperous farmers during the war.

Cash Assets and Reserve Requirements. Among the cash assets of commercial banks (inventoried for June 1947 in Table 5), the most important is the legal reserve of Federal Reserve member banks—held in the form of checking balances at the Federal Reserve Banks (item 28). Deposits at other banks (item 29) are very important for banks which do not belong to the Federal Reserve System (and therefore have no deposits at the Reserve Banks), and also for "country" member banks.[33] Checks in collection (item 31) bulk very large statistically. But, of course, each bank must reckon that checks *on the way to it* through the clearings amount to about as much as the checks it has put *on the way to other banks.* Thus, the presence of this item does not strengthen a bank against emergencies as do coin and paper money (item 27) or deposits at the Reserve Bank (item 28).[34]

Prudent bankers have always held cash "reserves" to make sure that they could convert customers' deposits into cash up to any amount likely to be asked. In the United States [35] the reserve tradition has crystallized into legal *required minimum ratios* of reserves to customers' balances. For member banks of the Federal Reserve System, with the great bulk of commercial bank deposits, these ratios are set within limits by the Federal Reserve Board for different classes of banks. The 1947 requirements are shown in items 34–37 of the table. It will be seen that the *amount* of reserve required depends almost entirely on demand deposits. Even for "country banks," where time deposits are most impor-

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[33] Member banks in "reserve cities" (major cities outside New York and Chicago) also hold large balances with other banks—but they are outweighed on the whole by balances that other banks hold with them. Thus, these banks on the average are *debtors* on interbank-deposit account (see Item 37 of the table), whereas "country banks" and uninsured banks are net creditors.

[34] For monetary analysis, it is commonly best to treat this item as a subtraction from deposit liabilities rather than an addition to cash assets. "Adjusted demand deposits" are calculated by taking the total demand deposits payable to individuals, partnerships, corporations, and state and local governments (including cashiers' checks, and so forth) *minus* checks in collection as shown on the bank asset account. The result is a picture of the balances depositors would own *if nobody drew any more checks until those now in collection had been collected.* See pp. 37–38.

[35] In most other countries, the concentration of banking in the great branch-bank systems makes informal controls more adequate, and no such legal minimum ratios exist.

TABLE 6: SECURITY HOLDINGS OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947
(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
U. S. Government securities:							
39. Treasury bills	0.8	0.4	0.8	0.2	0.3	0.2	0.1
40. Treasury certificates	0.7	0.0	9.4	1.5	3.0	3.0	1.9
41. Treasury notes	3.0	2.9	5.3[d]	0.9	1.5	2.0	1.0
42. Treasury bonds[e]	5.2	8.6	53.5	12.8	16.0	17.7	7.0
43. Guaranteed issues of government corporations	0.6	3.1	0.014[d]	0.001	0.003	0.005	0.004
22. Total U. S. Government	10.3	15.0	69.1[d]	15.5[d]	20.8	22.9	9.9[d]
44. State and local government securities	2.3	3.1	4.8	0.8	1.4	1.8	0.8
Other securities:							
45. Bonds of gov't corp'ns[f]	0.3	0.4	[g]	[g]	[g]	[g]	[g]
46. Bonds of railways	0.9	0.9	[g]	[g]	[g]	[g]	[g]
47. Bonds of public utilities	0.8	0.9	[g]	[g]	[g]	[g]	[g]
48. Bonds of other corp'ns	0.8	0.8	[g]	[g]	[g]	[g]	[g]
49. Total corporate bonds[f]	2.9[d]	3.1[d]	3.2	0.6	0.9	1.2	0.5
50. Federal Reserve stock	0.15	0.13	0.19	0.11	0.09	0.08	0.00
51. Other corporate stocks	0.5	0.4	0.11				0.02
52. Foreign securities	0.3	0.2	[h]	[h]	[h]	[h]	[h]
53. Total securities (22+44+49+50+51+52=22+23)	16.5	22.0[d]	77.4[d]	17.0	23.2	26.0	11.3[d]

[a] Earliest call date for which we have FDIC figures.
[b] Last call date before World War II.
[c] First June call after Treasury deposits were put on a peacetime basis.
[d] Detail fails to add to this total because of rounding.
[e] Includes a small amount of U. S. Savings Bonds.
[f] Excluding guaranteed issues (item 43 above).
[g] This classification was superseded in 1947 by a classification based on maturity dates.
[h] Presumably included in items 49 and 51; amount probably trifling.

Source: FDIC call reports and *Federal Reserve Bulletin.*

tant, they accounted for only 21 per cent of the required reserve in 1947; for member banks as a whole, for only 11 per cent.

Banks are free to hold more than the required minimum of reserves if they choose; and sometimes they do. Through most of the 1930's, excess reserves were a large fraction of the total—for a few months, they were actually greater than required reserves. But during the 1920's, banks generally kept close to the line; and during the postwar period down to this writing, excess reserves have been relatively small.

Coin and paper money held by commercial banks are also small relative to reserve requirements (toward which coin and paper money do *not* count, by the way). The amounts held are chiefly determined by what is needed to make change and to take up fluctuations in the flow of paper money over the counter without wasteful shipment back and forth to the Reserve Bank.

For nonmember banks, interbank deposits are treated by state law as reserve funds. For "country member banks," interbank deposits have a similar role in fact. There is no legal recognition of these funds as reserves. But the lower required minimum ratio to demand deposits reflects the fact that these banks do habitually treat balances with big-city banks as reserves, whereas the latter have an extra responsibility because their country correspondents expect to draw on them in emergencies.[36] The base for reserve requirements includes deposits of the "general public" and of government bodies plus the *excess* of deposits belonging to other banks over those the bank in question has in other banks.

Bank Holdings of Securities. Securities at commercial banks shade off from near-moneys of almost perfect "moneyness" (Treas-

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[36] This extra responsibility is concentrated most sharply on the "central reserve city banks" in New York and Chicago, which hold interbank deposits not only for "country banks" but for many "reserve city banks" in lesser centers.

Under the National Banking system, "country banks" had a 15 per cent reserve requirement (of which deposits in reserve city or central reserve city banks could be counted for as much as two thirds). Both reserve city banks and central reserve city banks had 25 per cent reserve requirements. But the former could, and the latter could not, count deposits in central reserve city banks up to half the requirement.

Through most of Federal Reserve history, required reserves on demand deposits have been 13 per cent for central reserve city banks, 10 per cent for reserve city banks, and 7 per cent for country banks. Equal requirements for the first two groups arose only as a temporary adjustment to ease pressures from war financing in 1942.

ury bills) to securities with almost no moneyness at all (Federal Reserve stock). The order of the items in Table 6 corresponds roughly to the degree of "moneyness."

Treasury bills and Treasury certificates (items 39 and 40) are payable in three or twelve months from the date of issue; on the average, those held by banks are about halfway between issue and maturity.[37] At maturity, the Treasury pays them off at face value with checks on the Federal Reserve Banks. Thus, these securities are forever turning into cash, and a bank which holds them can quickly build up its cash reserves by "letting them run off"—that is, by failing to buy new ones as old ones mature. There is also an active market for these securities if a holder wants to sell before maturity. During the war the Federal Reserve set up a "buying rate" for bills and agreed to buy all that were offered, at a discount below face value of ⅜ of 1 per cent per annum. In practice, certificates also could be sold to the Federal Reserve at ⅝ of 1 per cent. Thus, these assets became nearly the same as cash. Put it like this: A bank holding bills or certificates had almost all the advantages of holding reserve funds, plus a little interest. If the bank wanted the only missing advantages (counting as part of legal reserve and being available to meet checks at the clearings), it could get them almost instantly by giving up this interest. The Federal Reserve dropped the rigid buying rate of ⅜ of 1 per cent in the middle of 1947, and thus introduced a trifling uncertainty into the price of bills, although not enough to make much difference.

Treasury notes (item 41) have a good many of these advantages. They pay a little more interest, but subject the holder to a little more uncertainty about the price he can get if he sells. Treasury notes have sometimes been issued on a five-year basis, sometimes on a three-year, with interest rates of 1¼ per cent or 1½ per cent in recent years. A good proportion of those held by banks normally have over a year to run. But the market is sure to yield a price near par in case of quick sale.[38]

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[37] Bills are issued weekly and mature in three months. They are sold "on a discount basis"—that is, for slightly below face value. Certificates are issued less regularly and ordinarily mature in a year. At maturity they pay par plus a slight addition for interest.

[38] During the life of the 1¼ per cent note issued in June 1944 to mature in March 1947, for example, the market price ranged from par to 100 20/32. The

Treasury bonds (item 42) are as sure as short-term Treasury securities to be paid off in full when they mature. But maturity in many cases is 5, 10, or 20 years away. Market prices are capable of fairly sharp dips, and a bank may lose money on them if forced to sell on short notice.[39] Issues that banks are allowed to hold have yielded rather low incomes in recent years (near 1¼ per cent or 1½ per cent)—but more than Treasury notes.

Securities of state and local governments ("municipals"—item 44) are a step further from money. During the Great Depression, a number of local governments (chiefly school districts, but also some important cities) failed to pay principal and interest on their bonds when due. In 1933 fear of default pulled their prices down very sharply.[40] In 1939, when default was not in question, the outbreak of war lowered municipal bond prices more than prices of federal bonds.[41] These bonds yield somewhat more than federals, and have the added attraction that income from them is exempt from federal income taxes.

Corporate bonds (items 45–48) are of many "grades." Some are considered very sure to pay principal and interest when due. With those of "low grade," however, the risk of default is considered serious; and there are always some corporate bonds (notably of railways) in default. In serious depressions, corporate bonds that had been previously rated as high grade have often slipped into lower ratings. The price risk is much heavier than with government bonds.[42] On the other hand, the yield is higher.

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sharpest price decline in Treasury notes in recent years was at the outbreak of war in Europe in 1939, when yields went from 0.36 per cent in June to 1.18 per cent in September. This is equivalent to a drop of about 4 points (say, from 101 to 97) in the price of a five-year note.

[39] In 1931, the average price of Liberty bonds was 8 per cent lower in December than in May. In 1939, the outbreak of war in Europe pulled down the average price of long-term Treasury bonds from 108 in August to 102 in September.

[40] From 93.3 in January, 1933 (which was close to the levels of the 1920's), the Standard Statistics index of municipal bond prices dropped to 80.4 in May.

[41] The same index referred to in footnote 40 dropped from 118.6 in May 1939 to 116.5 in August and 107.1 in September. The August–September drop was 8 per cent, compared to 6 per cent for long-term federal bonds.

[42] A list of sixty corporate bonds kept by the Standard Statistics Company had an average price of 101.6 in September 1930, and reached a depression low of 60.6 in June 1932. They dropped *from month to month* by nearly 5 per cent from August to September 1931, 7½ per cent from September to October, and 11 per cent from November to December—falling in four months from 92.9 to 73.1, or by one fifth. In 1937–1938 there was another sharp drop. But in 1939 at the outbreak of war these prices scarcely wavered.

TABLE 7: LOANS OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947

(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
54. Loans to brokers	1.3	0.8	1.5	1.3	0.2	0.03	0.01
55. Acceptances and other "open-market paper"	0.5	0.5					
56. Misc. business loans		5.2	14.8[d,e]	5.3[e]	5.7[e]	2.7[e]	0.9[e]
57. Agricultural loans		1.2	1.5[d]	0.001	0.2	0.8	0.6
58. [f]Security loans—not to brokers		0.8	1.3[d]	0.4	0.5	0.2	0.1
59. Consumer loans	9.9[f]		4.9	0.6	1.7	1.7	0.9
60. Unclassified loans		3.6[g]	1.0	0.3	0.4	0.2	0.1
61. Real estate loans:							
(a) On farm land	0.6	0.5	0.8				0.3
(b) On residences	2.9[h]	2.5	5.9[d]	0.1[i]	2.7[i]	3.4[i]	1.3
(c) Other		1.0	1.5				0.3
24. Total loans	15.2	16.0	33.3[d]	8.1[d]	11.4	9.1[d]	4.6[d]

[a] Earliest call date for which we have FDIC figures.

[b] Last call date before World War II.

[c] First June call after Treasury deposits were put on a peacetime basis.

[d] Detail fails to add to this total because of rounding.

[e] Combined figure for items 55 and 56.

[f] Combined figure for items 56–60.

[g] Combined figure for items 59–60.

[h] Combined figure for items 61b and 61c.

[i] Combined figure for items 61 a–c.

[j] "Other loans for the purpose of purchasing or carrying securities." We have 1934 data for "loans on securities"—many of which by 1939 and 1947 classification would appear in items 56 and 60.

Source: FDIC call reports and *Federal Reserve Bulletin.*

At the low end of the scale of moneyness are Federal Reserve stock, foreign assets, and domestic corporation stocks (items 50–52). Market prices are far from certain for these assets. Stock in Federal Reserve Banks is an absolutely safe investment paying 6 per cent; but a bank cannot change its holdings without changing its own capitalization.[43] Other assets in this group are rather unsafe. On the whole, they are acquired by accident—most often through default on a loan for which they are collateral.[44]

Bank Loans. The main types of bank loans are listed in Table 7. I have arranged the items as nearly as I can in order of "moneyness." The classification of loans is awkward and shifting, however.[45] Only a few items (54, 61a, and the total) are available for all years; the others have to be lumped in shifting combinations, which pulls some items out of the appropriate order.

The second item of the list (item 55) is the favorite of banking tradition. Loans included here (like Treasury bills) can be turned into cash rapidly by buying less and letting those held "run off"—or by sale on a dependable market. Even in the 1930's, however, these loans were of minor importance; since World War II they have been too small for the FDIC to count them separately. Brokers' loans (item 54) also have a great deal of moneyness. They are mostly "call loans," on which the bank can demand repayment any day. Losses to banks on such loans are very rare, and so are defaults. The broker who borrows is doing so on behalf of some customer, and can get money for repayment either from the customer or from sale of the customer's securities (which are collateral for the loan). Besides, the broker whose loan is called is free to borrow at another bank (directly or

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[43] As a condition of membership in the Federal Reserve System, each member bank is required to hold Federal Reserve Bank stock in an amount determined by its own capitalization.

[44] Stocks in affiliated banks enter in item 51 to the tune of perhaps $35 million, and in bank subsidiaries (safe deposit companies, and so forth) of about $100 million. These are the only stocks representing deliberate investment by the bank owner.

[45] Loans are classified by bank examiners on a mixture of three principles: (1) the business in which the borrower is engaged (items 54 and 57); (2) the type of "collateral" with which the loan is secured (item 61); (3) the declared "purpose" of the borrower (item 58). None of these principles is carried consistently through the whole mass of loans. Many types of borrowers are included in items 56, 58, and 60. Many types of "collateral" are included in items 56, 59, and 60. Many types of "purposes" are included in items 60 and 61. The most important item of the account (item 56) is not clearcut by any of these principles of classification.

through the Stock Exchange "money desk"), unless the collateral has become inadequate.[46]

Security loans other than those to brokers (item 58) are fairly high in "moneyness." They are largely short-term, and the pledge of stock-exchange collateral ordinarily guarantees that the debtor can pay off if pressed (by selling his securities if not otherwise). But commonly the banker cannot call them without injuring and offending his customer. Therefore, in practice the bank gains more in safety than in ability to cash in quickly by insisting on such collateral. Perhaps a good part of the miscellaneous business loans and consumer loans in items 56 and 59 are the same kind of loan in substance, granted without the formality of posting stock-exchange collateral in cases where the banker is sure that the customer "is good for it."

The bulk of the bank loans which serve to finance ordinary business are found in item 56. The degree of moneyness varies sharply within this class of loans. Some are short-term loans; others are long-term loans, providing for repayment in installments over several years. Some are loans which borrowers could rather easily pay off quickly by selling assets or by borrowing elsewhere. The banker's ability to get cash by reducing such loans (that is, by collecting those outstanding and making few new ones) is limited by their personal character. The borrowers are his "customers." They feel they have a claim upon the bank's lending power. Sometimes they have established "lines of credit" which they regard as options to borrow when they wish, up to an agreed limit. Refusal of an expected loan is a blow to their businesses and to their dignity. Even more than with security loans (where changing Federal Reserve standards give the banker ground for changing *his* standards), the banker's good will is involved. The same holds for farm loans (item 57), for interbank loans (part of item 60), and in less degree for consumer loans (item 59).

Loans on real estate security (item 61) were long regarded as

[46] The "margin"—or proportion of the value of securities bought on credit which a customer must put up in cash—is fixed by regulation of the Federal Reserve Board. This requirement applies both to brokers' loans and to bank loans "to others for the purpose of purchasing or carrying securities." For a few years during and after World War II, there was a "100 per cent margin requirement," under which no *new* brokers' loans or security loans to others could be made (except on government securities). But pre-existing loans could be extended (and were) so long as the bank remained satisfied with the collateral.

improper for banks. In the great slump of the 1930's, they involved banks in heavy losses. Since then, they have become safer. Paying off the principal of the mortgage along with the interest in frequent installments is now regular practice. This plan reduces the danger that the debtor may be called on for a lump-sum repayment which he cannot manage. Besides, many of these long-term "amortized" loans are insured for the banks by the Federal Housing Administration. But these loans are very low in "moneyness."

Other Assets. Other bank assets are unimportant compared to those just studied. For what they are worth, they are itemized in Table 8. The main item (item 62) is the buildings in which banks do business (with equipment, and so forth). As the shrinkage from 1939 to 1947 shows, this asset is "written down" when banks have profits, and its valuation is quite arbitrary. "Other real estate" (item 63) is chiefly what banks acquire when mortgage debtors default and mortgages are foreclosed. During the great depression, this item grew; but during the real estate boom of World War II the banks sold off nearly all their real estate except for their banking houses.

The "contingent items" under item 64 are offsets to non-deposit liabilities, shown on the other side of the balance sheet (item 5), which are not in substance bank debts. An example is a bank acceptance. When a bank's customer has to buy raw materials in Latin America, the bank sometimes issues a "letter of credit," under which the seller of the raw materials is authorized to draw a "bill" ordering our bank to pay the price of the goods in American dollars. This bill is "discounted" with a South American bank (enabling the seller to collect in his own currency) and sent by that bank to New York. Our bank then "accepts" the bill—that is, stamps it to guarantee that it will be paid when due—and the bill goes into the stock of "open-market paper" on the New York market. This accepted bill appears as a liability of our bank. But the customer who has bought the materials is pledged to pay the bank when the bill falls due; his obligation goes into item 64. The "accruals" of item 65 are chiefly interest on the securities, promissory notes, and so forth, which the bank owns. If a $1000 railway bond pays the bank $20 every six months, then three months after an interest date the bank's accounts show

TABLE 8: REAL ESTATE AND MISCELLANEOUS ASSETS OF INSURED COMMERCIAL BANKS, END OF JUNE, 1934, 1939, AND 1947

(In billions of current dollars, rounded to $0.1 billion)

Balance Sheet Item	All Insured Commercial Banks			Classes of Insured Commercial Banks, June 30, 1947			
	June 30, 1934[a]	June 30, 1939[b]	June 30, 1947[c]	Central Reserve City	Other Reserve City	Country Member	Insured Nonmember
62. Bank buildings and fixtures	1.2	1.2	0.9	0.2	0.3	0.3	0.1
63. Other real estate	0.4	0.5	0.08[d]	0.003	0.05	0.01	0.004
64. Contingent items[e]	0.3	0.1	0.09	0.06	0.03	0.003	0.001
65. Accruals[f]	0.5[g]	0.12	0.2	0.08	0.10	0.04	0.01
66. Other assets		0.10	0.14[d]	0.03	0.05	0.03	0.02
67. (= 25 + 26) Total	2.4	2.0	1.5[d]	0.4	0.5	0.4	0.2[d]

[a] Earliest call date for which we have FDIC data.
[b] Last call date before World War II.
[c] First June call date after Treasury deposits were put on a peacetime basis.
[d] Detail fails to add to this total because of rounding.
[e] "Customers' liability on acceptances."
[f] "Income accrued but not yet collected."
[g] Combined figure for items 65 and 66.

Source: FDIC call reports and *Federal Reserve Bulletin.*

$10 of the next interest as "accrued." Just what the last asset item 66 consists of is unclear; but it is much too small to matter.

The assets in this group have almost no "moneyness." In particular, a bank simply cannot consider selling its building and moving out into rented rooms; therefore, the main item 62 can be cashed only if the bank goes out of business (or merges with another bank). Direct cash income on these assets is also small; but they are natural by-products of bank operations.

D. Asset Management and Bank "Liquidity"

Earnings versus Liquidity. Bank management is a tug of war between immediate earnings and "liquidity." A bank is a business in search of profit. It gets its profit primarily out of interest on its "earning assets"—that is, its loans and investments. In asset management, therefore, the question comes up every day whether the bank can increase its earning assets, or can swap a low-interest asset for a high-interest asset.

But in choosing its assets, a bank has to guard its "liquidity." (What this means, I shall discuss shortly. Roughly, the answer is that liquidity is "moneyness.") A bank which chose only the assets bearing the highest interest rate would be likely to find that, if depositors withdrew their funds, it couldn't pay. Furthermore, a bank which played the game this way could not hold its depositors. Its reputation would suffer; and without a reputation for "soundness," a bank cannot survive.

All this means that the conflict of "liquidity" and earnings must not be exaggerated. Point by point, in deciding whether or not to make a particular loan or buy a particular security, the banker is deciding between liquidity and earnings. But *both* this year's interest earnings and this year's liquidity contribute to the bank's long-run earning power. That is why the banker wants liquidity. He "runs away" from a risk which would lower his liquidity today because he aims to "live to fight another day."

The Tradition of "Self-Liquidating Assets" or "Real Bills." In banking tradition, "liquidity" of a bank asset was long thought of as something about the asset which made it "self-liquidating." Bank loans generally grow out of dealings which bank customers carry on. It was felt that if the loan grew out of a transaction

which itself put the borrower in the way of getting funds to repay the loan, all was well. The most liquid bank assets were thought to be loans to businessmen, secured by physical goods in the process of orderly marketing (or in shipment, or in production in a factory), and to be repaid out of the price the goods would fetch when sold. This was the so-called "real bills doctrine." [47] In the United States it has always been honored more in the breach than in the observance; but until late years, breach of the doctrine called for excuses.

This doctrine of "self-liquidating" loans sounds nice—all the nicer because it has a flavor of unattainable moral beauty about it. But it hides a fallacy. Suppose that all bank loans are "real" in this sense and that one bank (needing cash) starts to reduce its loans. As old loans fall due, the bank insists on payment; as new loans are applied for, it refuses to grant them. What happens? In the first place, the merchants who buy the goods which the debtors sell to meet their loans probably must borrow to buy them (and, according to the real bills doctrine, are thoroughly entitled to do so). In the second place, if the debtors do not borrow again as their loans are repaid, they are likely to cripple their producing and trading operations; and the process will stop sales for their suppliers and make their loans less "self-liquidating" than their bankers expected.

If one part of the banking community succeeds in reducing its outstanding loans by this process, its success depends on an expansion of loans by other bankers. A *universal* attempt to reduce

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[47] This is an English rather than an American term. In England (and on the European continent), immediate payment for goods sold was often made in "trade bills." That is, the seller drew a "bill" calling on the buyer to pay (just as a department store does when a woman buys a dress). But instead of simply sending the bill to the buyer for cash settlement, the seller would pass the bill on to his suppliers, or "discount" it with his banker. Such bills were commonly "accepted" by the buyers on whom they were drawn—that is, payment was guaranteed as of the future date specified in the bill. Then they became "trade acceptances." Where the buyer's name was not widely known but his local credit standing was good, essentially the same transaction could be carried on with a "banker's bill" by making an agreement by which the seller of goods could draw the "bill" against the buyer's banker, and the buyer would later reimburse the banker.

With a little ingenuity, capital could be raised through "bills" which had no direct linkage with commodity transactions. Such bills were known as "accommodation paper," and were viewed with suspicion—for the very good reason that their issue was likely to show that the debtor was trying to do business with inadequate capital and might go bankrupt.

outstanding loans, in a thoroughgoing "real bills" system, would cripple the buying power of disappointed borrowers. This reduction in buying power, in turn, would cripple the loan-repaying power of present debtors. The result is one that people have often observed when banks in general tried hard to reduce loans —a general "freezing" of credit.

"Shiftability" of Assets. Shrewd observers of American banking decided many years ago that "self-liquidity" of assets was a delusion. From the standpoint of the bank that holds an asset, they argued, it is "liquid" only if it is *shiftable.*

An asset which is "shiftable" is one which directly or indirectly will find another holder in case the present holder decides to part with it. Loans based on goods in process are indirectly shiftable if other banks are very willing to make such loans; for lending by other banks will provide funds to buy the goods which our bank's customer has to sell. Loans in such a form that they can be sold on an open market are directly shiftable.[48]

Securities for which there is a strong and active market are also directly shiftable. This is the case for all federal securities, and for bonds of well-known corporations and local governments. Bonds of small local concerns and of local governments whose credit rating is doubtful, however, may not be very shiftable.

Direct shiftability is at a minimum for real estate loans. The formalities of a mortgage have to be gone through all over again if it is transferred to a new creditor. Indirect shiftability of mortgages is pretty high at the time they mature. If the bank insists on repayment, the debtor can commonly place his mortgage elsewhere. Indirect shiftability of mortgages, however, is held down by the long term of mortgage contracts. Loans in which the personal relationship of banker and borrower is important are also low on the scale of shiftability.

Shiftability and Liquidity. "Shiftability" theorists also stress *price certainty.* Corporation stocks, if listed on the Stock Ex-

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[48] This is true of acceptances, as we have already seen. There is also such a market for "open-market commercial paper." This means promissory notes, made out for round sums and payable to bearer, issued by certain rather well-known business firms to raise capital for short periods. In effect, "open-market commercial paper" is the same kind of thing as "corporate bonds," except that it is issued for short instead of long periods, and that there are generally no formalities of pledging real estate or other assets for security.

change, are highly shiftable. There is always a market—at a price. But what the price will be, nobody can predict accurately in advance. Consequently, stocks are shiftable but not very "liquid." In the terms used in this book, they are low in "moneyness" because the amount of debts that can be cleared off by seliing them is not certain.[49]

It is for this reason that the account of bank assets above has stressed both the sort of market available and the certainty of price. Treasury bills are very "liquid" because a bank which holds them can readily shift its burdens—onto the Treasury, by waiting a few weeks till the bill matures; onto some other bank, by selling on the market; or onto a Federal Reserve Bank, by selling the bill or borrowing upon it. Corporation stocks are not very liquid for the reasons just cited—shiftability does not offset price uncertainty. Mortgage loans are not very liquid because they lack shiftability.

Any sort of asset can be given "liquidity" artificially if somebody chooses to create a ready market for it with a reasonably certain price. As will be seen in Chapter II, much of the activity of "central banks" (in the United States, of the Federal Reserve Banks) consists of creating markets for assets so as to influence bank policy. The assets which have the highest liquidity for banks today, on the other hand, are those for which the Reserve Banks and the Treasury provide markets—because strictly private markets give less price certainty.

Selection of "Sound" Assets; Credit Rationing. Even though liquidity may not be at issue in an individual case, the banker has to decide whether a loan or a bond is "sound"—that is, whether it is reasonably free from risk of loss.

Obviously, this decision involves sizing up the prospects of the firm or household whose debt is in question. The banker wants to be sure that there is enough earning power to cover interest and eventually retire the debt—or, as a minimum, enough so that

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[49] If holders of stocks close their eyes to the record of stock-price gyrations, and come to have unreasoning confidence in the stability of stock prices, odd results may follow. So long as this attitude holds, corporation stocks are a "near-money," whose holders feel their need for other "near-moneys" to be reduced. When some shock breaks down this unreasoning confidence, the "moneyness" of stock evaporates. Something of this sort seems to have happened around the business downturn of 1929.

the debtor can clearly borrow from somebody else to pay off what the bank lends. Assurance of these results depends upon the composition of the borrower's assets, the prospects of the industry in which the borrower is engaged, and alert and thrifty management. Incidentally, the banker also wants assurance that the borrower is honest and prudent.

Study of the prospects of applicants for loans and of firms whose bonds may be bought is always going on at the banks—it is for such study that they need high-salaried executives. But obviously the bank's officers cannot take the time to think themselves clear inside the borrower's problems. If they tried to do that, they would have to duplicate most of the policy-thinking within the borrowing firms—and then sit down to criticize it.

To get the job of credit analysis down to manageable proportions, bankers have to take short cuts. Instead of complete analysis of the borrower's affairs, they content themselves with a study of key items. Rules of thumb are applied—supplementing detailed study where the sum of money involved is important or where the borrower has a special claim to attention as an old customer, and displacing detailed study where the banker cannot afford to take much trouble. The banker insists that the borrower should show signs of reasonable prudence. For instance, he checks to see that the borrower carries adequate insurance against various risks, carries adequate cash balances, and steers clear of speculation unrelated to his business. He insists on a reasonable ratio (varying from industry to industry) of "current assets" (cash, receivables, and inventories) to "current liabilities." Where there is any doubt about the safety of the loan, the bank must be protected by pledge of "collateral" (securities, real estate, accounts receivable from the borrower's customers, or claims on commodities) with a margin of value over the amount of the loan.

Where possible, the bank also uses various types of "credit ratings" for borrowers, established by outside agencies. There are a number of specialists (one of the best-known is Dun and Bradstreet) whose "ratings" help both bankers and business firms with goods to sell in deciding whether a would-be borrower can safely be given a cash loan or goods on credit. "Ratings" are also very important with bonds—not only because banks value the opinion of the rating agencies (principally Moody's and Standard Statis-

tics), but also because bond ratings affect bank examinations. A bond rated as "high-grade" will pass muster without question from a bank examiner. But if the bond is rated as "low-grade" (or is not rated by these agencies), the banker will have to argue about his investment with the supervising authority. At best, this is a nuisance; and if the banker loses the argument, his own standing suffers.

The way bankers form their notions of "soundness" in earning assets has two important consequences. (A) It contributes to business fluctuations. (B) It means that borrowers are always subject to "credit rationing"—which affects the whole attitude of the nonbank public toward cash assets and "liquidity."

The effect on fluctuations goes back to the fact that standards of "soundness" unavoidably vary. A firm that has good business prospects on a business upswing may have very bad prospects on a downswing. Its loan application may thus be rated as "sound" on the upswing and "unsound" on the downswing, even though the firm's balance sheet shows just the same assets and liabilities. Besides, the firm's balance sheet will look weaker on the downswing. Thus, it is easy to get loans on an upswing and hard on a downswing—which obviously helps forward either expansion or contraction of business, whichever is in progress. Bond ratings also slide about somewhat in business fluctuations: more bonds are rated "high-grade" in prosperity. This shift in bond ratings probably makes less difference than the shift in the "eligibility" of loan applicants, since if banks will not buy corporation bonds they are often free to buy government bonds instead. But shifts in bond ratings as well as in loan standards doubtless add something to fluctuations of business.

The effect on "credit rationing" is more pervasive. From the borrower's standpoint, his ability to borrow depends largely on how the banker's rules of thumb happen to fit his case. Most of the firms in the United States probably feel that they are really entitled to borrow more than banks would lend them; and many would probably be glad to borrow more than they do, at the interest rates they are charged on the loans they get. We must beware of assuming that the limitation on the amount borrowed is willingness to pay the interest the bank charges. This is the case for some borrowers; but there is always (as economists put it

before the Great Depression) an "unsatisfied fringe" of would-be borrowers who are not allowed to borrow, and of actual borrowers who want more. Besides, even borrowers who can borrow all they want at present have to reckon on the limits which banking rules set to their "lines of credit," and on the fact that those limits may tighten in the future—especially in case of a slump.

The Balanced Portfolio. In choosing his "portfolio" of assets, the banker has to allow both for liquidity and for immediate earnings—both as means to long-run earnings—as I said at the outset. If he makes one decision which tends to lower the liquidity of his assets, he has to think about balancing it with some other decision that will raise liquidity.

The best starting point for analyzing the management of bank assets is the loan account. For years now, most banks have been delighted to grant all loan applications which looked reasonably "sound." [50] Few loans add much to a bank's liquidity; those that do the banker snaps up very quickly. Loans pay higher interest than most assets, and at the same time they build long-term earning power for the bank. Granting loans attracts customers and builds good will. Friendship with the borrowers means future chances to make profitable loans, and also a larger volume of deposits, which enables the bank to enlarge its total holding of earning assets. This good-will aspect, on the other hand, cuts still further into the liquidity of loans. The bank cannot try to raise cash by calling loans and refusing new ones without throwing away business connections it will need later on.

Besides loans, the bank is committed to hold some other assets of low liquidity (its banking house, and so forth). At the other end of the liquidity scale, it is committed to hold a great deal of cash to meet legal reserve requirements and to permit making change, and so forth. But there is a wide middle range in which bankers have relatively free choice. Roughly, this range covers

[50] This statement describes the situation during the upswing from the Great Depression—from 1933 to the opening of World War II, say—and since. On the downswing of 1929–1933, banks had to refuse to grant or extend many loans they recognized as "sound," because bank liquidity was too low. The same limitations on loans by bankers existed both in prosperity and in depression through much of past history. From this standpoint, 1933 looks like a watershed marking a permanent change in the banker's situation; although, of course, we *may* get back into a situation where the banker gets more sound loan applications than he can grant, besides having to reject "unsound" applications.

"excess reserves" plus "investments." [51] As of 1939, this range of play covered over 40 per cent ($26 billion out of $59 billion) of commercial bank assets; as of 1947, over 50 per cent ($78 billion out of $144 billion). For individual banks, the range of play is greater or lower than the average according to the proportion of assets absorbed in loans and in required reserves.

Within this range of play, a bank can adjust its liquidity by the way it chooses its assets. If it has many loans of low liquidity—and especially if it has to look out for a possible shrinkage of its deposits—it needs a great deal of liquidity within this range. A bank in this position may hold cash reserves in excess of requirements. Or it may concentrate heavily on low-yield but high-liquidity assets such as Treasury bills.[52] On the other hand, the bank may need little liquidity beyond what its required reserves provide. Its deposits may be highly stable (chiefly in time deposits, or in demand deposits which the banker has special reason to expect will stay in his bank). Its loans may be low in amount and unusually liquid in type. In either case, such a bank can afford to look for higher immediate earnings within its range of play. It can buy more long-term bonds—with less price certainty but higher interest yield.

In deciding about bonds, however, the bank has to consider price prospects. If the bank buys a 2 per cent bond now and the price drops 1½ points in the next year, the bank is no better off than if it had invested its fund in a one-year certificate yielding ½ of 1 per cent. A banker who is "bearish" about bond prices, then, will regard their higher apparent interest yields as illusory, and will not prefer bonds on account of their earnings to short-term securities with more stable prices. As between different classes of bonds (Treasury bonds versus railway bonds, say), the banker must look at both relative price stability and probable trends. He may think, for instance, that a Treasury bond which isn't likely to change price by more than 2 points in the next year

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[51] Good will may also affect a few investments. A bank which will not buy and hold part of the outstanding bonds of its own state or local government, in particular, cannot expect to be a depositary for its funds.

[52] Bankers sometimes speak of "secondary reserves"—meaning Treasury bills, bankers' acceptances, and open-market commercial paper. As the term implies, holding such assets is a good approximation to holding actual cash reserves in excess of requirements.

is more liquid than a railway bond which may change price by 6 or 8 points. But if he thinks Treasury bonds are at abnormally high prices and railway bonds at abnormally low prices, he is likely to prefer railway bonds.

Similarity of Nonbankers' Investment Problems. This question of how to "balance a portfolio" is not merely a bankers' puzzle. Every holder of property has a need both of liquidity and of immediate earnings. If he goes too far toward liquidity, he will be throwing away income he might have enjoyed. If he goes too far toward immediate earnings, he will risk a business catastrophe in case of a sudden need for cash. Going to either extreme will damage his long-run business prospects.

The question of how owners of property may carry out this "balancing" will come to a focus in Part II—especially in Chapter VIII. The nonbanker has a list of assets to consider which is different from the banker's list. In particular, he is not barred, like the banker, from owning houses, factories, and other "real assets" or from owning shares of stock in corporations. But for each asset he has to consider not only its earnings' advantages but also its shiftability, its price certainty, and its prospects of rising or falling in price—just like the banker.

E. The "Creation of Credit"

"Invisible Greenbacks" and Why They Matter. Everybody who knows anything about economic history realizes how much harm has been done by the excessive printing of paper money. Today, however, the role of money has been largely taken over by one of the near-moneys—bank deposits. Excessive creation of bank deposits (which one journalist has given the useful tag "invisible greenbacks") has the same sort of destructive possibilities.

There has been a lot of mystification and hocus-pocus about the process by which "invisible greenbacks" come into existence. Economists have long insisted that they are "created" by bank activities—and that banking, like printing greenbacks, is potentially a source of inflation. Conservative bankers long insisted that deposits came into existence by people "putting money in the bank," and that banking was inherently uninflationary. Of late years, this disagreement has faded. Bankers no longer feel forced to

argue that they can do no damage by expanding credit; although on the whole they trust that their operations do a lot more good than harm. Economists no longer have to fuss so much about their cleverness in observing that deposits can be created, and are more concerned with by-products of the process.

The discussion which follows will spell out the process of deposit creation through three stages (the individual bank account; the deposits of a single bank; the banking system). The wartime expansion will be traced out in concrete figures by way of illustration. The relation of credit creation or contraction to bank reserves will be traced, and some of the by-products which limit its effects discussed.

The Single Bank Account and the Single Bank. Suppose that Mr. Y. Llewellan Smith pulls out of his mailbox a bank statement from the Second National Bank showing that his balance at the end of the month was larger than at the beginning of the month. What must have happened?

On the left-hand side of Mr. Smith's statement is a list of amounts deposited, with dates; on the right-hand side, a list of amounts withdrawn, with dates. Mr. Smith may remember that one deposit was paper money left over from his trip the month before, and another his salary check (drawn by his employer, who also has an account at the Second National), and so forth. But on his statement, whether he deposited paper money or checks, or where the checks came from, does not show up. Neither does the statement show whether the checks Mr. Smith drew on his account were cashed over the counter, or deposited by the payees in the Second National or deposited elsewhere. What his statement does show is that the *sum* of paper money and checks put into his account has exceeded the *sum* of all checks drawn.

Progressing a step, suppose we find that during the month not only Mr. Smith but *all* depositors at the Second National increased their balances. The explanation cannot lie in checks (like Mr. Smith's salary check) which were both drawn on the Second National and deposited in it. Such checks add to one account at the Second National just as much as they subtract from another account. The general growth of deposit balances must show that paper money deposited over the counter exceeded paper money withdrawn over the counter, *or* that checks on outside accounts

deposited exceeded checks on the accounts of the Second National which were deposited elsewhere, or both.[53]

Deposit Creation in the Banking System. Now suppose that the increase in deposit balances is general for all depositors in commercial banks in the United States. This situation may show a general tendency to deposit more paper money than is drawn out over the counter (for instance, because the Christmas shopping season is over and the money which was in housewives' handbags has found its way into store tills and thence into bank accounts). But any check which one customer of the banks drew and another deposited must now cancel out—decreasing one bank account as much as it increased another. Doesn't this make paper-money transactions the only source of increased deposits?

The answer is, No. This isn't a matter of black magic. Besides inter-customer checks which subtract as much from one account as they add to another, there are other checks which are added but not subtracted (or vice versa). These other checks are those drawn when *one party to a transaction is a banker.* For example, suppose that a bank buys part of a new issue of municipal bonds. The bank's cashier draws a check to pay for the bonds—a check addressed to himself, and calling on himself to pay money to the order of the city which sold the bonds. This check goes to increase the city's bank balance, just as much as if the bonds had been bought by a private citizen. But the check *does not come out of any private balance with the bank.* You never opened your bank-statement envelope and found a memorandum that your balance was reduced from $496.88 to $472.36 because *the bank* had bought some bonds or made a loan—and you never will. The check with which the bank pays for the bonds immediately becomes a deposit liability of the bank—part of that little item 10 in Table 3. This leaves the bank's books in perfect balance because at the same moment the bonds become an asset. An extra deposit has been "created." The same thing happens when the bank makes a loan, or buys stationery.

There are also dealings in the opposite direction, in which deposits are obliterated ("retired") rather than created. When a borrower repays a loan, his check is deducted from his account,

[53] Among items which may be deposited, of course, may be borrowings from the Second National; see below.

TABLE 9: DEPOSIT CREATION DURING WORLD WAR II
(In billions of current dollars, rounded to $0.1 billion)

	Amounts on the Books			Changes		
	6/30/39	12/31/41	6/30/45	6/30/39 to 12/31/41	12/31/41 to 6/30/45	6/30/39 to 6/30/45
CASH OF NONBANK PUBLIC (excluding deposits at savings banks):						
1. Demand deposits, adjusted	27.4	39.0	69.1	11.6	30.1	41.7
2. Time deposits[a]	15.1	15.9	27.2	0.8	11.3	12.1
3. Total deposits	42.5	54.9	96.2[b]	12.4	41.3[b]	53.8[b]
4. Coin and paper money outside banks	6.0	9.6	25.1	3.6	15.5	19.1
5. Total cash	48.5	64.5	121.3	16.1[b]	56.8	72.9
SOURCES OF CASH:						
6. U. S. Gov't securities:						
a. Held at F. R. Banks	2.6	2.3	21.8	–0.3	19.5	19.2
b. Held at commercial banks	15.7	21.8	84.1	6.1	62.3	68.4
c. Total at banks	18.3	24.0[b]	105.9	5.8[b]	81.9[b]	87.6[b]
7. Other bank earning assets:						
a. Loans	16.4	21.7	23.7	5.3	2.0	7.2[b]
b. Other securities	7.2	7.2	6.8	–0.02	–0.5[b]	–0.5[b]
c. Combined	23.7[b]	28.9	30.4[b]	5.3[b]	1.5	6.8[b]
8. Monetary gold	16.1	22.7	20.2	6.6	–2.5	4.1
9. Treasury currency outstanding[c]	2.9	3.2	4.1	0.4[b]	0.9	1.3[b]
10. Misc. bank assets[d]	2.0	1.7	1.4	–0.3	–0.3	–0.6
11. Total sources, gross	62.9[b]	80.7[b]	162.1	17.8	81.4[b]	99.1[b]

12. Deductions:						
a. Misc. bank accounts	8.7	9.7	12.4	1.0	2.7	3.7
b. Treasury coin, paper, & F. R. Bank balances	3.5	3.1	2.9	–0.4	–0.2	–0.6
c. Treasury balances at commercial banks	0.8	1.9	24.4	1.1	22.5	23.6
d. Total deductions	12.9	14.7	39.7	1.8[b]	25.0	26.8[b]
13. Total sources, net	50.0	66.0	122.4	15.9[b]	56.4	72.4[b]
14. Discrepancy	1.5	1.5	1.1			

Source of Data: Federal Reserve Bulletin.

[a] Does not include deposits in mutual savings banks or Postal Savings. Government securities, and so forth, at mutuals are also omitted.

[b] Apparent discrepancies between these totals and components result from rounding of figures to nearest $0.1 billion.

[c] Small change, United States Notes (Greenbacks), and bank-notes for which the Treasury has taken over liability.

[d] Chiefly bank buildings. The "writedown" of these buildings from 1941 to 1945 largely accounts for the change in the "discrepancy," item 14.

[e] Includes: (*i*) capital funds of insured commercial banks; (*ii*) corresponding item for Federal Reserve Banks; (*iii*) deposits of foreign banks at Reserve Banks and at commercial banks; (*iv*) nonmember deposits at Reserve Banks; (*v*) miscellaneous liabilities of insured commercial banks.

but is not added to any other account. His deposit balance is down. But instead of increasing any other liability, the bank removes from its books an asset—the loan which has been repaid. The same thing happens when a bond is redeemed.[54]

Deposit Creation at Work in War Finance. The war finance of World War II shows the deposit-creation machinery at work—in a model several times life size. The basic procedure was simple. Banks bought government securities, and simultaneously credited the price to a "War Loan Account"—that is, a special deposit balance of the United States Treasury. As the government's war spending drew down Treasury cash, funds were transferred from War Loan Account to regular government checking accounts, and flowed out into the accounts of business firms and households.

The record from the outbreak of war till the end of 1941, and thence to the middle of 1945 (covering roughly the war period before our entry and the period of active fighting) is shown in Table 9. The public's deposit balances at commercial banks (item 3) grew from $42.5 to $96.2 billion—or by $53.8 billion. In addition, the public s holdings of coin and paper money (item 4) grew by $19.1 billion, making the total growth of cash (item 5) $72.9 billion. The banking system as a whole (counting both commercial banks and Federal Reserve Banks) acquired $87.6 billion of government securities (item 6c). This fact provides the main explanation for the growth of cash. There was also some growth of cash through loan expansion (item 7a), gold imports (item 8), and various other sources. On the other hand, since June 1945 came just at the end of a bond drive, a good part of the bank purchases of bonds was offset by an abnormal bulge in the War Loan Account (item 12c).

The ins and outs of the process may be seen more in detail in Table 10, which shows the same items before and after the bond drives of June 1944 and December 1944, and before the drive of

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[54] This offset of "deposit creation" (or retirement) by a change of assets is characteristic of bank dealings.

On a much smaller scale, banks also create deposits by "income account" transactions, such as salary payments to employees, dividend payments, or tax payments. In the other direction, deposits are retired by such transactions as receipt of loan or bond interest and service charges imposed on customers. In most cases these transactions are charged against asset accounts or liability accounts other than deposits. Insofar as "accrual" of such items is not recognized, the effect shows up in the "undivided profits" account on the liability side of the balance sheet.

June 1945.[55] Before the June 1944 drive, the Treasury's cash balance (items 12b and 12c of the table) was rather low by wartime standards—about $9.7 billion. The drive built up the Treasury cash balances in June 1944 by about $12.7 billion. Of this, $5.8 billion came directly from bank acquisition of government securities (item 6c); $2.5 billion came from a growth of bank loans (item 7a)—chiefly to finance bond subscriptions by the borrowers; $4.4 billion came from reduction of the public's cash (item 5), as bond buyers drew on their checking accounts.

After the drive, the Treasury was able to live on its fat for half a year. In the five months from June 30 to November 30, 1944, it drew down its cash (items 12b and 12c) by $11.8 billion to meet the wartime deficit; this cash was transferred to private hands. Banks kept on buying government securities (item 6c) between bond drives,[56] adding $6.7 billion. Therefore, the public's gain of cash (item 5) was $17.3 billion—$5.5 billion greater than the Treasury's loss. On the eve of the next bond drive, Treasury cash (items 12b and 12c) was about back to the starting point, at $10.7 billion. The public, however, had gained $12.9 billion of cash (item 5) from May 31 to November 30—almost exactly matching the growth of $12.5 billion in government securities held at banks.

A second cycle of just the same sort followed. In December 1944, the Treasury's cash balances (items 12c and 12b) rose by $12.9 billion. Of this, $6.4 billion came directly from bank purchases (item 6c), $1.0 billion from expansion of bank loans (item 7a), and $5.0 billion from reduction of the public's cash (item 5).[57]

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[55] Sales in each drive opened before the May or November date shown and extended past the end of June or December; but the overwhelming bulk of bonds sold were paid for in June and December.

[56] Private parties who wanted to make impressive subscriptions in the drives prepared themselves by selling off securities to banks. So did speculators who bought during drives to get a "free ride" and sell at a profit. Thus bank purchases between drives were the indirect source of private purchases in the drives which followed.

[57] Since only the main items of change are mentioned in the text, the figures do not quite add up. For the missing items, see the table. Note, however, that even the more complete figures of the table show a small margin of error (item 14). For this month, "net sources of cash" (item 13) show a fall of $5.4 billion against a fall of $5.0 billion in cash (item 5), with a discrepancy of $0.4 billion. This discrepancy results from incompleteness of figures for noninsured banks, from rounding errors, and from errors in my own estimates of November 30 figures for banks not reporting weekly.

TABLE 10: MACHINERY OF DEPOSIT CREATION, 1944–1945

(In billions of current dollars, rounded to $0.1 billion)

	Amounts on the Books					Changes				
	5/31/44	6/30/44	11/30/44	12/31/44	5/31/45	5/31/44 to 6/30/44	6/30/44 to 11/30/44	11/30/44 to 12/31/44	12/31/44 to 5/31/45	5/31/44 to 5/31/45
CASH OF NONBANK PUBLIC (excluding deposits at savings banks):										
1. Demand deposits, adj.	65.1	60.1	72.5	66.9	76.0	–5.0	12.4	–5.6	9.1	10.9
2. Time deposits[a]	21.0	21.2	23.7	24.1	26.7	.2	2.5	.4	2.6	5.7
3. Total deposits	86.1	81.3	96.2	91.0	102.7	–4.8	14.9	–5.2	11.7	16.6
4. Coin and paper money outside banks	20.5	20.9	23.3	23.5	24.8	.4	2.4	.2	1.3	4.3
5. Total cash	106.6	102.2	119.5	114.5	127.5	–4.4	17.3	–5.0	13.0	20.9
SOURCES OF CASH:										
6. U. S. Gov't securities:										
a. F. R. Banks	14.3	14.9	18.4	18.8	21.0	0.6	3.5	0.5[b]	2.1[b]	6.7
b. At commercial banks	63.2	68.4	71.6	77.6	77.5	5.2	3.2	6.0	–0.1	14.3
c. Total at banks	77.5	83.3	90.0	96.4	98.5	5.8	6.7	6.4[b]	2.1[b]	21.0
7. Other bank earning assets:										
a. Loans	18.5	21.0	20.6	21.6	20.7	2.5	–0.4	1.0	–0.9	2.2
b. Other securities	6.2	6.3	6.2	6.3	6.6	.1	–0.1	.1	.3	.4
c. Combined	24.7	27.3	26.8	28.0[b]	27.3	2.6	–0.5	1.2[b]	–0.7[b]	2.6
8. Monetary gold	21.3	21.2	20.7	20.6	20.3	–0.1	–0.5	–0.1	–0.3	–1.0
9. Treasury currency[c]	4.1	4.1	4.1	4.1	4.1	.0	.0	.0	.0	.0
10. Misc. bank assets[d]	1.5	1.5	1.5	1.5	1.4	.0	.0	.0	.0[b]	–0.1
11. Total sources, gross	129.0[b]	137.4	143.0[b]	150.6	151.6	8.4[b]	5.5[b]	7.6[b]	1.0[b]	22.6[b]

12. Deductions:										
a. Misc. bank accounts [e]	11.6	11.9	11.7	11.8	12.3	0.3	–0.2	0.1	0.5	0.7
b. Treasury coin, paper, and F. R. balances ..	2.6	2.9	2.5	2.8	2.7	0.3	–0.5[b]	.3	–0.1	0.1[b]
c. Treasury balances at commercial banks ..	7.1	19.5	8.2	20.8	8.2	12.4	–11.3	12.6	–12.6	1.1
d. Total deductions ..	21.3	34.1	22.4	35.4	23.2	12.8[b]	–11.7[b]	13.0	–12.2[b]	1.9
13. Total sources, net	107.8	103.3	120.6	115.2	128.4	–4.5[b]	17.3[b]	–5.4	13.2[b]	20.7[b]
14. Discrepancy	1.2	1.1	1.1	.7	.9					

General Footnote: See footnotes for Table 4, which are also applicable to this table.

Then, in the next five months, the Treasury again spent its balances (items 12c and 12b) down to $10.9 billion—a reduction of $12.7 billion. The public gained $13.0 billion of cash (item 5). On the eve of the next bond drive, May 31, 1945, while Treasury cash (items 12c and 12b) was back to the starting point of November 30, the public showed a net gain of cash (item 5) over the six-month cycle of $8.0 billion, matching closely the rise of $8.5 billion in government securities held at banks (item 6c). Through ups and downs over the year from May 31, 1944 to May 31, 1945, the public's cash (item 5) had risen by $20.9 billion, and bank holdings of government securities (item 6c) by $21.0 billion.

Bank Reserves and Creation of Deposits. Deposits are created when bankers have incentives to expand earning assets; deposits are obliterated when there are incentives for bankers to shrink earning assets. These incentives are strongly affected by the reserve position.

Additional deposits cannot be created unless commercial banks have reserves (or can borrow reserves) in excess of the minimum required against their existing deposits. There is nothing about buying earning assets and thus building up deposits which will increase the total *amount* of reserves *held.* But the growth of deposits will increase the amount of reserves *required.* If the banks start with just the legal minimum of reserves, a growth of deposits and reserve requirements will bring requirements above actual reserves. The banks must either reverse the credit-creation process and retire deposits until their reserves again suffice, or else they must borrow additional reserve funds—which they dislike to do.

While the banks *may* expand if they have excess reserves, they are not forced to do so. There is no maximum proportion of reserves to deposits which they are forbidden to exceed. If banks want to be extremely liquid, and if all the assets they are able to buy are of low liquidity, banks may insist on holding excess reserves. They may even find that they can buy up *all* the assets of certain classes which they think are at all "bankable" and that they still cannot use up all their excess reserves. (Thus, during the late 1930's, the banks accepted all offers to sell them Treasury bills, bankers' acceptances, and open-market commercial paper, made all the loans they thought would be repaid, and still had an

appetite for more such assets. But this cannot happen for all classes of assets, since there are always some assets of which banks could get more at a price.[58] In particular, some bankable bonds are always held by non-bankers who would sell if the price went high enough. If banks choose to hold excess reserves—that is, to leave their deposit-creating power unused—it is because they are "bearish" about the prices of bonds and will not risk more of their funds on the bond market.

In a downward direction, a shortage of reserves can force banks to contract their assets and retire deposits. The option to borrow additional reserve funds can be made so very unpleasant that banks will not seek this way out.[59] Thus, the incentives for deposit retirement can always be made strong enough to be sure to work—as incentives for deposit creation cannot.

The Deposit-Creation Multiplier. A bank which has a million dollars in excess reserves can obviously buy extra earning assets up to a million dollars. For instance, it can buy a million dollars' worth of railway bonds on the New York Stock Exchange and pay with a check on the Federal Reserve Bank.

When this happens, the seller of the bonds has the million-dollar check to deposit. This check will add a million dollars to his banker's deposit liabilities, and *also* a million dollars to his banker's reserves. The increase in reserve requirements being only a fraction of the increase in deposits, the seller's banker thus gets excess reserves of well toward a million dollars; and he, in his turn, has acquired power to buy new earning assets and create deposits.

A million dollars of excess reserves, therefore, can generate more than a million of new deposits. How much more? That all depends. Suppose that all banks have 10 per cent reserve requirements, and that all the successive checks drawn by bankers who

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[58] Even the classes of assets listed earlier are not strictly rigid. Loans in the 1930's could have been expanded somewhat if bankers had been less scrupulous about safety and prompt repayment. In fact, bankers put a great deal of ingenuity into finding ways to extend the field of bankable assets with no great increase of risk (and to discovering low-risk assets previously overlooked). The great growth of banks' consumer loans and of "term loans" to business in the years just before and just after World War II was the fruit of this search for assets —and thus, indirectly, of the excess reserves of the 1930's.

[59] See below, pp. 98–100.

get excess reserves and by customers who get hold of newly created deposits are deposited rather than cashed. In this case, if we start with a million of excess reserves, there will still be some excess until the deposit-creation process has built up deposits by $10,000,000.

Actually, required reserve ratios vary with the location of the bank and the type of deposit. Moreover, some of the successive checks will be cashed. If the deposit-creation process increases people's total cash holdings (coin and paper money plus bank deposits), they are likely to hold part of the increase in money rather than put it all into bank balances. This means putting part of the excess reserves into paper money to be paid out over bank counters.

There has been much discussion as to what reserve ratios and what distribution of cash in different forms should be assumed. There is no one right answer, as these things vary from time to time. But for illustration, suppose that an extra million of money-plus-commercial-bank-deposits will be distributed in the percentages which existed in June 1947: 18 per cent in coin and paper money, 31 per cent in checking deposits at central reserve city and reserve city banks (reserve ratio, 20 per cent), 18 per cent in checking deposits at country member banks (reserve ratio, 14 per cent), 20 per cent in time deposits at member banks (reserve ratio, 6 per cent), 8 per cent in checking deposits and 4 per cent in time deposits in nonmember insured banks, and 1 per cent in noninsured banks. The drain of reserves into circulation as money outside banks, plus reserves on member bank deposits at 1947 ratios, amounts to 28 per cent of the million dollars. Allowing a little for reserves at nonmember banks, we should raise this 28 per cent to about 30 per cent. The "credit-creation multiplier"—showing how many millions of *added deposits* can be created per million of *excess reserves*—is the mathematical reciprocal of this percentage. One divided by 30 per cent (that is, 1/0.3) is about 3⅓. So we may guess the credit-creation multiplier to be roughly from $3 to $3.50 per dollar of excess reserves. This is a great decline from the 1920's, when economists reckoned it at about 10.[60]

[60] In the 1920's, reserve ratios were about half those of 1946; the proportion of deposits in member banks with high required reserve ratios was smaller; and the proportion in nonmember banks was larger.

Deposit Creation and the Public's Balance Sheet. On re-examination, the fact of deposit creation is rather less exciting than economists used to think. It is true that bank deposits are nearly equivalent to money. The creation of bank deposits today is very like the printing of bank notes a hundred years ago. But this effect is partly offset by other things that happen when bank deposits (or notes) go into circulation.

Bankers do not create deposits to give them away, but to buy things. If a bank buys more railway bonds, someone must have sold those bonds. The seller has bank deposits, which are a near-money. But he has reduced his holdings of bonds, which are also a near-money—although not so near. His "liquidity" is not increased as much as if somebody had made him a gift of the bank deposits. He has gained the liquidity of the bank deposits, but has lost whatever liquidity he attributed to the bonds.

Similarly, if a business firm gets bank deposits by borrowing at the bank, it gains liquidity by having more cash, but loses liquidity somewhat by having a note at the bank. (Debts, especially short-term debts, must be regarded as having *negative* liquidity to the debtor.) Thus, the actual transactions by which deposits are created always involve losses as well as gains of liquidity for the people with whom the banks do business—although the loss in liquidity is always smaller than the gain.

On the other hand, we cannot afford to look only at *transactions.* If banks get into a position to lend more freely, it is not only the actual loans they make that matter. They are able to *offer to lend* more freely, and "credit rationing" is relaxed. In business, *being able to borrow* contributes to "liquidity" even though the loan is never closed. Ability to borrow—even though we lack statistics on it—is itself a substitute for having cash on hand, as a safeguard against emergencies, and gives the potential borrower more freedom of action.

Thus, the sort of change which leads banks to lend and buy bonds has monetary effects on non-borrowers that reinforce the effect of actual lending. In the other direction, when credit tightens and businessmen who have enjoyed ample "lines of credit" are told they are no longer free to borrow, this fact has a deflationary effect over and above that of actual loan repayment.

Somebody has to go into debt (or reduce his debts receivable)

in order that banks can create deposits. But this somebody need not be a household or business firm—it may be the government. During most of World War II, as we saw above, deposit creation rested on growth of government debt; and the same was true from 1933 to the outbreak of war. When it is government that is going in debt, the negative liquidity of added debt does not weigh on private business decisions.[61]

All in all, deposit creation is probably rather less inflationary than successful counterfeiting, per dollar of money or near-money created. Deposit retirement by contraction of bank earning assets is clearly less deflationary than evaporation of bank deposits through bank failures, such as happened in the early 1930's. But it is still roughly true that creation or retirement of "invisible greenbacks" through change in bank earning assets is equivalent to creation or retirement of paper money.

* * *

Note on Exercises and Supplementary Readings

The "deposit creation" material of section E is fundamental for an understanding of all monetary problems. To secure his grasp of it, the student will find it profitable to work out tables like Tables 9 and 10 for other periods from the *Federal Reserve Bulletin.* Another exercise which will give command of source materials as well as of the way in which bank accounting hangs together is to bring Tables 2–8 up to date from FDIC and Federal Reserve figures, and to look at figures for banks classified by type of supervision and region.

On banking in the United States before World War I, Horace White, *Money and Banking* (Boston: Ginn and Company, 4th ed., 1911) is lively and fairly detailed. A convenient brief summary of bank history is given in Federal Reserve Board, *Banking Studies* (Washington, 1941), pp. 5–62.

As a work of reference on how things are actually done, the responsibilities of bank officers and directors, and so forth, R. B. Westerfield, *Money, Credit and Banking* (New York: Ronald Press, 1938) is very serviceable, having a wealth of concrete information and a good index.

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[61] The interesting "psychological" backwash of government borrowing will be considered later in the book.

— *Chapter II* —

GOVERNMENT CONTROL OF BANKING

A. Origins of Controlling Agencies

Meaning of "Control." Bank control is immensely complicated in detail. It centers on Federal Reserve management of bank reserves to influence bank earning assets—the topic of section D of this chapter. But to see this central phase of control in perspective, it is important to look into the history of bank control, and into the working of other agencies with which Federal Reserve operations interact.

Bank control is *not* bossing banks around. Government agencies do not tell a bank to name Mr. X. Y. Z. Smith as vice-president,[1] or how much to pay the first teller, or whether or not to make a loan to the Marginal Machine Works. Banks are left to make their own decisions about all the individual transactions of their business.

Bank control is influence, not dictatorship. Banks are subject to prohibitions: they must not pay interest on checking deposits; they must not lend heavily to their own officers and directors; they must not buy speculative corporation stocks; they must not engage in any branch of business not accepted as part of banking; [2] they must not lend more to speculators on securities than allowed

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[1] *Exception.* During the middle 1930's, when the Reconstruction Finance Corporation held large amounts of bank stock, it sometimes used its voting power at stockholders' meetings to choose bank directors and bank officers. Furthermore, the licensing of a bank to reopen after the "bank holiday" of 1933 sometimes hinged on its willingness to replace officers whom the state or federal authorities thought unsatisfactory.

[2] *Illustrations.* A bank can rent safe deposit boxes, but cannot go into the business of insuring valuables which people keep in their own houses. If it has more space than it needs in the buildings where it does its deposit and loan business, it may rent offices to others; but it cannot simply build office buildings to rent.

by the Federal Reserve "margin" rules; and so forth. Banks are subject to general rules of positive action—particularly to rules requiring them to keep minimum reserves. Banks are subject to special incentives to do things that public policy desires. For example, if they make loans to homeowners in specified form, these loans will be "insured" by the Federal Housing Administration.

Most important of all, banks are always subject to incentives to create more deposits, or retire deposits, or hold them level.[3] These incentives center about the relation of actual reserves to required reserves—a relation which the control agencies can alter.

Early Stages of Control. From the beginnings of banking in this country, there have always been rules for banking and agencies to enforce them. Rules were laid down in bank charters, bank legislation, and court decisions. These rules were chiefly prohibitions on some types of transactions, plus reserve requirements. The government enforced the rules by requiring banks to submit statements of condition (for study by the supervising agencies and for publication) several times a year, and by bank examination.

Until the Federal Reserve System was established in 1913, the law made it nobody's business to do more than guard the "soundness" of bank loans, the legality of bank-note issues, and so forth. No one was responsible to see whether banks were creating deposits on an unhealthily large scale, or whether they were retiring deposits when that might accentuate a depression. From 1836 to 1913 the United States lacked a central bank. Under the "Independent Treasury System" established in 1846, the Treasury was supposed to keep its own funds in Subtreasuries in gold (later, in greenbacks or silver), and to avoid contact with banks.

Paradoxically, the "Independent Treasury System" forced the Treasury to worry about banking. The Treasury's receipts and outlays came in spurts; and when the Treasury's cash went up, bank reserves of coin and paper money went down. For the Treasury to keep from wrecking the banks by jerking their reserves up and down took careful management. At crises, deputations of bankers were always on hand to suggest remedial measures to the Treasury. But improvising remedies for the series of

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[3] See above, pp. 72–74.

emergencies that this clumsy system generated was about all the Treasury could manage.[4]

Control under the Federal Reserve, 1913–1932. The setting up of the Federal Reserve System put an end to the fiction that general monetary conditions were nobody's business. The Reserve Banks were made responsible for "sound credit conditions." In practice, they worked in co-operation with the Treasury. During World War I and into 1919, the Treasury dominated the partnership (because of its need to float war loans); but after that the Federal Reserve System was the source of banking policy.

The Federal Reserve continued to use the old-fashioned controls of reserve requirements, taboos on certain types of assets, "calls" for statements of condition, and bank examinations. In addition, it began conscious use of incentives for expansion or contraction of bank credit and for steering credit in desired directions. Still further, it attempted control by "moral suasion" and publicity—as when it tried to persuade banks not to finance further inflation of the stock market in 1929.

New Control Agencies, 1932 Onward. The Great Depression of the 1930's undermined the "soundness" of debts by lowering the prices of the underlying property and reducing the incomes of debtors. The resulting series of debt crises led the government into a series of rescue operations. In consequence, new government agencies were created and old ones expanded, so that the system of bank control was changed. The Reconstruction Finance Corporation, farm loan agencies, and home loan agencies strengthened bank assets. The RFC rescued many banks by making loans; and later the RFC and the Federal Deposit Insurance Corporation combined to restore public confidence in banking. This aspect of bank control is discussed in section B of this chapter.

Present Controls. The bank control situation was not greatly affected by World War II. The partnership between Federal Reserve and Treasury is still the most important part of the control system. The chief shift is that it seems that the Treasury may have become permanent senior partner. During World War II

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[4] The law was forever placing the Treasury in a false position, and much of what it did to meet emergencies was of doubtful legality. On this side of monetary history, see Margaret G. Myers, *New York Money Market* (New York: Columbia University Press, 1931), Vol. I, Chapters IX and XVII.

(as during World War I), the Treasury dominated the Federal Reserve because of the overshadowing importance of war finance. In the postwar period, the proportion of bank assets made up by Treasury securities is so high that the handling of the public debt will probably continue to overshadow the private credit field, where the Federal Reserve has more direct influence.

The fringe of credit-control agencies left over from the great depression will be discussed first, to clear the ground, in section B of this chapter. Section C takes up bank examination and other "qualitative" credit controls. Section D deals with the bank reserve structure.

B. The Fringe of Federal Agencies Affecting Banking

The Depression Debt Crisis and the Creation of the Fringe Agencies. Of all the agencies to be discussed in this section, only one group—that dealing in farm loans—existed before 1932. The others were brought into existence by the debt crisis of the Great Depression.

The great deflation of 1929–1932 cut the national income in half. Many debts which were "sound" in 1929 were thus made "unsound." The debtors could neither pay them off out of income nor settle them by selling off the property pledged as security. Thus, bank credit became "frozen." Banks could not collect from many of their debtors if they pressed them; and corporation bonds (representing long-term debts of railways, electric power companies, and so forth) fell in market price.

When depositors withdrew their funds from a bank, it often happened that the bank could not get enough cash from its bond holdings and loans to meet the withdrawals. Then the bank "suspended payments"—that is, closed its doors and ceased to pay checks over the counter or through the clearinghouse.[5] Bank

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[5] After suspension, a bank was sometimes able to rally its forces and reopen—often with help from stockholders or from other banks. Sometimes the suspended bank (or a bank threatened with suspension) would be absorbed by another bank—both its deposit liabilities and its assets going into that bank.

If it could not reopen or arrange a merger, a suspended bank had to go into liquidation. A receiver was appointed, who had the job of getting cash for the bank's assets and paying it out to depositors in the form of "dividends" on deposits tied up.

suspensions began on a serious scale late in 1929, and continued (with occasional breathing spells) into 1933.

Chiefly in hopes of stopping the bank crisis, the federal government set up the Reconstruction Finance Corporation early in 1932. The RFC aimed to help banks, both directly, by lending them needed cash and, indirectly, by safeguarding their railroad bonds. But after a brief improvement early in 1932, the bank crisis got worse and worse until the general suspension in the "bank holiday" of March 1933.[6]

Public confidence in the banks was badly shaken by the 1929–1933 experience. To help restore confidence, the Federal Deposit Insurance Corporation was started in 1933. It guaranteed depositors against having their funds tied up by bank suspensions. The RFC backed up deposit insurance by buying stock in weak banks to make them eligible for insurance.

Among bank assets, the most solidly "frozen" class were mortgages. A large proportion of mortgage debtors were "in default" in the worst years of the depression—that is, were not paying principal (or even interest) when due. Banks and other credit institutions tried to protect themselves by foreclosing mortgages; but the result was hardship for farmers and homeowners without much financial help to the creditors. In 1933–1934 the federal government stepped in—taking over ownership of billions of dollars' worth of defaulted mortgages and giving banks and other creditors bonds in exchange. This action was accomplished through the expanded farm loan agencies and the Home Owners' Loan Corporation. Presently the home loan agencies undertook "insurance" of certain types of loans to homeowners.

So much for the origin of this "fringe" of government agencies affecting banking. Some incidental points of their history will come up in the discussion of the different groups of agencies involved. But the main emphasis is on the way these agencies increase the "liquidity" of debts—making bank debts (deposits) more attractive as assets for the public, and the public's debts (loans and bonds) more attractive as assets for the banks.[7]

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[6] See Chapter XII.

[7] The debt troubles and rescue efforts of 1929–1937 were the subject of my *Debts and Recovery* (New York: 20th Century Fund, 1938). Detailed figures and analysis supporting this section will be found there.

The Reconstruction Finance Corporation. The RFC was the first of the "fringe" agencies to take hold on banking. But its influence has largely faded out, so that this discussion will be chiefly in the past tense.[8]

At the outset in 1932, the main jobs of the RFC were to help imperiled banks by making loans to them, and to help railways avoid defaults on their bonds. In both jobs, the RFC took hold hard. By the end of 1932, it had outstanding loans of nearly $600 million to banks and $275 million to railways. Direct loans helped banks face "runs" and doubtless dissuaded many depositors from turning their bank balances into hoarded paper money.[9] Loans to railways enabled them to pay interest and principal on their bonds as they came due. Stopping defaults eased the panic which was pushing down bond prices on the Stock Exchange, so that railway bonds were more "liquid" in the eyes of bankers and bank examiners. Direct RFC loans to the banks reached their peak in June 1933; loans to railways reached theirs in 1935.

On the upswing after the bank holiday, the RFC helped clear up the wreckage by large loans to bank receivers, with which the latter could speed up the payment of dividends to depositors in closed banks. At their peak, late in 1934, these loans were over $400 million.

While the FDIC was getting under way, the RFC bought over $900 million of newly issued bank stock. This assistance gave banks a wider margin of assets over liabilities. The RFC thus reduced the danger of bank failures (and of losses to FDIC) in two ways: by improving public confidence in banks, and by making bank stockholders (including the RFC) able to absorb larger losses in case of a bank suspension before losses would begin to fall on FDIC.

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[8] The operations described here were by no means the whole job of the RFC, which was the financial Pooh-Bah of the depression and World War II. The RFC distributed $500 million of relief money to the states in 1932–1933, for instance, and had an important voice in locating new factories during World War II.

[9] The characteristic attitude of the bank depositor in a panic is summed up in the story of the depositor who got a bank vice-president on the phone, one morning when the lines at the tellers' windows were so long they stretched out the doors onto the sidewalk. What the depositor wanted to know was this: "Can I get my money if I come in for it? Because if I can I don't want it, but if I can't, then I do!" Assurance that the bank had plenty of money on hand could ordinarily stop a run.

During the later 1930's the RFC made loans to local governments for "self-liquidating projects" (income-yielding public works, such as irrigation systems). The Public Works Administration made similar loans. In good part, the local-government securities which the RFC and PWA obtained in this way were sold off later—largely to bankers. Thus, in the end, these loans increased the supply of "bankable assets." It might seem that RFC was making loans which banks would otherwise have made. But, on the whole, banks were probably too nervous to take the responsibility of such loans until the projects had developed far enough to make it clear that the securities would be paid. Thus, these assets would not have been "bankable" if RFC or PWA had not stepped in. In addition, there were cases where the *offer* of an RFC loan was used to persuade a bank or group of banks to make a loan that they had been inclined to reject.

"Industrial loans" of the RFC (and similar loans made on a small scale by the Federal Reserve Banks) played a similar part on the market for business loans. During the 1930's, the RFC and Federal Reserve made such loans on a modest scale. But commitments from these agencies to lend them funds helped would-be borrowers deal with banks. And the fact that RFC was ready to risk its money doubtless helped bankers and bank examiners get over the fear of loan risks which the period 1929–1933 had built up. During World War II, the RFC and other direct-lending agencies (notably the Smaller War Plants Corporation) were used to finance war plant construction.

Farm Loan Agencies. The farm loan agencies were the only group of the "fringe agencies" here discussed which had a predepression history. Farmers for generations had paid higher interest rates than other people both on mortgages and on short-term loans.[10] To help cure this disparity, the Federal Land Banks (for mortgages) and the Federal Intermediate Credit Banks (for working-capital loans) were set up in 1917.[11] The Treasury supplied most of the capital.

[10] This disparity reflected the fact that country banks were rich in loan opportunities but poor in deposits; while city banks were rich in deposits and relatively poor in loan opportunities. The taboo on branch banking prevented merging the two, and kept the interest spread much wider than in Canada, where the same banks have offices in both city and country.

[11] The Intermediate Credit Banks work on a relatively small scale, and will be discussed only incidentally here.

The Land Banks obtained funds for their lending by issuing Land Bank Bonds, which banks found were acceptable as assets. The mortgage debts which farmers owed the Land Banks were repayable in installments, over a period of from 15 years up to 40 years. By predepression banking standards, such a long-term mortgage was not "bankable," so that the effect of Land Bank operations was to transmute nonbankable assets into bankable assets.

During the deflation period of 1929–1933, banks and other credit institutions (notably life insurance companies) found their farm mortgages "frozen." Cash farm income by 1932 was well below half the 1929 level, and farm land prices had fallen sharply. Many farm debtors could neither pay off their debts out of income nor sell their places for enough to pay the mortgage. About 45 per cent of farmers with mortgages (owing 52 per cent of the mortgage debt) were in default at the beginning of 1933.

When creditors foreclosed, they found that they had exchanged an illiquid mortgage for unsalable real estate; farms would fetch so little at forced sale that creditors hated to take the loss and felt obliged to hold the land. (The farmer who lost his place was sometimes evicted, and sometimes stayed on as tenant.) The foreclosure process was obviously very hard on farmers, and yet was not helping creditors very much. Many states passed "moratorium laws" to stop foreclosures for several years; and everywhere the courts tried to give debtors more time.

In the spring of 1933, the federal government stepped in. The Land Banks were authorized to lend up to 50 per cent of "normal value" of a farm (as compared with 50 per cent of "market" value previously). In addition, there was set up a Federal Farm Mortgage Corporation which could lend up to 75 per cent. Where a farmer couldn't pay his debt to a private creditor, the federal farm loan agencies would arrange a deal by mutual consent. The farmer's mortgage would be taken over by the Federal Land Bank (or partly by the Land Bank and partly by the FFMC) and put on a long-term "amortized" basis—calling for small installments of principal over many years, instead of a lump-sum repayment in one or two or five years, such as bank and insurance mortgages used to call for. Thus, the debtor was taken care of. What the

creditor received was a swap of his mortgage for FFMC bonds guaranteed by the United States Treasury—converting a frozen asset into a liquid asset. In the process, about 20 per cent of the farmer debtors got their debts scaled down—the bonds that went to the creditor being less than the face of the old mortgage which was canceled. In 1933–1936, about $2 billion of mortgages (a quarter of the farm mortgage debt) were refinanced in this way. Of the $2 billion advanced by the federal farm mortgage agencies, about $470 million went to banks—$344 million to settle mortgages and $125 million to pay other bank debts. Federal farm debt relief also included federal farm mortgage moratorium laws in 1933 and 1935.

The recent scale of farm credit agency operations which affect banking can be seen from the situation at the end of 1946.[12] These agencies owed about $1.1 billion on bonds, and so forth, held by private owners. A good fraction of this debt was doubtless held by commercial banks. Farmers, farm co-operatives, and so forth, owed these agencies about $1.6 billion—about $1.1 billion on mortgages plus about $0.5 billion on short-term loans. Thus, slightly over $1 billion of assets which would probably not otherwise appear as "bankable" are transmuted into bankable assets by these agencies.

Home Loan Agencies. The home mortgage situation in the trough of the great depression was much like the farm mortgage situation—except that there was no equivalent of the Federal Land Banks. Between a third and half of the homeowners with mortgages were in default; and banks and other credit institutions found their loans "frozen."

As a rescue operation, the Home Owners Loan Corporation was set up in 1933. It intervened between debtor and creditor much as did the farm loan agencies. It gave the creditor government-

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[12] These figures cover:

Federal Land Banks
Federal Farm Mortgage Corporation
Banks for Co-operatives
Federal Intermediate Credit Banks

and one other small agency. They do not include the Commodity Credit Corporation, which owed about $0.2 billion outside the government—the corresponding assets being farm products or loans to farmers to carry farm products.

guaranteed bonds in exchange for his mortgage, and put the debtor under contract to pay off his debt to the HOLC over a term of years. Out of about $3.1 billion loaned, about $0.5 billion went to refinance mortgages held by commercial banks. By the end of 1946, HOLC mortgages had been paid down to about $0.6 billion, and the HOLC's bond debt (except for bonds held by the Treasury) had almost disappeared.

In 1935, the Federal Housing Administration began the "insurance" of home mortgages. To be insured, mortgages must be less than a stated ratio of a conservative appraisal of the value of the house, and must provide for "amortization" of the principal through monthly installments over a term of years. In case of default on an insured mortgage, the FHA stands ready to exchange its own marketable "debenture" for the mortgage, so that the creditor is secure against loss. Mortgages of this sort would not have been regarded as "bankable" before the Great Depression; but, with the insurance, they are very satisfactory bank assets. Commercial banks have held nearly half the insured mortgages outstanding; their holdings were about $1.7 billion at the peak during the war (1943) and about $1.5 billion just before the start of the postwar growth.[13]

The Federal Deposit Insurance Corporation. When the banks were reopened after the bank holiday of 1933, people understood that the government would set up a system of deposit insurance. The Banking Act passed in June 1933 set up the Federal Deposit Insurance Corporation with government capital. A "temporary insurance fund" went into operation at the beginning of 1934, and was superseded in September 1935 by a permanent fund.[14]

If an insured bank is suspended (unless it can reopen promptly), the FDIC provides for quick payment of insured deposits. Each depositor is insured up to $5000. The FDIC often acts as receiver for insured banks in liquidation. Claims of depositors for

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[13] The FHA also insures shorter-term loans for property repair and modernization; at the end of 1946, commercial banks held about $234 million of such loans, out of about $344 million outstanding.

[14] The Banking Act of 1935 set up the general pattern under which FDIC has operated since then. For the FDIC's supervisory functions, see the next section of this chapter.

amounts exceeding $5000 and claims of the FDIC on account of insured deposits paid are both met (to the highest percentage possible) out of the failed bank's assets. Actually, when a bank closes, the larger depositors commonly have got wind of the trouble and drawn out their funds. Of $110 million of deposits in insured banks that went into receivership in the years 1934–1945, only $11 million were not fully paid.[15] Another $395 million of deposits was in insured banks which were endangered but which merged with other banks with financial help from FDIC. FDIC losses and expenses in protecting this amount of roughly $500 million of deposits were about $32 million—6 per cent of deposits in banks which failed or were seriously endangered, and an insignificant fraction of 1 per cent for all deposits in insured banks.[16] The main importance of FDIC to date, therefore, is not the amount it has paid to depositors but the assurance against loss which it has given them.

The existence of FDIC gives almost complete "moneyness" to deposits in insured banks. Only very large depositors need to worry at all about the danger of loss through bank failures, and they have so far had next to no losses.[17] The FDIC does not make bank failures technically impossible. A few banks have failed under it, and more will do so. Just as a matter of arithmetic, failures might be so heavy that the FDIC's surplus would all be tied up in its claims against banks in receivership, so that FDIC could not go on paying depositors without help from the Treasury or Federal Reserve Banks. The law does not require the Treasury or the Federal Reserve to do anything about such a crisis if it develops. But in fact, of course, they could not stand aside. It is a moral certainty that any help which the FDIC needs from the Treasury or Federal Reserve will be forthcoming. Our commercial banking system is actually failure-proof from the stand-

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[15] Of the total, $87 million was paid by FDIC. In addition, $5 million was secured by special assets and paid off from the proceeds of those assets—probably belonging to local governments, chiefly. $6 million belonged to depositors who had loans payable to the failed bank, and was offset against their debts. See FDIC, *Annual Report*, 1945, p. 145.

[16] Though yearly assessments are only $\frac{1}{12}$ of 1 per cent on deposits, they have amounted to about 18 times insurance losses and expenses over the life of FDIC, building up a surplus of well over $600 million.

[17] Losses on uninsured deposits down to the end of 1945 were less than $3 million.

point of depositors with balances below the $5000 insurance limit.[18]

C. Bank Examination and "Qualitative Controls"

Evolution of Examination Standards. American bank examination grew out of sad experiences in the early days of banking. A banker who expects no outside scrutiny of his books is under temptations to which no individual should be subjected; and, before supervision was effective, there were many bank failures arising from fraud or gross carelessness in bank management. The root idea of bank examination is to protect the depositor (nowadays, even more to protect the FDIC) against such failures, by keeping the banker out of temptation.

Along with this idea has marched the idea of keeping banking "sound" in a broader sense. Even though no immediate loss was threatened, an examiner might object to certain banking practices as out of line with accepted standards. This purpose of keeping banking sound has gradually evolved away from mere application of traditional rules of thumb and of legal standards and has developed into attempts to persuade banks to operate in ways that help bring about prosperity and stability.

Examination Machinery. As was pointed out in Chapter I, most of the work of bank examination is now done by three federal agencies—the Comptroller's office for national banks, the Federal Reserve Banks for "state member banks," the FDIC for "nonmember insured banks." These agencies hold conferences once in a while to line up their standards, and are more and more inclined to talk openly about what those standards are.[19]

At least twice a year there is a "call date" when banks have to turn in detailed statements of their assets and liabilities. These statements, of course, are analyzed to see what the reporting banks

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[18] In view of the success of large depositors in escaping from sinking banks (see above), it has been argued that the FDIC would not lose appreciably by insuring *all* deposits without a size limit. For 1934–1945, this policy would have raised FDIC losses only from $32 to $35 million.

[19] During the deflation years of 1930–1932, the framing of examination standards—and, especially, adaptation to the hard times—was a hush-hush affair. But the conference of September 1934 (called to match up procedures of examination when FDIC was getting under way) led to public statements; and a 1938 conference led to detailed public explanation of changes in standards.

are doing. Examiners visit the individual banks at irregular intervals. These visits they deliberately make somewhat unpredictable, so as to find the bank operating normally rather than putting on a display for the examiner. Ordinarily, however, an insured bank can expect to be examined at least once a year. The visit may last several days. It includes verifying that the assets shown in the balance sheet really exist and that they correspond reasonably well to the description, and, also, making sure that the bank has conformed to legal rules.[20] The examiner also "appraises" assets—that is, he classifies them by type and quality, and compares standard valuations with the bank's book value. He finally draws up a report on the bank (including notes on the quality of bank management), which is sent both to the supervisory agency and to the bank's officers and directors.

If the examiner's report shows anything out of order, the bank management is expected to take steps to correct it. If no such steps are taken, there will be "recommendations for corrective action" from the supervisory agency. A bank which has received such "recommendations" is watched from time to time; if it does not try to conform, it may be penalized by losing membership in the FDIC.

Appraisal of Assets. Until shortly before World War II, examiners looked at bank earning assets primarily from the standpoint of the "liquidity" of the individual bank. Loans which did not seem highly liquid were classified as "slow" or "doubtful." Bonds were judged chiefly by their "grade" as evaluated by the private companies engaged in credit valuation which publish rating lists, and on the whole valued "at cost or market, whichever is lower."

The 1938 agreement among the examining authorities involved a change of emphasis. The Board of Governors of the Federal Reserve System commented officially:

> The principle is clearly recognized that in making loans, whether for working capital or fixed capital purposes, the banks should be encouraged to place the emphasis upon intrinsic value rather than upon liquidity or quick maturity.

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[20] Bank examination procedure is sketched in Federal Reserve Board, *Banking Studies*, Washington, D. C., 1941, pp. 219–227.

Similarly, the revised examination procedure recognizes the principle that bank investments should be considered in the light of inherent soundness rather than on a basis of day-to-day market fluctuations.

Long-term loans are no longer discouraged; criticism of loans is limited to "substantial and unreasonable degree of risk to the bank." In security classification, the use of bond grading continues, but, for all bonds rated as high as BAA, the bank's book value is accepted.[21] Low-grade bonds not in default are valued on the basis of market price—but the average price of the last 18 months rather than the day's price. Current market prices are used only for corporation stocks and bonds in default.

The general drift of these changes is to make banks less "cycle-sensitive." As will appear in Part III of this book, economists believe that banks in the past have had a large share in accentuating the ups and downs of production and prices. Under traditional bank standards, a business downswing made assets less "bankable." If business fell off, some outstanding loans became "slow," and banks were called upon to make special efforts to collect them and avoid new loans that might prove "slow." If bond prices fell, and bad business led the rating agencies to reclassify bonds into lower grades, banks were called upon to sell bonds. So a downswing of business put banks under pressure to contract credit and thus make a bad situation worse.[22] On the other hand, an upswing of business made assets more "bankable" and encouraged banks to stimulate the upswing by expanding credit. The reform of bank examination promises to remove this pressure so far as it depends on bank supervision. How great the effect will be remains to be tested by postwar experience.

The bulk of bank assets are immune to criticism on the new standards. In 1939, only 5 per cent of assets of insured banks visited by bank examiners were criticized. By 1945, after several years of high income had improved the position of debtors and enabled banks to write down asset values, only ½ of 1 per cent

[21] If the bank has bought bonds "at a premium" over their face value, it is required to "amortize" the premium by writing off a uniform amount each year.

[22] In 1930–1931, the Federal Reserve Board and the Comptroller tried to protect banks by easing the rules of asset appraisal. The income history of Federal Reserve member banks shows very heavy losses on loans and investments in 1934–1936, when asset values were rising. Had the official rules of asset appraisal been applied, these losses would almost certainly have appeared prior to June 1933.

were criticized. The amount by which bank examiners thought proper appraisal fell short of book value was only 0.6 per cent of assets in 1939 and 0.02 per cent in 1945.[23]

Direct Regulation of Specific Types of Credit. During the great stock-market boom of the 1920's, there was much discussion of the need for "qualitative credit control" to keep bank loans from financing the boom. At that time, this control did not go beyond "moral suasion" on banks to avoid such loans. But dur-

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[23] Data from FDIC *Annual Report,* 1945, pp. 122–123. By types of assets, figures worked out as follows (dollar amounts in billions):

Asset Type and Year	Amount Held	Amount Criticized	Examiners' Deductions	Percentages	
	1	2	3	Col. 2/Col. 1	Col. 3/Col. 1
1939					
Cash and due from banks ..	$18.6	$0.0	$0.00	0.0	0.0
U. S. Gov't securities	14.6	0.0	0.00	0.0	0.0
Other securities	6.7	1.2	0.081	18%	1.2%
Loans and discounts	16.1	1.2	0.158	7%	1.0%
Fixed and misc. assets	2.24	0.53	0.063	24%	2.8%
Total	$58.3	$3.0	$0.34	5%	0.6%
1945					
Cash and due from banks ..	$29.2	$0.0	$0.00	0.0	0.0
U. S. Gov't securities	78.8	0.0	0.00	0.0	0.0
Other securities	6.2	0.26	0.0016	0.4%	0.003%
Loans and discounts	21.4	0.26	0.012	1.2%	0.05%
Fixed and misc. assets	2.38	0.097	0.0062	4%	0.3%
Total	$138.0	$0.62	$0.029	0.5%	0.02%

The amounts of "examiners' deductions" do not quite add up for 1945, since some asset items were appraised above book value.

ing the 1930's, the Federal Reserve Board was given power to regulate "margin requirements" on security loans; [24] and during the war the Board was also given power to regulate the terms of credit given to consumers on their purchases. Both these powers were used during World War II to check inflation.

In both of these forms, regulation affects, not the *amount* of loans extended, but the *terms* given the borrower. For security loans, what is fixed is the minimum percentage of the value of securities that are to be bought or carried with the aid of loans, which the borrower must put up (his "margin"). When the margin required is 100 per cent, new loans of this sort are, in effect, prohibited. For consumer sales credit, what is fixed is the minimum percentage of installment purchases which must be cleared by the "down payment," the maximum number of months over which the remainder of the price may be spread, and how soon department stores must stop credit if customers do not pay past bills. Both sets of requirements apply to other lenders as well as banks; in fact, the consumer-loan regulations apply chiefly to other lines of business and only incidentally to banks.

In a broader sense, "qualitative credit control" takes in both these direct controls and the weaker but broader influence on the banks' choice of assets that is exerted through examination standards and "moral suasion." Even in this broader sense, qualitative control is probably not very effective either in limiting the scale of loans and investments or in directing bank funds away from specific areas.[25] The same transaction could be carried out under any of many labels, and seepage of funds from one part of the credit market to another is an important factor.[26] I share a widely held suspicion that the recent stress on "qualitative control" at the Federal Reserve Board is a sign that the Reserve feels that its traditional "quantitative" controls are crippled,[27] rather than that

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[24] See above, p. 52, footnote 46.

[25] The apparent shining success of installment credit control in getting a sharp reduction of consumer loans outstanding during World War II needs careful interpretation. It should be remembered that the supply of new consumer durables (especially automobiles and electrical appliances) was cut off, so that, as consumers paid off their existing debts, they were not taking on new ones in the normal way.

[26] For example, a loan to finance stock-market speculation may be "secured" by real estate. On the slack in loan classification, see above, page 51.

[27] See below, p. 116.

the Reserve feels much confidence in the power of "qualitative" measures.

Regulations to Enhance Bank Earnings. Whether banking was profitable used to be no one's concern but the banker's. But deposit insurance gives the government a stake in the banking business. If banks earn substantial profits and add them to their capital funds, the danger of losses to FDIC is reduced.

The most important restriction on banks that is aimed to strengthen their income is the regulation of interest paid to depositors. The Banking Act of 1933 forbade payment of interest on demand deposits by insured commercial banks (with minor exceptions for the benefit of savings banks and local governments owning demand deposits). The Federal Reserve Board and FDIC by regulation have set maximum rates of interest for time deposits —first 3 per cent per annum; since early 1936, 2½ per cent. Most time deposits have received much less than this maximum rate, however; the effect of the limitation has been to discourage a minority of banks from paying more and perhaps raising the general level by competition for funds.

Under deposit insurance there has also been an effort to limit competition by keeping down the number of new banks chartered. The announced view of FDIC is that "adequately capitalized banks with good management should be chartered whenever those banks will meet a need in the communities in which they are established." [28] A good many new banks were set up in the war years—over 100 in 1945. But the old "free banking" principle that anybody who has a minimum amount of capital can go ahead and start a bank is no longer honored. Scrutiny of banking needs, record of the managers, and so forth, limit new competition in banking.

The supervising agencies have not themselves acted to check the granting of costly services to depositors and other "nonprice competition" among banks. But such competition is chiefly a local matter. Within the major cities, clearinghouses act to keep down bank costs (and thus keep up profits) by limiting banking hours, types of service, and so forth.

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[28] FDIC, *Annual Report*, 1945, p. 11.

D. Control of Bank Reserves: Central Banking

Control through Reserves. As I said at the beginning of the chapter, the core of bank control is Federal Reserve management of bank reserves to influence banks' earning assets. The whole process of "deposit creation" depends on the reserve situation.[29] If commercial banks have more reserves than they need, they are *free* to expand credit and create deposits. If they have less reserves than they need, they are *forced* to contract credit and retire deposits—or else borrow additional reserves, on terms which the Federal Reserve can set.

Managing bank reserves to control bank credit is the key job of "central banks" today. But central banking has not always been seen in that light, and even today there are other points of view. The first job of this section, therefore, is to sketch the origin of central banking and the evolution of opinion about it.

There are three main influences on the reserve position of commercial banks:

1. Changes in minimum required reserve ratios.
2. "Open-market operations" by the central bank—their effect tempered by "rediscount."
3. Unplanned changes in reserve position due to shifts in the composition of the public's cash holdings, international gold flows, and so forth.

These influences will be discussed in succession. Treasury operations, which might be viewed as either (2) or (3), are examined at the end of the discussion.

Origins of Central Banking. All important countries have "central banks"—which stand in much the same relation to commercial banks that commercial banks do to the public. We have the Federal Reserve Banks; Britain, the Bank of England; other countries the Bank of France, Bank of Canada, and so forth. As I shall show presently, not all the work of "central banking" is done by these institutions, but they always have a big part in it.

The oldest central banks grew up *before* modern commercial

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[29] On the relation of bank reserves to deposit creation, see pp. 72–74.

banking. The Bank of England, Bank of France, and First and Second Banks of the United States are the main examples. Set up as semi-official institutions with close government ties, these were thought of in the early 1800's as monster concerns in general banking.[80] No commercial banks of comparable size existed, and these institutions were in themselves a large part of the banking business. In the United States, the expiry of the charter of the Second Bank in 1836 ended this situation. But in Britain and France, a system of giant commercial banking corporations grew up around the central institutions, and the latter came more and more to concentrate on central bank work. The precise dates when the Bank of England and Bank of France became primarily central banks would be hard to determine. Some remnants of their traditional general banking business still remain with them.

In the other major countries, central banks were created as such in the midst of full-blown or rapidly developing commercial banking systems. The German Reichsbank, the Bank of Italy, the Federal Reserve Banks, and the central banks of the British dominions and Latin American countries were of this sort. Only the oldest of these (the Reichsbank and Bank of Italy) did any general banking business. The others were set up to concentrate on business with commercial banks and the government.

In every country, the central bank is the focus of banking. Central banks have long been the main holders of gold—the chief form of cash which has an international market, and the traditional basis of monetary reserves. The reserves of commercial banks are chiefly debts of central banks—either deposit liabilities or central bank notes. Commercial banks look to central banks for help in time of trouble, especially for emergency loans. Commonly, central banks have supervisory power over commercial banks. Often central banks can change commercial bank reserve requirements. These characteristics are widely taken to be essential to central banking. Whether they are really essential, or merely customary and useful, I discuss below.

Evolution of the Federal Reserve System. The monetary sys-

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[80] It is a rather picturesque historical fact that George Washington was a stockholder and depositor in the Bank of England, which took care of his funds while he was fighting British armies.

tem of the United States before 1913 centered on the national banks and the Independent Treasury System. As was noted above,[31] this system worked well in fair weather but kept producing crises. Discontent came to a head after the financial crisis of 1907, and the Federal Reserve Act of 1913 was adopted as remedy.

The chief complaint under the old system had been the lack of "elasticity" in the nation's paper currency and in bank reserves. If people became frightened and started turning bank deposits (even a small percentage of their deposits) into coin and paper money, the country banks called on the city banks for coin and paper money, and almost instantly the banking system as a whole was short of reserves.[32] This demand led to "tight money," and, if it went very far, to a suspension of cash payments at the banks. Even the seasonal growth of coin and paper outside banks in the autumn "crop-moving season" played hob with bank reserves.

The Federal Reserve System was set up to give the desired "elasticity." Commercial banks which became "members" had only one form of reserves to worry about—"reserve balances" at the Federal Reserve.[33] To obtain these reserve balances at the outset, member banks deposited their gold, greenbacks, and so forth, giving the Federal Reserve Banks cash reserves equal to the amount deposited.[34] If a bank ran short of reserves, it could obtain cash by "rediscount." That is, it could sell to its Federal Reserve Bank either its own promissory note or any notes of customers which passed certain tests as "eligible paper." The Federal Reserve Banks were allowed to issue paper money in the form of Federal Reserve Notes secured up to 60 per cent by discounted

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31 See pp. 26–28, 78–79.

32 The tightening effect was made sharper by the "pyramiding" of reserves—the reserves of country banks consisting largely of deposits with city banks. If a country bank had a million dollars of greenbacks and deposited it with a city correspondent, the country bank could still claim a million dollars of reserves. But the city bank now had an extra million of reserves with only 25 per cent (its reserve ratio) of the million added to its reserve requirement; so that excess reserves of the system grew by three-quarters of a million. In the reverse direction, if the country bank decided to hold its own million dollars again in coin and paper money for fear of a run, it produced a three-quarter million reserve shortage.

33 During a transitional period, until June 1917, banks were allowed to hold part of their legal reserves in their own vaults.

34 Thus, the first year-end balance sheet of the Reserve Banks (1914) shows $268 million of cash reserves ($227 million of it in gold) against $265 million of member-bank reserve deposits.

paper, and not less than 40 per cent by gold or gold certificates.[35] A shortage of cash at member banks, by causing rediscounts, would provide the Federal Reserve Banks with assets against which more notes could be issued. Either an incipient crisis or a seasonal drain of currency into circulation could be taken care of by this elasticity of note issue, without reducing member-bank reserves, *so long as the Federal Reserve Banks had enough slack in their gold reserve to set up the required 40 per cent reserve for the additional notes.* The resulting system was not quite crisis-proof—witness the bank holiday of 1933—but it came triumphantly through financial upsets in 1920 and 1929 which under the old system would have produced financial panics and general suspension of payments at the banks.

On account of nation-wide fears of "Wall Street domination," the founders of the Federal Reserve System did not set up a single bank in New York or Washington with branches over the country, but rather a chain of twelve regional banks,[36] each with its own officers and directors. The stock of each Federal Reserve Bank is owned by its own member banks; and the member banks elect six of the nine directors. The other three directors are named by the Presidentially appointed Board of Governors of the Federal Reserve System,[37] which supervises the system from Washington.

In legal form, the Federal Reserve System is still much what it was at the outset—a sort of bankers' co-operative society, with supervision from Washington. But in substance it is much more

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[35] This requirement of collateral for Federal Reserve Notes in the form of gold or discounted paper made trouble in 1932; see Chapter XII. At that time, the law was changed to make government securities eligible as collateral. In effect, this amendment abolished the collateral requirement. For, since the assets of Federal Reserve Banks consist almost entirely of gold certificates, government securities, and discounted paper, the rule requires only that assets equal or exceed note liabilities—which they cannot fail to do, just as a matter of arithmetic.

[36] The Federal Reserve Banks are located in (1) Boston, (2) New York, (3) Philadelphia, (4) Cleveland, (5) Richmond, (6) Atlanta, (7) Chicago, (8) St. Louis, (9) Minneapolis, (10) Kansas City, (11) Dallas, and (12) San Francisco. A map showing district boundaries and the location of branches is published in the monthly *Federal Reserve Bulletin.*

[37] The original governing body was called the "Federal Reserve Board," and for convenience this shorter name is still much used. The original "Federal Reserve Board" was abolished and the new "Board of Governors" set up by the Banking Act of 1935. Members of the new Board have 14-year appointments, one expiring every two years, so that their tenure and continuity of policy are very secure—unless Congress some day follows the 1935 precedent and abolishes them in favor of a successor body.

centralized, and works like a single central bank with branches and sub-branches. Officers of the twelve Banks are elected for moderate terms—subject to veto from the Board of Governors. The most important operating decisions are made by the Federal Open Market Committee. This was originally an informal group of the executive heads of Reserve Banks; but the members of the Board of Governors are now members *ex officio* and are a majority of the committee. Originally the individual Banks could take the recommendations of this committee or leave them alone; now they are required to take them. There is still a good deal of autonomy in the Banks, and men of stature serve as their officers; but the authority of the Board of Governors is paramount.

With this change in the locus of power has gone a change in policy emphasis. The central idea at the outset, as I said above, was "elasticity of note circulation," with "rediscount" as the way to bring it about. The rate of interest charged on member-bank borrowings, or "rediscount rate," was expected to be the main instrument of policy—as the corresponding "bank rate" was the traditional instrument of Bank of England policy. But it has turned out that reserve requirements and "open-market policy" matter much more than rediscount. In fact, as I argue below, rediscount turns out to be important chiefly as a loophole in open-market policy.

Minimum Reserve Requirements and Banks' Demand for Owned Reserves. Legal minimum ratios for reserves against deposits in commercial banks have long been part of the United States tradition.[38] Until recently, these requirements changed only at long intervals. But the Banking Act of 1935 gave the Board of Governors power to vary requirements between the then-existing level [39] and double that level. Several changes in require-

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[38] Abroad, such requirements for commercial banks are rare. This American peculiarity probably reflects partly the need to deal with thousands of "unit banks" rather than a few large branch-bank systems; partly the tradition in American government of definite detailed rules rather than informal and possibly irresponsible "administration."

[39] This was:

For time deposits, 3%; giving a range of 3–6%; 1947 level, 6%. For "net demand deposits":

At central reserve city banks	13%; giving a range of 13–26%;	1947 level, 20%.
At reserve city banks	10%; giving a range of 10–20%;	1947 level, 20%.
At "country banks"	7%; giving a range of 7–14%;	1947 level, 14%.

ments—both increases and decreases—have been made under this authority.

Reserve requirements apply neither every day nor exclusively at "call dates," but for *averages* of from three days to two weeks. A bank may have less than required on some days, if it has correspondingly more than required on other days. Even on this average basis, pulling reserves below the required minimum level is not exactly *prohibited;* but it is *subject to penalty.* A bank with deficient reserves is forbidden to make new loans or pay dividends; obedience to this rule is watched by bank examiners. Fines are levied for deficiencies. Most important of all, a bank which persistently fails to keep reserves up to the required level may be closed by the Comptroller of the Currency or state authority. Banks do occasionally run below required levels—enough so that the fines collected average several hundred thousand dollars a year —but, practically, it may be assumed requirements are obeyed.

It should not be assumed, however, that commercial banks automatically accept the required minimum as showing just how much reserves they ought to own. They have some freedom in both directions. They may choose to hold excess reserves, over and above requirements. On the other hand, if they think it prudent to build up earning assets at the expense of reserves, they can *borrow* reserves—they can rediscount.[40] During the 1920's, *owned reserves* (that is, reserve balances less rediscounts) ran several hundred million dollars below reserve requirements. Broadly speaking, banks felt free to expand credit when their owned reserves stood as high as three-fourths of the requirements, and did not feel under strong pressure to contract credit unless their owned reserves fell as low as half their requirements. In the 1930's, on the other hand, banks carried heavy excess reserves; and in 1937 they felt under pressure to contract credit when their owned reserves were 10 per cent higher than requirements.

A change of reserve requirements may be largely nullified by effects on banks' own private standards for reserves. An unexpected increase in required minimum ratios, of course, is bound to create a shortage of reserves. But a *foreseen* increase may simply absorb excess reserves that banks have been holding in order to

[40] Or borrow at other banks.

meet it. On the other hand, a decrease in requirements which is viewed as temporary may not affect banks' ideas on owned reserves at all. They may simply decide to hold the reserves which the change releases, in order to meet a later reversal of the change.

Reserve policy, therefore, has to work by influencing banks' private reserve standards as well as the legal requirements. During the 1920's, the Federal Reserve authorities carried on a campaign to discourage rediscount except for banks in temporary difficulties. This campaign was only partly successful. In the 1930's, banks undoubtedly came to have a strong preference for excess reserves —witness the 1937 episode when credit contraction set in with reserves 10 per cent above requirements. But much of the excess reserves that were held doubtless reflected mere inability to find "bankable" earning assets; thus, the strength of this demand for excess reserves was not tested. It is too soon to guess what attitude banks will take in the postwar period.

Open-Market Operations. The key power of the modern central bank is "open-market operations." These are the buying and selling of securities dealt in on the Stock Exchange. Actual Federal Reserve dealings are in United States Government securities—Treasury bonds, notes, certificates, and bills. In these dealings, the Federal Reserve (through the Open Market Committee) takes the initiative and decides how much it chooses to buy or sell. This is a major difference between open-market operations and rediscount dealings, and so forth, where somebody else decides whether or not to sell assets to the Federal Reserve on terms which the Reserve announces in advance. The size of Federal Reserve holdings is set by these outside decisions—which the Federal Reserve authorities can influence but not dictate.[41]

Open-market purchases by the Federal Reserve "create deposits" just as do bond purchases by commercial banks. The only difference is that the deposits created are reserve balances held by banks, rather than commercial-bank deposits held by the nonbank public. When the Federal Reserve buys a million dollars' worth of bonds held by a commercial bank, obviously the commercial bank is swapping a nonreserve asset for a million-dollar check

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[41] During World War II, Treasury bills (and, in effect, also Treasury certificates) went over onto the list of items on which the Federal Reserve quoted terms and dealt with all comers. See Chapter XII.

which can be deposited in its reserve account at its Federal Reserve Bank. This check is just as much an addition to the selling bank's reserve balance as if the buyer had been another commercial bank. But the check drawn for a Federal Reserve purchase is not subtracted from the reserve account of any other bank. Thus, there is a net growth in the reserve balances of all commercial banks combined,[42] and excess reserves rise by a million dollars.

When the Federal Reserve buys a million dollars' worth of securities from nonbank holders—for instance, from business corporations—there is deposit creation *both* at the Federal Reserve level and at the commercial-bank level. The Federal Reserve's million-dollar check drawn in payment is deposited in the corporation's bank account. The commercial bank holding that account finds its deposit liabilities *and* its reserves increased by a million dollars, while the bank's earning assets are undisturbed and required reserves rise by (say) $200,000. At other commercial banks there is no change in either assets or liabilities. What has happened is a rise of both assets and liabilities at the Federal Reserve, a rise of both assets and liabilities at the commercial bank, and an exchange of bonds for cash at the corporation. But if bank reserves were just adequate before, there are now $800,000 of excess reserves—almost as much as if the bank rather than the corporation had sold the bond.

Like commercial banks, the Federal Reserve can also work the deposit-creation machine in reverse. Selling bonds retires reserve balances. However, it also reduces the deposits of the nonbank public only if the commercial banks' customers buy the bonds sold.

Clearly, the Federal Reserve by its open-market policy can change the incentives which work on deposit creation at the commercial-bank level. By buying securities, the Federal Reserve can strengthen member-bank reserves and encourage commercial banks to expand their earning assets and create deposits. By selling securities, the Federal Reserve can tighten member-bank reserves and put commercial banks under pressure to contract their earning assets and retire deposits.

Rediscount. "Rediscount" is a process by which member banks obtain additional reserve funds from their Federal Reserve

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[42] Cf. the process of deposit creation at commercial banks, described on pp. 65–73.

Banks. It may take the form of selling to the Reserve Bank a customer's promissory note held by the member bank.[43] More commonly, it takes the form of selling to the Reserve Bank the member bank's *own* promissory note. From the member bank's standpoint, therefore, the operation is properly described by the term used in casual discussions—simply "borrowing."

The "Federal Reserve discount rate" is the percentage (per annum) which the Reserve Bank subtracts from the maturity value of the note it buys. If the discount rate is quoted at 2 per cent, this means that a 30-day note for $1,000,000 sells for $1,000,000 minus 1/6 of 1 per cent—that is, $998,333.33. The rate charged sometimes differs from one Federal Reserve Bank to another, and is sometimes differentiated by the type of "paper" discounted. Changes in rate were frequent before 1934, but have been rare since.[44]

As I mentioned above, rediscount was originally viewed as the key function of the Federal Reserve. As it turns out, however, rediscount is chiefly a cushion between commercial-bank reserves and the forces which tend to change them. Among these forces are Federal Reserve open-market policies.

If member banks did not borrow, a million dollars of open-market bond sales by the Federal Reserve would lower commercial-bank reserves by a million dollars. But in practice, if commercial-bank reserves are pinched, member banks increase their borrow-

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[43] This is the form of transaction which led to the technical term. A customer's promissory note has been *discounted* by the member bank: that is, the bank has bought the note from the customer at a discount from its maturity value (including interest in the latter). When the note is handed on to the Reserve Bank, it is *re*discounted—that is, there is a second transaction below maturity value.

For a number of reasons, rediscount in this narrow sense has not been very common. It involves a credit rating of the customer by the Federal Reserve Bank (which may mean bother and embarrassment for the customer, the member bank, or both). The timing of the transaction may not work out exactly as the member bank wants. Altogether, direct borrowing on the member bank's note is more convenient for everybody.

[44] At the Federal Reserve Bank of New York, there were 7 rate changes in 1914–1918, 9 in 1919–1922, 9 in 1923–1927, 6 in 1928–1929, and 15 in 1930–1934—with a range from 7 per cent down to 1½ per cent. (See Federal Reserve, *Banking and Monetary Statistics*, Washington, 1943, pp. 439 ff.) But the 1½ per cent rate set in February 1934 lasted until August 1937, when the discount charge dropped to 1 per cent. This rate remained unchanged to this writing, except for the establishment of a "preferential rate" of ½ of 1 per cent on advances secured by short-term government securities during and after World War II (October 1942–April 1946).

ings. Open-market sales or purchases change *owned reserves* of commercial banks by the amount sold or bought. But to the extent that member banks are willing to use *borrowed reserves* to satisfy requirements, the edge of open-market policy is blunted.

As I pointed out above, commercial banks will contract credit if their owned reserves shrink too far and their dependence on borrowed reserves increases. In the other direction, commercial banks cease to feel their reserve position as a barrier to credit expansion when their owned reserves grow sufficiently. But there is no simple mechanical relation between the size of owned reserves and commercial-bank credit policy.

In case reduction of owned reserves by open-market sales does not lead the banks to contract credit, the Federal Reserve has another weapon—the rediscount rate. A commercial bank which operates with borrowed reserves is subject to a financial penalty, consisting of the interest on its borrowings. By raising the rediscount rate, the Federal Reserve can make the penalty more painful. If the rate goes as high as the rate that the commercial banks can get on their loans and investments, it becomes financially profitable for each debtor bank to contract credit in order to pay off rediscounts.[45] In the other direction, a low rediscount rate can make the penalty less painful, so that banks which are in debt at the Federal Reserve will not struggle so hard to get out. But if there is a shortage of bankable assets, even reducing the rediscount rate to zero will not bring about credit expansion. In practice, as I mentioned above, the rediscount rate has not been treated as a flexible tool of policy since early 1934.[46]

Intermediate Types of Dealings. There is a class of Federal Reserve operations which are halfway between rediscount and open-market dealings. Typical of these is the purchase of bank-

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[45] For the banking system *as a whole,* the fact that the "deposit-creation multiplier" is around 3 or 3½ (see p. 74) would make it profitable to pay a 10 per cent per annum rediscount rate in order to lend at 4 per cent. But although the lending power which rests on $1 million of borrowed reserves may total (say) $3⅓ million, only $1 million benefits the debtor bank. By owing $1 million, this bank may be able to add $40,000 a year to its own gross earnings plus (say) $80,000 a year to the gross earnings of other banks. But the other banks will not share the interest which the debtor bank must pay on its rediscounts. So the debtor bank will disregard their share in the resulting earnings.

[46] See footnote 44. It is more than a coincidence that this date when a low and rigid discount rate was established is also the date when the "devaluation" of the dollar in terms of gold was completed. See Chapter XVI.

ers' acceptances,[47] which used to appear on lists of Federal Reserve assets as "bills bought" (as distinct from "bills discounted").[48]

Federal Reserve practice has been to post a "buying rate" of interest, subject to which the Federal Reserve Banks would buy any bankers' acceptances offered. (The 1 per cent rate quoted throughout World War II meant that a 90-day acceptance was bought at 99¾ per cent of face value.)

This arrangement has much in common with rediscounting. The rate being announced, the *amount* the Federal Reserve buys is determined by action of the commercial banks—contrary to open-market dealings, where the amount is directly decided by the Open Market Committee. Acceptances are also like rediscounts in that they stay in Federal Reserve hands, once bought, until they mature. If Federal Reserve holdings shrink, it is by "run-off": that is, the new acceptances acquired are not enough to replace the old ones being paid off.

On the other hand, the arrangements for acceptances are more like open-market operations than rediscounts in one very important way. They are *impersonal.* A commercial bank which is short of reserves may get cash from its holdings of acceptances in either of two ways: (1) it may sell part of its holdings to the Federal Reserve; or (2) it may let its present holdings "run off," leaving new acceptances to be bought by other buyers. If banks in general follow line (2), the Federal Reserve finds offers of acceptances increasing, so that its purchases rise. In either case, the commercial bank is getting new reserves just as if it rediscounted. But it is not "going in debt" at the Federal Reserve. The only question the commercial bank has to face is whether the earnings it could get by holding acceptances are good enough to make it profitable to forego holding other loans or securities.[49]

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[47] See p. 53 for the way in which acceptances come into being.

[48] Since the opening of World War II, commercial banks have held most or all of the acceptances, and the item is often missing from Federal Reserve statements. The more descriptive label "acceptances purchased" has recently replaced "bills bought."

[49] In Great Britain, this sort of operation, rather than direct borrowing by commercial banks, has been the "discount" side of the Bank of England. It has been possible because British foreign and domestic trade have both been financed largely through acceptances, so that commercial-bank holdings of acceptances have been a large fraction of bank assets.

During World War II, Treasury bills were put on the same basis as bankers' acceptances. The Federal Reserve offered to buy any Treasury bills offered at a discount rate of 3/8 of 1 per cent per annum. This meant that any commercial bank which had "secondary reserves" in the form of either acceptances or Treasury bills could get cash through their sale to the Federal Reserve, by foregoing earnings of 1 per cent per annum on the former and 3/8 of 1 per cent on the latter. The amount of Treasury bills outstanding ranged from $10 to $17 billion; but the bulk drifted into Federal Reserve portfolios, so that commercial banks did not hold much of this type of "secondary reserve." Less formally, the Federal Reserve "supported" Treasury Certificates of Indebtedness at a discount rate of 7/8 of 1 per cent per annum—standing ready to buy whenever prices fell below face-value-plus-interest by this amount. Commercial banks held from a third to a half of the $30–40 billion of certificates outstanding during the war, so that this sort of "secondary reserve" was held on a very large scale.

In the middle of 1947, the Federal Reserve put an end to the rigid buying rate of 3/8 of 1 per cent on Treasury bills. Thus, it opened the way for a limited amount of flexibility in the market rates on bills and certificates, and for a trace of uncertainty about their prices. But at this writing it does not seem likely that the Federal Reserve and the Treasury will be willing to let these interest rates and prices fluctuate enough to reduce the "moneyness" of Treasury bills and certificates held by commercial banks as secondary reserves.

To the extent that banks hold assets for which there are Federal Reserve buying commitments of this sort, bank reserves are "open-ended." Any bank with secondary reserves in the form of such assets has an option to hold cash reserves at any time that it is willing to stop drawing interest on its secondary reserves. Bank reserve requirements can restrict commercial-bank credit expansion under such arrangements only if the interest rate on secondary-

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In the interwar years the Federal Reserve and a group of "accepting banks" made an effort to popularize acceptances in the United States, so as to create a comparable situation here. During the 1920's this movement had some success. But in the 1930's, the use of acceptances faded—even during the business upswing. Acceptances held outside the Federal Reserve Banks totaled about $0.9 billion late in 1929, $0.6 billion at the end of 1933, $0.2 billion at the time war broke out in 1939, and $0.2 billion at the end of 1946.

reserve assets is substantial enough to compete with interest on other available loans and investments.[50]

Sources and Uses of Reserve Funds; Planned and Unplanned Factors. The simplest way to tie together the various influences on bank reserves so far studied is through classifying the "sources and uses of reserve funds." This process also enables us to identify unplanned factors affecting reserves, in addition to the factors which in varying degree are "planned" by the Reserve authorities.

As we saw above, member banks got their reserve funds in the first place by depositing coin and paper money (largely gold) in Federal Reserve Banks when they joined the system. When more coin and paper money was brought into existence by Treasury purchases of gold and silver or by Treasury issues of small change, it also became available for deposit at the Reserve Banks. Reserve funds have also been obtained by borrowing at the Reserve Banks, or as a consequence of Federal Reserve open-market purchases of securities. Accordingly, this pattern of analysis regards as "sources" of reserve funds: (*a*) the nation's stock of monetary gold; (*b*) Treasury issues of so-called "Treasury currency" (chiefly "greenbacks," silver certificates and silver dollars, and small change); (*c*) "Federal Reserve Bank credit" (that is, the sum of Federal Reserve holdings of rediscounts, acceptances, bonds, and so forth).

Not all the funds generated by these "sources" are actually in bank reserves, however. Most of the coin and paper money outside the Treasury and Federal Reserve Banks is held in the pocketbooks and tills of the nonbank public. Part of it is held behind bank counters and in bank vaults for making change, and so forth. Thus, the whole figure for "money in circulation outside Treasury and Federal Reserve Banks" constitutes a "use" of potential reserve funds. Besides, the Treasury itself holds part of the coin and paper money which might be in circulation, and also owns part of the deposit balances in the Federal Reserve Banks. These are the major nonreserve "uses" of potential reserve funds; although there is also an item for "miscellaneous

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[50] This does not imply *equality* of interest rates. Assets of this sort are very safe and require little management; so that a spread of several percentage points per annum in yields may still leave them more attractive than risky and troublesome loans or railway bonds.

Federal Reserve accounts," including deposits owned by foreign banks and by nonmember domestic banks, and the net balance of check clearing accounts, and so forth.

The way these factors key into each other is shown by figures for June 30, 1947 (in millions of dollars): [51]

Reserve Bank credit outstanding:	
Discounts and advances	70
U. S. Government securities	21,872
All other	228
Total	22,170
Gold stock	21,266
Treasury currency outstanding	4,552
Total sources	47,988
Money in circulation	28,297
Treasury cash holdings	1,314
Treasury deposits with Federal Reserve Banks	756
Nonmember deposits and other Federal Reserve accounts	1,510
Total nonreserve uses	31,877
Member bank reserve balances	16,112

Reserve Bank credit is, of course, a direct object of Federal Reserve planning. On the "sources" side of the account, Treasury currency outstanding and, on the "uses" side, Treasury cash holdings and Treasury deposits with the Reserve Banks are controllable by the government, if not by the Federal Reserve. But the gold stock on the "sources" side and money in circulation on the "uses" side can change of their own accord, and sometimes turn out very awkwardly, from the Federal Reserve's standpoint.

Changes in the gold stock reflect chiefly foreign trade, and monetary arrangements abroad. For example, suppose that Europe is importing heavily from us and has some gold to spare (as has happened several times since 1939). In this case, we get gold in payment for emergency exports. Some European central bank is selling gold to our Treasury, putting the proceeds on deposit

[51] *Federal Reserve Bulletin*, August 1947, p. 987. The table of "Member Bank Reserves, Reserve Bank Credit, and Related Items" which opens the *Bulletin*'s monthly roundup of "Financial, Industrial and Commercial Statistics," is a sources-and-uses table. The left-hand half of the table (through "Treasury currency outstanding") measures sources, the right-hand half (beginning with "money in circulation") measures uses.

at the Federal Reserve, and drawing checks to pay for our exports. American exporters are getting these payments and depositing them in their banks. The effect of a million-dollar gold sale used in this way is (1) a million-dollar rise of total deposits at Reserve Banks; (2) a million-dollar rise in the deposits of customers at American commercial banks; (3) a million-dollar rise in the reserve balances of these banks (the funds which the foreign central bank got for its gold being passed on by checks drawn on its account); (4) a $200,000 rise in required reserves for the American commercial banks (supposing that they have a required reserve ratio of 20 per cent); (5) an $800,000 rise in *excess* reserves for these commercial banks.

Changes in "money in circulation" reflect decisions of domestic business firms and households. It is up to every owner of cash whether he holds most of his cash on deposit in banks or in coin and paper money. If people decide to take more of their cash in coin and paper, banks have to draw down their reserve balances to get money to pay out over the counter. A million-dollar net withdrawal for hand-to-hand circulation thus leads to (1) a million-dollar drop of the public's deposit balances at commercial banks; (2) a million-dollar drop in the commercial banks' reserve balances with the Reserve Banks; (3) a $200,000 drop in required reserves (making the same assumption above as to required reserve ratios for the banks affected); and (4) an $800,000 drop in *excess* reserves for these banks.

Incidentally, the public's decisions on the use of hand-to-hand money may put pressure on the Treasury to change "Treasury currency outstanding." Increased need for small change may compel the Treasury to mint more pennies, nickels, dimes, and quarters and put them in circulation. If there is a printing bottleneck or other barrier to taking care of paper-money needs with Federal Reserve Notes, the Treasury may be compelled to put out more Treasury paper. Thus, during World War II, several hundred million dollars' worth of unused paper money (labeled "Federal Reserve Bank Notes" and printed in 1933 [52]) was put into

[52] The history of this item is picturesque. At the time of the "bank holiday" of 1933, it was expected that people would rush to the banks for paper money the moment that the bank doors opened. These Federal Reserve Bank Notes were printed to meet this demand; they were selected in preference to Federal Reserve Notes to avoid technicalities about gold reserves.

circulation as Treasury currency to economize printing and paper. Such a transaction starts by increasing Treasury balances at the Federal Reserve Banks (where the Treasury deposits its new currency), but, if the Treasury draws these balances down to normal size again, the effect is a rise in reserve funds.

Bank-Reserve Creation at Work in War Finance. Bank reserves are "created" by central-bank operations in just the same sense that the public's deposit balances are "created" by commercial-bank operations.[53] Transactions in gold and in coin and paper money across the counters of the Treasury and Federal Reserve play the same part in reserve-creation as do transactions in coin and paper money across commercial-bank counters in ordinary deposit-creation. The checks which go into one account without being subtracted out of another account (checks drawn by bankers in ordinary deposit-creation) are represented in reserve-creation by transactions which increase Reserve Bank credit.

The working of the process, as with ordinary deposit-creation, is seen in high relief in wartime figures. (See Table 11. Sources of potential reserve funds are shown at the top of the table, uses at the bottom.)

From June 1939 (shortly before the outbreak of war in Europe) to June 1945 (shortly before V-J Day), sources of reserve funds grew by $25 billion. Of this, $20 billion went to nonreserve uses (chiefly the expansion of money in circulation), leaving just under $5 billion to expand member-bank reserve balances.

The two sub-periods illustrate the variety of combinations in which reserve-creating forces can operate. From June 1939 down to the end of 1941 (that is, just after Pearl Harbor), the only important source of potential reserve funds was gold inflow from abroad. Over half the growth was absorbed in the growth of money in circulation; about a third appeared in the growth of member-bank reserve balances. In the second half of the period, the gold stock factor was acting in reverse. But Federal Reserve

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The expected drain of paper money never happened: when the banks reopened, people deposited more money over the counter than they drew out. Thus, these notes were still brand-new late in 1942 when it was decided to put them in use. When they were issued, the Federal Reserve set up a chain of bookkeeping transactions at the end of which the notes showed up as part of the Treasury's "non-interest-bearing debt" instead of as a Federal Reserve liability.

[53] See above, pp. 63–73.

TABLE 11: BANK RESERVE CREATION DURING WORLD WAR II
(In billions of current dollars, rounded to $0.1 billion)

	Amounts on the Books			Changes		
	6/30/39	12/31/41	6/30/45	6/30/39 to 12/31/41	12/31/41 to 6/30/45	6/30/39 to 6/30/45
SOURCES OF POTENTIAL RESERVE FUNDS:						
1. Reserve Bank Credit:						
a. Discounts and advances	0.005	0.003	0.05	–0.002	0.04	0.04
b. Acceptances	0.001	0.000	0.000	–0.001	0.00	–0.001
c. Treasury bills and certificates	0.5	0.01	19.0	–0.5	19.0	18.5
d. Other U. S. Gov't securities	2.1	2.3	2.8	0.2	0.6[a]	0.7
e. Other Reserve Bank credit	0.02	0.1	0.5	0.1	0.4	0.5
f. Total	2.6	2.4	22.3	–0.2	19.9[a]	19.7
2. Gold stock	16.1	22.7	20.2	6.6	–2.5	4.1
3. Treasury currency outstanding	2.9	3.2	4.1	0.4[a]	0.9	1.3[a]
4. Total sources	21.6	28.3	46.7[a]	6.8[a]	18.3[a]	25.1
USES OF POTENTIAL RESERVE FUNDS:						
5. Money in circulation	7.0	11.2	26.7	4.1[a]	15.6[a]	19.7
6. Treasury cash holdings	2.6	2.2	2.3	–0.3[a]	0.1	–0.3[a]
7. Treasury deposits with F. R. Banks	0.9	0.9	0.6	–0.1[a]	–0.3	–0.4[a]
8. Nonmember deposits	0.7	1.4	1.7	0.6[a]	0.3	0.9[a]
9. Other F. R. accounts	0.3	0.3	0.5	0.03	0.2	0.2
10. Total nonreserve uses	11.6[a]	15.9[a]	31.7[a]	4.3	15.8[a]	20.2[a]
11. Member-bank reserve balances:						
a. Excess	4.1	3.1	1.6	–1.1[a]	–1.5	–2.6[a]
b. Required	5.9	9.4	13.3	3.5	4.0[a]	7.5[a]
c. Total reserves	10.0	12.5	14.9	2.4[a]	2.5[a]	4.9
12. Total uses	21.6	28.3[a]	46.7[a]	6.8[a]	18.3[a]	25.1

Source: Table of "Member Bank Reserves, Reserve Bank Credit, and Related Items," *Federal Reserve Bulletin.*
[a] Apparent discrepancy with related figures results from rounding to nearest $0.1 billion.

purchases of short-term government securities built up potential reserve funds. The growth in member-bank reserve balances in the 3½ years was only as much as in the previous 2½ years. But it took nearly three times as large a growth in the "sources" account to permit [54] this reserve expansion. The reason was the sharp rise in the volume of coin and paper money outside the Treasury and Federal Reserve Banks.[55] This rise in currency circulation in turn reflected the rise in the volume of business and in prices, the increased proportion of income going to farmers (who do business largely with paper money rather than by check), and the use of paper money rather than checks to cover the tracks of black-market dealings.[56]

Reserve Requirements at the Central Bank Level: The Reserve Pyramid. Central banks as well as commercial banks have legal minimum reserve ratios. Through most of Federal Reserve history, the reserve ratio was 40 per cent for Federal Reserve Notes and 35 per cent for deposits. An act of June 1945, however, reduced the requirements to 25 per cent for both notes and deposits. The reserve is maintained in "gold certificates," which are a peculiar kind of semi-fictitious money used only by the Federal Reserve Banks and the Treasury.[57] The country's monetary gold

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[54] During the period of war financing, Federal Reserve policy was to keep commercial banks supplied with adequate reserves to finance war production and to buy such war bonds as failed to find nonbank buyers. As a result, whenever member banks were short of reserve funds, the Federal Reserve must stand ready to buy government securities. Thus, the amount of reserve-creation was not the accidental resultant of Federal Reserve purchases and other forces. Rather, the Federal Reserve purchases were the resultant of the reserve-creation which the banks demanded and of other forces.

[55] In Tables 9–10, I presented figures on "coin and paper money outside banks"—that is, the holdings of the nonbank public, because we were dealing with effects of commercial banking on the nonbank public's cash. Here we are dealing with the effects of central banking on cash at the bank-reserve level, and must include in coin and paper money the holdings of commercial banks. The growth in bank holdings was not a large factor, however: $0.5 billion in the first 2½ years and $0.1 billion in the last 3½ years of the period covered.

[56] Witness the cessation of growth in this series in 1946 and 1947, despite the continued rise in prices and in the dollar volume of business.

[57] In 1933, a law was passed which forbade anybody but the United States Government to hold gold—a prohibition which extended to the Federal Reserve Banks. Nobody but the Federal Reserve Banks was allowed to hold "gold certificates"—that is, paper money specifically marked as corresponding to gold on deposit and redeemable in gold. The Treasury was supposed to issue gold certificates to the Federal Reserve Banks.

The physical situation did not match the legal situation. In law, the Treasury had all the gold and the Reserve Banks none; in fact, since the Treasury lacked

stock is legally owned by the Treasury; but most of it is held in trust for the Federal Reserve Banks, and their claim on gold constitutes the reserve against Federal Reserve liabilities.

The Federal Reserve Banks through most of their history have had a comfortable margin of reserves over requirements, and except in 1931–1932 their policy has probably not been much influenced from month to month by fears of falling below requirements. Their reserve margin nearly disappeared in 1919–1920, and a "tight money" policy developed; but the inventory boom would probably have led to the same credit policy if reserves had been much higher. From mid-1921 until 1934, the margin of reserves over requirements ranged between $1 and $2 billion, except for brief periods below $1 billion in 1932 and 1933. During the later 1930's, the margin of reserves over requirements grew by leaps and bounds; reserves were more than double requirements from mid-1935 until June of 1943, when the wartime growth in note circulation and the wartime loss of gold brought requirements again to half the reserves held. At the time requirements were lowered by the Act of June 1945, reserves were only one-tenth above requirements—a margin over requirements of just under $2 billion.

The nearest thing to a crisis over the reserves of Federal Reserve Banks was the gold collateral crisis of 1931–1932. The law at that time required "collateral" to be posted for Federal Reserve Notes, consisting of discounted paper plus gold or gold certificates. The original idea had been that any growth of note circulation would lead to rediscounts, and thus automatically provide the non-gold part of the collateral. (In view of the requirement of 40 per cent reserve against notes, at least 40 per cent was bound to be gold in any event.) But the wave of currency hoarding which resulted from bank failures in the early 1930's upset this calculation.

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vault space, the Federal Reserve Banks acted as Treasury agents to hold the gold in safekeeping. In law, the Federal Reserve Banks owned gold certificates. In fact, no gold certificates had been printed—they existed only as bookkeeping entries.

After storage vaults were built at Fort Knox, Kentucky, the Federal Reserve Banks ceased to be custodians of the bulk of the gold. Part of the gold certificates were printed and handed over. But as late as the end of 1946, out of $18.4 billion of gold certificates shown on the books as Federal Reserve property, only $2.8 billion was actually in Federal Reserve Banks, while $15.6 billion was "held in the Treasury for Federal Reserve Banks." See *Federal Reserve Bulletin*, Feb. 1947, p. 169.

Federal Reserve Notes requiring collateral rose from $1.7 billion in July 1930 to $2.2 billion in July 1931, and then shot up to $2.9 billion in December. The expansion of currency circulation plus loss of gold to foreign countries led to rediscounting, as planned. But the fact that banks were heavily in debt to the Federal Reserve put them under pressure to reduce their outstanding loans, which helped make the business slump worse. It was recognized as desirable for the Reserve Banks to buy government securities on the open market to help get the banks out of debt. But to do this would have pushed the gold-collateral requirement up as fast as discounted paper fell. While the Reserve Banks had a margin of reserves over requirements, their "free gold" (allowing for the additional gold needed as collateral) was so low that they felt cramped and could not see their way to the desired open-market purchases. This crisis was relieved by the Glass-Steagal Act of February 1932, which allowed government securities held by the Reserve Banks to count as collateral.[58]

Present reserve requirements are not a great obstacle to expansion of money and bank deposits. This fact may be seen by checking over the situation as it stood in the middle of 1947.

Think of the monetary system as a pyramid standing on its nose. The nose (that is, the bottom) consists of gold. In June 1947, the Treasury owned $21.3 billion of gold. Most of this was matched by $20 billion of gold-certificate liabilities to the Federal Reserve, and a little was earmarked as reserve against greenbacks, but there was a margin of $1.0 billion of "gold in general fund." [59] Treasury holdings of other kinds of coin and paper money ($0.2 billion) were probably not above change-making requirements.

At the next level of the pyramid come the Federal Reserve Banks. They held $20.0 billion of gold certificates (the counterpart of the Treasury's gold). Their reserve requirements (at 25

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[58] This arrangement, at first temporary, was made permanent by later legislation and in effect nullified the collateral requirement. For the official view of the crisis at the time, see Federal Reserve Board, *Annual Report*, 1932, pp. 16–19.

[59] Under some conditions, the United States could draw on the International Monetary Fund (described in Chapter XVII) for substantial amounts of gold. These conditions are not apt to arise for years ahead; so I am not counting our claims upon the Fund as an effective gold asset. But if we actually inflated our cash supply to the maximum here suggested, we might shift the foreign-exchange situation enough to bring these claims into use.

per cent) were $6.1 billion on Federal Reserve Notes plus $4.4 billion on deposits. So their excess reserves were $9.5 billion.

At the next level come the commercial banks. They held $16.1 billion of reserve deposits, of which about $0.7 billion were excess reserves. In addition, they held about $2.3 billion of coin and paper money, which may have been somewhat above working requirements.

At the top level are the holders of deposits and money—the nonbank public. They held $26.0 billion of coin and paper money, $82.5 billion of checking balances ("adjusted" to eliminate duplication for checks in the clearing machinery), and $34.7 billion of time deposits in commercial banks—a total of $143.2 billion.

How much could the public's cash holdings have been expanded within the reserve requirements? To begin with, release of the Treasury's $1.0 billion could have increased reserves at the Federal Reserve Banks by that amount—making them $10.3 billion above the $10.7 billion then required.[60] If all the components of the public's cash expanded in proportion, this would bring also proportionate expansion of the sum of member-bank reserve deposits plus currency outside the Treasury and Reserve Banks. This sum stood in December 1946 at $44.4 billion. The excess $10.3 billion of reserves at the Federal Reserve level would support $10.3 billion divided by 25 per cent, or $41.2 billion of added Federal Reserve Notes and reserve deposits. This is 95 per cent of the $44.4 billion, suggesting that the rules would permit slightly less than a doubling of the public's cash. But, as it happens, the public's holdings of coin and paper money were abnormally high, and holdings of time deposits abnormally low, as compared with checking deposits. Therefore, expansion would probably have involved greater relative growth of the low-reserve parts of the public's cash, and it is quite possible that these reserves would have supported more than a doubling of the cash supply.

On top of this possibility of a twofold expansion under existing reserve requirements is the possibility of lowering reserve requirements. The Federal Reserve has authority to cut member-bank reserve requirements back to the 1935 level, which would

[60] The deposit of $1 billion would have increased required reserves by $0.25 billion—or from $10.5 to $10.7 billion.

roughly halve them. This would not have allowed a further doubling of the public's cash supply, since part of any expansion might go into coin and paper money outside banks, absorbing excess reserves dollar for dollar. But a total expansion to threefold the 1947 scale with 1947 gold reserves and with a 25 per cent required ratio for Federal Reserve Banks might have been possible.

Finally, the 25 per cent ratio for the Federal Reserve Banks is not immutable. The precedent set in 1945 shows that Congress would be willing to consider a further reduction if cause were shown. In short, if the Federal Reserve wants to permit a credit expansion, gold reserves and the 25 per cent ratio do not set up any substantial barrier. If credit expansion is limited, in the United States,[61] it is either because the Federal Reserve intentionally keeps the commercial banks short of reserves, or because the commercial banks cannot find assets which they think it prudent to buy.

Treasury Open-Market Operations. The account of open-market operations above is in terms of buying and selling of government securities by Federal Reserve Banks. But this is a game which the Treasury also can play; in fact, it must. It has Treasury bills coming due for payment every week, certificates every few weeks, notes every few months; and every now and then an issue of bonds reaches the date at which the Treasury can pay it off. New securities have to be sold to Peter to provide cash to pay off Paul's maturing securities.

Suppose that the Federal Reserve tries to put pressure on the commercial banks—in order to stop an unhealthy expansion of credit—by selling some Treasury notes. The commercial banks have a simple way to pass the pressure on to the Treasury. All they have to do is to take cash for the Treasury bills and certificates they hold, as they come due, and avoid buying any new bills or certificates. If they do this, the funds that the Federal Reserve absorbs must be provided by the Treasury; the commercial banks will have unimpaired reserves, and can suit themselves about credit expansion and thumb their noses at the Federal Reserve. If the Treasury aims to prevent this outcome, it has to offer its new securities on terms which are irresistibly attractive—either

[61] Things may be different in countries which suffer from inadequate exports and "shortage of dollars." See Part IV.

to banks or to members of the nonbank public. This means, broadly, that it has to offer interest rates which are high enough in relation to the yields of other assets so that banks cannot afford to reject the Treasury securities offered.[62]

Effectiveness of open-market operations is thus unavoidably a *joint* concern of the Treasury and the Reserve Banks. The two organizations together are in much the same position toward bank holdings of Treasury securities that the Federal Reserve is toward bank holdings of acceptances. There is a certain stock of these assets in existence. What banks and nonbank holders do not elect to hold, the central authorities must hold. Therefore, the authorities can decide *either* the interest rate *or* the amount of these assets to be outside their hands, but not both. If they fix the interest rate, they must absorb whatever the banks choose to shift to them. If they decide how much outsiders are to hold (which they do, if they decide how much *net* they will buy or sell on the open market), they have to make the interest rates attractive enough to find buyers.

This is why I spoke of the World War II arrangements for Treasury bills and certificates as "open-ending" the reserve requirements. By setting a rate of ⅜ of 1 per cent on bills, in 1942–1947, the authorities guaranteed any bank that held bills a chance to reduce its holdings by shifting its burdens to the Treasury or the Federal Reserve. This is why the demand for excess reserves dried up; excess reserves had almost no advantages that Treasury bills did not share, and, in addition, bills yielded a little interest. If the Federal Reserve had tried to reduce bank reserves by selling Treasury notes, it would simply have found the transaction offset by the banks' parting with bills and certificates. The combined open-market power of the Federal Reserve and the Treasury is thus paralyzed so long as an unattractively low interest rate on these assets is maintained—up to the point where all such assets drift into Federal Reserve hands.[63]

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[62] With interest rates constant, other characteristics of securities can be altered to increase their attractions. But interest rates are the main weapon.

[63] This is a statement of fact, not an argument that the policy of fixing low interest rates is indefensible. There are strong reasons for trying to have low and steady rates on such securities—notably, interest savings in the federal budget. The argument is simply that the facts compel the authorities to choose between having such an interest policy and being able to put restrictive pressure on bank reserves.

On Central Banking in General. I have just argued that Treasury security dealings must be looked at as part of central banking. Is this the end of the matter, or must we broaden our notions of central banking? Is central-banking-ness, like money-ness, a matter of degree?

Yes, it is. For one thing, think of government taxes and expenditures. If the government spends more than it takes in through taxes, it puts cash into people's pockets just as much as if it redeems more Treasury bills than it sells. Taxes and expenditures may be thought of as a species of open-market operations. They differ from open-market operations in government securities, however. When a man pays taxes, his cancelled check is just an accounting record—not (like a Treasury bill, say) a liquid asset which he can regard as a near-money. Similarly, when a man gets a government paycheck, what he has sold—two weeks of work—would not have been a liquid asset for anybody else if the government hadn't bought it. This difference makes revenue and expenditure stronger influences on people's private operations (per dollar spent or received) than open-market operations in securities.

The "exchange stabilization funds" set up in many countries in the 1930's definitely carry on central banking. Their open-market operations are purchases and sales of debts payable abroad, in foreign currency units, or of nonmonetary gold. Such operations take hold on bank reserves just like dealings in government securities. In the United States, the Stabilization Fund operated on rather a small scale in the 1930's.[64] But the British Exchange Equalization Fund operated on a large scale; and in the postwar period we may find the International Monetary Fund a powerful influence.

It is possible for commercial banks to act as central banks. Before the Federal Reserve System was set up, the big New York banks felt some sense of central-bank responsibility (shared with the Treasury) in default of any regular organization. If a commercial bank piles up excess reserves *not* because it lacks profitable chances to acquire loans and investments but because it is trying to resist undesirable credit expansion in banking as a whole, it is

[64] Out of the $2.0 billion fund set up in 1934, only $0.2 billion went into active use. The $1.8 billion was eventually used to finance our subscription to the International Monetary Fund.

acting as a central bank. This is just a possibility, however; actually, and at the present day, banks decide their reserve policy for their own business reasons, and leave central banking to the authorities.[65] For practical purposes, central banking is an activity of the official central banks (in this country, the Federal Reserve), Treasury, and official foreign-exchange funds.

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Note on Alternative Points of View and Supplementary Readings

On bank control, Federal Reserve Board publications designed for student use are very convenient; namely:

The Federal Reserve System: its Purposes and Functions. Washington: 1939.

Banking Studies. Washington: 1941; especially the sections on supervision of commercial banks (pp. 189–210) and on bank examination (pp. 213–227).

The Federal Reserve Act as Amended (reissued at intervals to take account of new legislation).

Current banking statistics and comments on developments make up much of the monthly *Federal Reserve Bulletin;* a rich mine of back statistics is found in *Banking and Monetary Statistics* (Washington: 1943). Policy rulings and official reasons are published in the Board's *Annual Report.*

For authoritative views on the working of the control machinery, see L. Currie, *Supply and Control of Money in the United States* (Cambridge, Mass.: Harvard, 1934) and W. R. Burgess, *Reserve Banks and the Money Market* (New York: Harper and Bros., rev. ed., 1936).

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[65] As Professor Lloyd W. Mints points out, nonbank firms or even households could carry on central banking. If the Rockefellers, for example, determined at a family council to turn all their assets into cash to resist an inflationary boom—and later to turn all the cash back into other assets to help correct a depression—they would be acting as a central bank. But, in fact, even the largest private groupings do not swing enough weight to change monetary events much. Besides, they have to look out for their own business.

— *Chapter III* —

WEALTH, DEBT, AND LIQUID ASSETS

A. Wealth and Claims

Direct and Indirect Ownership. The "real wealth" of the United States consists of buildings, machinery, railways, stocks of finished and unfinished goods, houses, automobiles, clothes, and so forth. Most of the things we list are "producers' goods," although "consumers' goods" (especially housing) also come in.

All these goods have owners—and by "owners" we mean *people.* But if you take the tax-collector's assessment list of the real wealth in a particular town or state, you will find that title to most of the wealth is held by business corporations rather than by individual people. And if you go to the people and list the things they own, you will find that their most important form of property is "paper wealth"—stocks and bonds, and various other kinds of *claims.*

The upshot is, of course, that people own things indirectly—*through* the corporations whose claims they own. Corporations as such are not *ultimate* owners of wealth. If we set up an accounting system to measure national wealth,[1] we treat corporations as having net wealth of zero—offsetting the physical wealth and claims they hold against the claims of their owners and creditors. All wealth is treated as directly or indirectly owned by individuals as members of households, except wealth owned by government bodies and nonprofit organizations—in which particular individuals do not have distinguishable shares, although it is plain enough that in principle this wealth, too, belongs to people.

[1] See J. R. Hicks and A. G. Hart, *Social Framework of the American Economy* (New York: Oxford University Press, 1945), p. 134.

The Layering of Claims. The structure of claims upon wealth is *layered:* that is, claims rest not only on physical wealth but also on other claims. This is conspicuously true of "credit institutions," as I pointed out at the beginning of Chapter I.[2] These institutions have claims (chiefly debts) as their assets, supporting a roughly equal amount of debt claims owned by bank depositors and other creditors.

This is not the only example of layering. A large proportion of bank deposits (that is, of debt claims upon banks) is owned by business corporations—introducing at least one more layer between the banker and the individuals who "ultimately" own the corporations. Furthermore, corporations own each other in various patterns. Some corporations are wholly owned by other corporations; some corporations have as assets nothing but claims on other corporations.[3] The first group of corporations (and others which are controlled by other corporations that own part of their shares) are described as "subsidiaries" of the owning corporations. Corporations in the corporation-ownership business are described as "holding companies" or (if they own shares for income and capital gains only without caring about control) as "investment trusts."

Incidentally, the layering takes forms which make it hard to use any simple image. It is tempting to describe the claims structure as a "superstructure" on physical wealth taken as "base." But the interplay of claims is so complex that even this is awkward. Both debt and stock-ownership claims can be traced around circles —Company A being partly owned by Company B, which is partly owned by Company C, which, in turn, is partly owned by Company A. Even individuals are involved in several ways. A person cannot be owned by a corporation (since slavery is prohibited); but he can be in debt to a corporation. The structure of debts is a series of criss-cross threads linking all types of economic units (households, business firms, credit institutions, and governments

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[2] See p. 21.

[3] So far as I can see, it would be possible to set up a cluster of corporations that would own each other reciprocally without any real persons or government bodies owning claims on any of the cluster. This would make trouble in tracing the ownership of real wealth to "ultimate" owners. But I never heard of such a corporation-cluster in actuality, and it is a little hard to see why it would come into being.

in all their sub-varieties) in all possible combinations. The structure of residual-ownership claims is almost as complex.

Markets in Assets: The Stock Exchange and Liquidity. The layering of claims makes it possible for the ownership of wealth to take on a value separate from the wealth itself. The market value of the bonds and stock of a corporation may be either more or less than the value of the actual productive wealth (plus claims on others) held by that corporation.

Most types of assets have markets of some sort where they can be bought and sold. For a large part of our physical assets (used machinery, household goods, and so forth), these markets are rather imperfect and most holders are interested in using their wealth rather than selling it. The chief exceptions are the standardized storable goods, for which we have "commodity exchanges," and real estate. But the real estate market is somewhat "thin" because different pieces of real estate have such different characteristics and uses.

Of all the asset markets, those for "securities" are the most perfect. Both bonds (debt claims) and stocks ("equity," or residual-ownership claims) may have such markets, and are in fact traded on the New York Stock Exchange and on secondary stock exchanges in other leading cities.

As I pointed out in connection with bank assets,[4] having such a market adds to the liquidity of debts in the balance sheet of the creditor. The holder of bonds listed on the Stock Exchange has two strings to his bow where the holder of unlisted bonds has only one: in addition to the debtor's promise of eventual repayment, he has the possibility of selling the bonds before payment comes due.

In less degree, the same is true of stocks. Like bonds, they take on "shiftability" when there is an active market. Besides "shiftability," liquidity calls for confidence about future prices—and the prices of shares of stock are uncertain. But there often are some holders of stocks who have more confidence in their price forecasts than the record justifies; and such people may come to feel their stocks are "the same as money, only better"—having both income-yielding power and (in their own eyes) liquidity.

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[4] See pp. 48–52 and 57–58.

At the very least, presence of an organized market gives the security-holder assured borrowing power. If he owns listed securities, he can count on being able to borrow a good fraction of their market value,[5] without much fuss or delay, and without being dependent on the good will of any one particular banker. Being confident of borrowing power is nearly as good as cash in the bank; [6] therefore, the market always gives liquidity to assets, at least in this way.

Whether this added liquidity is a good thing or a bad one is debatable. On one side it is argued that marketability makes people more willing to hold shares in corporations and thus smoothes the way for the financing of new business. On the other side, it is argued that this kind of liquidity is artificial and unstable and makes the economic system vulnerable to financial shocks.[7] There is sense in both arguments. For myself, I lean more toward the second: I am afraid of psychological evaporation of psychologically created liquidity, and would be more confident of our financial future if people were less concerned with the marketability of their assets. But the judgment is a delicate one, and there is room for a wide range of defensible opinions.

Financing the Growth of Wealth: Investment Banking. Obviously the structure of claims has a great deal to do with the way a country finances the growth of wealth. The producers of new machinery, factories, transport equipment, office buildings—even housing, in the forms of apartments, hotels, and so forth depend on financing for their markets.

Commercial banking has a hand in this process. An expanding firm can get bank loans to help it grow. A builder can borrow to

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[5] Federal Reserve regulations may limit (or reduce to zero) the owner's ability to borrow "for the purpose of purchasing or carrying securities." But his securities are still available to reinforce his claim to borrow for other "purposes." Actually, most loans based on stock-exchange collateral are apparently for other "purposes." In 1938, the Federal Reserve showed loans "on securities" to nonbrokers at member banks of $2590 million in September, and loans to nonbrokers "for purchasing or carrying securities" of $775 million in December. This was not a decrease of loans (total loans went up) but a reclassification. In addition, remember that many "unsecured loans" are granted on those terms because the borrower is known to have property he could pledge as security if called upon.

[6] See Chapter VIII.

[7] A very interesting piece of viewing-with-alarm on this subject is A. A. Berle and V. J. Pederson, *Liquid Claims and National Wealth* (New York: The Macmillan Company, 1934).

finance the buildings he has under construction. But under the traditions of commercial banking in the English-speaking countries,[8] commercial banks are not supposed to put funds permanently into any business—except to a limited extent by taking its bonds.

Under present conditions, economic growth can be financed to some extent by the nonbank credit institutions which will come up for study in the next section of this chapter—notably life insurance companies. An insurance company can make large permanent investments in bonds (and, also, can invest in housing projects on its own account). But even today there are large areas of growth which this mechanism does not reach: in particular, it does not provide "equity money" through the buying of stocks, and every business sets limits of prudence to financing through going into debt.

Traditionally, this gap has been filled by "investment banking." Certain financial firms have specialized in "underwriting" new securities. A company which wanted to get funds for new plant by selling bonds or stocks could sell them to an investment banker (or to a "syndicate" of investment bankers acting jointly). The investment banker would then send out salesmen and retail the issue to individuals and companies with funds to invest. In this process of "floating" an issue, the Stock Exchange also figured. Listing of the security on the Exchange was held out to the retail buyers as an inducement. If some of them changed their minds about holding the securities while they were being sold, the "underwriters" would buy up the reflux. If lively interest developed on the market, securities could be sold there without recourse to salesmanship.[9]

Besides the investment banking houses, the financing of growth has traditionally depended on individual investors (and, to some extent, investment trusts) who could offer "risk capital." The rank and file of security holders always prefer "seasoned" securi-

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[8] On the continent of Europe, and especially in Germany, bankers did not feel so limited, but on the whole were free to make large permanent investments and exercise continuing control. Thus, "commercial banking" and "investment banking" did not split apart as they did in the United States.

[9] Companies with very good reputations could often put out new securities directly onto the stock market by the device of issuing "rights" to holders of their securities already outstanding. This was very popular in the 1920's.

ties—securities which have been outstanding long enough to accumulate some experience, representing established companies. The buyers of the more risky new issues have in good part been a specialized group of wealthy men with wide business connections, who were willing to bet heavily on their business judgment both with owned funds and with funds borrowed at banks. Thus, when the business behind a security issue succeeded and the securities rose in price, there would be a process of "secondary distribution"—these specialized holders passing the now seasoned securities along to the rank-and-file investors. The proceeds of these "secondary distribution" sales on the stock market gave successful [10] primary buyers the funds for new purchases of freshly issued securities, reimbursement for their losses on former purchases which shriveled up instead of seasoning, and a profit. Financiers could also profit by backing new and small firms which were not at the stage where they could get capital by floating securities, until they reached the stage for an open-market flotation.

This rather idyllic picture of investment banking, the Stock Exchange, and the role of the financier is one side of the truth. But we should not overlook the seamy side while we are on the subject. The financier not only helped make new constructive ideas take hold: he also squeezed out the actual framers of many such ideas, in order to capture their share of the profits, and blocked the development of many such ideas because they conflicted with his business interests (or because he lacked the vision to see their merit).

The investment banker not only helped get funds to finance economic growth. He also thought up ingenious ways to make underwriting profits out of reshuffling of ownership, built up financial "empires" where his representatives could go on influencing management long after they were launched, and developed "communities of interest" in business which greatly intensified the nation's monopoly problem.[11]

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[10] In the process of taking these risks, many financiers, of course, came to grief. If they happened to be "loaded" with unpromising securities and heavily in debt to the banks when a depression struck, they could easily be squeezed into bankruptcy.

[11] Sometimes these aspects of his activity mingled. Students of monopoly suspect that many monster combines were put together not for the sake of efficiency or even of monopoly profits to be squeezed out of customers and suppliers, but simply

The Stock Exchange was not merely a channel for "secondary distribution" of new issues, and a factor of security for the investor who might need his funds back unexpectedly. It was also a fine cruising ground for financial pirates armed with inside information about companies and with psychological tricks for stampeding masses of ill-informed investors. The reality of these abuses underlay the financial reforms of the "New Deal" in the 1930's, which required full disclosure of information about new issues in prospectuses, divorced investment banking more completely from commercial banking, and created publicity for security dealings of members of Stock Exchanges and officers of companies whose shares were listed.

Marketing Claims and Future Prosperity. The whole apparatus of investment banking and the Stock Exchange was badly shaken by the Great Depression of the 1930's. There is a great deal of dispute as to whether the lack of a strong revival of this apparatus was cause or effect of the incomplete recovery of business in the 1930's. Students of finance point out that many financiers and investment bankers took such heavy losses in the 1929–1933 deflation that they were financially unable to carry on new financing in the 1930's; and there have been loud complaints of taxes on capital gains interfering with these operations. On the other side of the argument (to which I lean myself), it is pointed out that business was so thoroughly depressed in the 1930's that there was not a normal flow of new projects to finance. If there had been, very likely the financing apparatus would have worked.

Whichever side of this argument you take, there is a difficulty in the background which you should keep your eye on. Investors large and small seem to want their assets in the form of debts receivable rather than of equity (residual-ownership) claims. They are putting more and more of their current flow of savings into life insurance, pensions, and so forth. The importance of "trust funds" administered by bankers and lawyers seems to be on the increase; and these funds seek debt investment. Thus, the sup-

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because influential investment bankers saw in them a way to generate some new-issue business. Permanent influence (looking especially to an option to handle future security issues, but also affecting business policy) was one form in which investment bankers and financiers took their profits

ply of savings tends to be a supply of debt funds. On the other side of the market, business hates to rely too heavily on debt financing. A firm with heavy debts may be pushed into bankruptcy by a drop in prices or business volume; and businessmen remember sad experiences in the business downswings of 1920–1921 and 1929–1933. Business prefers to finance itself with equity funds—first choice, funds which will not "dilute" the control of the present management.[12]

There is danger, in short, that the financing of business growth may bog down because of disagreement between savers and businessmen over the appropriate type of financing. The late Professor Irving Fisher [13] used to fear that "overindebtedness" could generate a downswing. It is somewhat hard to believe that this influence could stop a prosperity in full career. But if there is a downswing from other causes, there is a real danger that businessmen will find themselves "overindebted" when business activity is low.[14] This situation may weaken business expenditure for purposes of expanding productive wealth ("investment," in the lingo of Part II) as a force for revival.

B. Credit Institutions Other Than Commercial Banks

Inventory of Credit Institutions Other Than Commercial Banks. Besides commercial banks, there are a number of groups of credit institutions—that is, of dealers in debts.[15] Before the war, the combined assets of these organizations were of roughly the same size as commercial-bank assets. Wartime growth has set the banks ahead more than these organizations; still, they remain important.

The chief groups of organizations to be studied are:

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[12] That is, business likes best of all to finance itself with undistributed corporate profits, funds put in by present stockholders through exercise of "rights" to buy new stock, and funds from new stockholders who are so obliging as to accept shares without voting rights.

[13] Irving Fisher, "The Debt-Deflation Theory of Great Depressions," *Econometrica*, Vol. I, 1934, pp. 337–357.

[14] See Homer Jones, "Investment Prospects," *Journal of Finance*, Vol. II, No. 1 (April 1947), pp. 15–33; also, G. Colm and F. Lehmann, *Economic Consequences of Recent American Tax Policy* (New York: New School for Social Research, 1938), especially pp. 75–76.

[15] See the definition on p. 21.

1. Mutual savings banks.
2. Savings and loan associations.
3. Life insurance companies.

There are also several minor groups which will be examined briefly. The debts payable of all these organizations are liquid assets for the firms and households who have claims upon them. All of them have debts receivable as assets, and their asset management affects the economic system much as does the asset management of commercial banks.

Mutual Savings Banks. Most nearly like commercial banks of the organizations on this list are the mutual savings banks. For many purposes of analysis, it is sensible simply to treat them as banks. But they have peculiarities which deserve special study.

Mutual savings banks are concentrated in the northeastern part of the country (in New England, New York, New Jersey, Pennsylvania, and Maryland), where they first took root a hundred years ago. Many of these banks (including several of the largest) were founded before the Civil War. They are organized without capital stock. Earnings are either paid to depositors or put into surplus. Control is in the hands of self-perpetuating boards of trustees which trace back to the groups that founded the banks.[16] All deposits in these banks are "savings deposits," not subject to check. Commonly the banks refuse to accept deposits from any one person beyond a maximum of $5000 or $7500.

Deposits at mutual savings banks have been very steady. They did not shrink during the depression along with deposits at commercial banks. On the contrary, they rose from $8.8 billion at the end of 1929 to $10.0 billion at the end of 1931; from then until June 1942, they ranged only between $9.5 billion (December 1933) and $10.7 billion (December 1940).[17] Consequently, mutual-bank deposits as a percentage of the deposits in commercial-

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[16] In getting such a bank under way, a group of founders put in funds which they agreed not to withdraw or convert to regular deposits until the bank had accumulated enough surplus to make it secure.

[17] There were no important failures of mutual savings banks during the Great Depression. Their relative immunity to failures and to runs is to be traced largely to their known conservatism and careful management. They gained greatly, however, from the inflow of deposits early in the depression, which piled on top of their portfolio a layer of assets bought at deflated prices after the depression had started.

plus-mutual banks rose from 17 per cent in 1929 to 24 per cent in 1933, and fell back to 15 per cent in 1942.[18] After 1943, mutual-bank deposits shared in the general growth of time deposits, reaching $17.5 billion at the middle of 1947; but this was only 12½ per cent of mutual-plus-commercial bank deposits.

On the asset side, mutual savings banks have traditionally carried very low cash reserves—from 3 to 5 per cent of deposits, kept chiefly in the form of balances at commercial banks. The largest single asset has been loans—almost entirely mortgage loans—which were around 60 per cent of their earning assets in the 1920's and in 1930–1933. Their loans dropped, however, both during the upswing of the late 1930's and during the war, so that loans were only a quarter of mutual earning assets by V-J Day. Railway and utility bonds and similar assets were about a third of earning assets in the 1920's, but also fell off—to less than a tenth—after the war. Government securities, on the other hand, rose to be two-thirds of earning assets.

As this list of assets suggests, mutual savings banks have been less concerned than commercial banks have been with the "liquidity" of their assets. This fact is shown also by the composition of federal securities they have held. For example, at the end of 1946, 69 per cent of the government securities held by mutual banks were bonds maturing after 1956, against only 8 per cent for commercial banks.[19]

Savings and Loan Associations. Savings and loan associations [20] are another group of credit institutions concerned with mortgages. Their main business has been home financing.

The "members" who have funds invested in these associations hold "shares" which the association is pledged to repay at face value. Repayment is guaranteed, not on demand or after stated notice, however, but as funds become available from loan repayment or new investments by others. During the 1920's, many associations in practice paid on demand, and some accepted deposits. During the early 1930's there were long delays, and many associations proved bankrupt. Thus, the moneyness of claims on

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[18] Percentages are based on the sum of adjusted-demand plus time deposits, as estimated by the Federal Reserve for both groups of banks.

[19] Figures of "Treasury Survey of Ownership," from *Federal Reserve Bulletin.*

[20] Also called "building and loan associations"—more rarely, "co-operative banks."

the associations fell sharply. On the upswing of the Great Depression, associations were again able to pay with reasonable promptness, and confidence in the *safety* of their shares [21] recovered, but not so much confidence in their moneyness.

Savings and loan associations grew by leaps and bounds during the 1920's. By 1929, the amount of repurchasable shares outstanding was about $6½ billion,[22] or about 12 per cent as much as bank deposits. At the low ebb of the associations in 1938, the amount of outstanding shares was about $4 billion, or 8 per cent as much as bank deposits. During the war, these associations grew fast, and by 1944 their repurchasable shares were $6.3 billion. But since banks grew still faster, this was only about 7 per cent as much as bank deposits.

On the asset side, savings and loan associations have traditionally held almost nothing but mortgages—plus real estate coming into the hands of associations when debtors could not pay. These mortgages were chiefly "fully amortized"—a sensible arrangement in which savings and loan associations led the way. Cash, as at mutual banks, has run from 3 per cent to 5 per cent of liabilities. Investments, until recently, have been small. During World War II, however, funds came in faster than they could be placed in mortgages, and the excess went into United States government securities.

Life Insurance Companies. When people think of the life insurance business as a whole, they naturally emphasize its insurance operations—payments to beneficiaries when policyholders die, and collection of premiums to finance these payments. It may come as a shock, therefore, to find life insurance companies listed here as credit institutions in much the same sense as savings banks.

How the savings come in will be clear, however, if you think back to the last time you talked with a life insurance salesman.

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[21] The federal government supported these associations during the depression: (1) by refinancing about $800 million of their mortgages through HOLC; (2) by setting up a system of Federal Home Loan Banks through which associations can borrow, under which loans sometimes mounted to $200 million; (3) by government investments in their "shares"; (4) by setting up a Federal Savings and Loan Insurance Corporation. The effect of insurance is to guarantee eventual repayment (within three years, if an association fails), but not immediate repayment; it insures solvency but not liquidity.

[22] This figure for "private repurchasable capital" shares is only a guess, as statistics are fragmentary down to 1936. See *Statistical Abstract of the United States*, 1946, p. 420.

Probably he didn't try to sell you "term insurance," under which you would pay each year a premium covering the risk of your death that year (plus a margin for the company's expenses).[23] Under such a term insurance contract, since the risk of your death rises as you grow older, premiums would rise each year. What the salesman urged you to buy was probably some type of "level-premium" policy—such as "ordinary life," "20-payment life," "20-year endowment," or "family income." Under any level-premium policy, premiums are set *higher* than term-insurance premiums would be at the age of the policyholder when he bought the policy, but *lower* than term-insurance premiums would be in the late years of the contract. The excess premiums paid in the early years are *savings* made through the insurance company; these savings (plus interest) are used to make up the deficiency of premiums in the later years.[24]

The salesman undoubtedly pointed out also that if you later change your mind about life insurance you can surrender your policy and draw out your savings in cash. If you need funds while you still want insurance, you can "borrow" up to the cash-surrender value of your policy. In practice, these cash-surrender values can be drawn out within a few days—either as a whole by "surrender" or in part by "borrowing." As an asset for the policyholder, therefore, they are much the same thing as savings deposits at a commercial bank or mutual savings bank.

The total amount of these cash-surrender values is of the same general size as time deposits—about $39 billion [25] at the end of

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[23] Other types of insurance (automobile liability, fire and theft, and so forth) are normally sold on a term basis; this is why insurance companies other than life do not enter the list of credit institutions.

[24] The savings element is substantially the whole premium under "single-payment life policies," and the whole premium under annuity contracts where policyholders are buying retirement income rather than life insurance.

[25] Roughly, cash-surrender values available to policyholders may be calculated by taking the life insurance "reserve," adding "dividends unpaid and left to accumulate," and subtracting "policy loans" and "deferred and unpaid premiums." A further deduction (for which we lack statistics) is the "surrender charge" by which the company would keep part of the reserve to compensate it for expenses, and so forth, if the policy was surrendered within 3 or 5 years of the time it was bought. This deduction probably amounts to several hundred million dollars.

Current statistics for the bulk of the life insurance business are compiled by the Life Insurance Association of America and published monthly in *Survey of Current Business;* complete annual figures (published with a lag of over a year) are compiled by the Spectator Company.

1946, compared with $34 billion of commercial-bank time deposits and $54 billion of time deposits in commercial banks, mutual savings banks, and Postal Savings [26] combined. Just before the war, life insurance cash values were nearly as large as total time deposits—$23.2 billion compared with $27.5 billion of time deposits in 1940—and, aside from war disturbances, they seem to have an uptrend relative to time deposits.[27]

The asset management of life insurance companies resembles that of mutual savings banks.[28] Cash is held down to 2 or 3 per cent of the cash values which correspond to the savings deposits; such a low ratio is safe because premiums due under outstanding contracts outrun payments to policyholders by more than $100 million a month. In the 1920's, like mutual savings banks, the life insurance companies invested their funds chiefly in mortgages and in bonds of railways, power companies, and local governments. During the 1930's and even more during the war (again like mutual savings banks), they invested heavily in federal securities. In their investment policy they are more concerned with safety of principal and interest earnings than with liquidity. This relative unconcern with liquidity is illustrated by the fact that 75 per cent of their holdings of government securities at the end of 1946 were bonds maturing later than 1956—as compared with 69 per cent for mutual savings banks.

Minor Credit Institutions. Other credit institutions in the United States are much smaller, and need only brief examination. The list includes:

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[26] See p. 132.

[27] As percentages of all time deposits in banks, life insurance cash values were about 35 per cent in 1925, 46 per cent in 1929, 68 per cent in 1933, and 84 per cent in 1940. Before 1925, time deposits had apparently been outgrowing insurance cash values for some years past. But this fact is very probably the result of changes in classification at banks, which recorded as time deposits items which would earlier have been shown as demand deposits. In any event, the fact that insurance cash values grew almost throughout the downswing of the Great Depression (except for a few months in 1932), and grew by a larger absolute amount than did time deposits on the upswing, suggests very vigorous expansive forces. Early postwar data suggest insurance cash values will presently start to catch up again on time deposits.

[28] Incidentally, there is also much similarity in organization, since most of the major life insurance companies are also "mutuals," and have no stockholders to draw off profits. Life insurance companies have policyholders ballot to elect directors; but in practice their governing boards (like those of mutual savings banks) are self-perpetuating.

1. The Postal Savings System.
2. Stock brokers.
3. Installment loan companies.
4. Credit unions.

The Postal Savings System, as the name implies, is a branch of the Post Office Department. Post offices accept savings deposits much as do mutual savings banks and commercial banks. Into the 1930's, the custom was to redeposit Postal Savings funds as special government time deposits in local commercial banks. But the decline of interest rates in the 1930's made it unprofitable for banks to accept these deposits and pay the interest required. So almost all the funds were put into United States Government securities. The substance of the arrangement is that Postal Savings deposits are government debt in the same sense as "Greenbacks" and other "Treasury currency outstanding."

Stock brokers also operate on a minor scale as credit institutions. Their debts payable consist partly of "customers' credit balances," partly of debts to banks (the "loans to brokers for purchasing and carrying securities" of the bank statistics). Customers' credit balances arise when securities are sold and the owner does not immediately call on his broker for payment, or when a customer sends funds to a broker but does not immediately order them used to buy securities. From the customer's standpoint, these claims are much the same as bank deposits, although he cannot draw checks upon them.[29] Since late 1931—the earliest date for which we have statistics—customers' credit balances have ranged from $0.3 to $0.9 billion, so that they are small in size as compared with bank deposits, and the like. The cash and receivables of brokers consist of bank deposits (ranging from $0.2 to $0.5 billion) and loans to customers. In the 1920's and early 1930's, when brokers operated on a larger scale, their main activity as credit institutions was as intermediaries between banks and security speculators. They made loans to customers to finance their dealings, and acquired the funds by borrowing at banks.

"Personal finance companies" and similar organizations are also chiefly credit middlemen. They make loans to individuals

[29] Some brokers used to issue checkbooks to customers; but this practice is now prohibited.

to assist them to buy automobiles and household goods or to meet household deficits; they finance themselves largely by borrowing at banks. They may increase the liquidity of households by enhancing their borrowing power. But they have next to no debts payable, which constitute liquid assets for households or for other business firms.[30]

Credit unions, finally, are consumers' co-operatives devoted to the loan business rather than to dealing in commodities. They operate rather like savings and loan associations, except that both their debts receivable and their debts payable (repurchasable shares) are on short term. Their operations are small; their outstanding loans have never much exceeded $0.2 billion.

C. The Debt Structure and the Public's Liquidity

How Real Is Debt? Alarmists about debt often go in for absurdities. If you locate all the debt contracts in the United States at any one time, add up their face values, and strike a total, you get a figure larger than that of the national wealth. If our debt exceeds our wealth, mustn't we be bankrupt?

The error in this alarmist view, of course, is that every debt has two ends. Every debt payable is also a debt receivable for somebody. Debts add as much to the asset side of the national balance sheet as to the liability side. So we reassure the alarmist that the nation can't be bankrupted by some Americans owing debts to other Americans, any more than a family can be bankrupted by having two brothers exchange promissory notes.

This reassuring argument, however, seems to prove too much. The *net* total of debts receivable and debts payable is zero.[31] Does it follow that debt can be disregarded?

The answer is that the importance of debt doesn't lie in its amount, but in its *structure*—who owes whom, how much, and on what terms. The effect of a given debt on the creditor is not measured by simply putting a minus sign in front of the effect on

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[30] For indications of the character of the business of personal finance companies, see "Consumer Credit Statistics," published monthly in *Federal Reserve Bulletin*.

[31] Approximately, that is. Debts owed by Americans to foreigners are not equal to debts owed by foreigners to Americans. Internationally, we are net creditors, so that our debts receivable total somewhat more than our debts payable.

the debtor. The two effects of the debt are different in kind.

Debts and Liquidity. Broadly speaking, when debtor and creditor are the same kind of dealers—both households, both business firms, or both banks—existence of a debt slightly increases the "liquidity" of the community. The debtor feels the "negative liquidity" of the amount he must pay presently, but has a little while to turn around. The creditor feels the positive liquidity of the amount he is scheduled to receive—but feels less liquid than if he had paper money in a vault with a time-lock set for that date, since he must face the possibility that the debtor won't pay on schedule. The longer the debt, the less the liquidity for the creditor—but the less also the illiquidity for the debtor.

Long-term debts raise general liquidity if they are the sort that can be traded on the stock exchange—bonds of a power company, for instance. Repayment is so remote that the negative liquidity for the debtor is not great. The creditor does not gain much positive liquidity from the prospect of eventual repayment; but he may from the prospect of being able to sell on the stock exchange. Thus, marketable bond issues add more to liquidity than they subtract. To this rule there is one major exception: if the debtor is in danger of defaulting on a payment of interest or principal due in the near future, his creditors may come down upon him for the whole sum due.[32] In this case, the negative liquidity of the debt suddenly looms up; while the same news of the danger of default destroys positive liquidity for the creditor.

Debt transactions which involve credit institutions have still stronger effects upon the liquidity of the general public—that is, of households and firms other than credit institutions. If a bank buys part of a new issue of bonds, the negative liquidity of the new bonded debt for the debtor is far outweighed by the positive liquidity of the bank deposits "created" by the operation. If the bank expands its loans, the net effect is less marked, since the negative liquidity of a short-term debt comes nearer balancing the positive liquidity of added bank deposits; but there is still a margin.[33]

Transactions between government and households or firms are fairly close to neutral if they involve merely the exchange of cash

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[32] Debt contracts often provide for "acceleration" of maturity in case of default.

[33] On the effects of bank loans, see pp. 75–76.

for government securities. But if the public's holdings of government debt are changed through a surplus or deficit in the budget, the effect on the public's liquidity is much stronger.[34] As the government debt rises in a period of deficits, there are, of course, sensationalists who try to frighten us by quoting the surprisingly large sum per family which the government debt amounts to.[35] But the fact is that private households and firms do not have to pay the government debt; at most, they may expect higher taxes to cover debt service. On the asset side of private balance sheets, some parts of the government debt have almost as much moneyness as bank deposits, while all are somewhat liquid.

Government Debt as Liquid Assets of the Public. Many types of government debt have a great deal of "moneyness." Savings Bonds, in particular, may be cashed at any bank without notice and bear interest up to the last interest date previous to the time they are cashed; these qualities give them about as much moneyness—dollar for dollar—as time deposits. "Tax Notes," held chiefly by corporations, are almost as liquid. Short-term governments are given liquidity by redemption, by Federal Reserve commitments to buy them, and by the general market, as we saw in Chapter II. Even long-term Treasury bonds have a very reliable market and, consequently, fairly high liquidity.

The importance of government securities as liquid assets for the public may be seen from figures for the end of 1946. The Treasury estimated that individuals owned $63.3 billion of government securities, "other corporations and associations" $23.4 billion, and state and local governments $6.2 billion. These figures total $92.9 billion. To this total we should add about $3.0 billion for holdings of insurance companies other than those engaged in life insurance; from it we should subtract about $5.0 billion for holdings of savings and loan associations, and so forth. The upshot is that the public held about $91 billion of the government debt.

Of this amount, about $48 billion consisted of United States

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[34] On government surplus or deficit as analogous to "open-market operations," see p. 117.

[35] The peak of federal *gross* debt (to take the most sensational figure) was about $279 billion early in 1946; spread over 40 million "consumer units" (of which about 6 million were single persons and the rest families), this gives $7000 per unit.

Savings Bonds—not marketable, but redeemable—and about $6 billion of Tax Notes. Thus, about $54 billion was redeemable on demand and interest-bearing as well. In addition, roughly $11 billion consisted of marketable securities maturing within a year.[36] The proportion of the public's holdings of marketable government securities with over 10 years to run was considerably lower than the proportion for life insurance companies and mutual savings banks.

As compared with this $91 billion of federal government securities, the non-bank public held at the same time:

About $27 billion of coin and paper money,
$82 billion of demand deposits adjusted,[37]
$54 billion of time deposits (including mutual-bank deposits and Postal Savings),
$8 billion of savings and loan shares,
$39 billion of life insurance cash values,
$1 billion of claims on brokers, etc.

Altogether, this amounts to about $211 billion of other assets of comparable liquidity. Of the total of $302 billion of liquid assets, government securities accounted for 27 per cent.

The importance of government securities among the public's liquid assets was, of course, greatly increased by the war. In June 1939, the public held:

About $6 billion of coin and paper money,
$26 billion of demand deposits, adjusted,[37]
$27 billion of time deposits,
$4 billion of savings and loan shares,
$21 billion of life insurance cash values,
$1 billion of claims on brokers, etc.

Altogether, this is about $85 billion. Government securities held then were only about $12 billion—making the total of liquid

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[36] This estimate is very rough, since Treasury data by maturities do not classify about one-eleventh of bank holdings nor the holdings of savings and loan associations.

[37] "Adjusted" means that double-counting due to checks in collection is corrected; see pp. 37–38.

assets about $97 billion and the proportion of government securities in the total about 12 per cent.

Liquid Asset Creation; the Deficit and the Credit Institutions. If we consider the combined effect of the operations of the government and the credit institutions on the "public"—that is, on households, business firms other than credit institutions, and state and local governments—we arrive at an arithmetic of "liquid asset creation." The logic of this arithmetic is identical with that of "deposit creation." [88]

As with deposit creation, the process is clearly shown by war experience. Figures are given in Table 12. From June 1939 to June 1945, the public's liquid assets grew by $175 billion—including $78 billion of cash, $81 billion of United States Government securities, and $16 billion of claims on life insurance companies and savings and loan associations. Looking at the war period as a whole, almost all of this growth came from the Treasury's wartime deficit—the excess of cash outgo over cash income was $171 billion. Down to the end of 1941—that is, before we were actively in the war—only half of the growth of liquid assets arose from the cash deficit. A quarter came from expansion of earning assets at credit institutions; a quarter, from gold imports and shifts in Treasury currency accounts. During the active war period, however, these factors acting as other sources of liquid assets worked in reverse, so that the growth of liquid assets was slightly less than the cash deficit. The credit-institution earning-asset account at the end of the war was about at the 1939 level. Since this account is the reverse side of the public's debts to credit institutions, this means that there was virtually no increase in the negative liquidity represented by debts to offset the growth of positive liquidity.

Look hard at the proportions of the different types of liquid assets in the table. These proportions represent the choices of the public as to the form in which they would hold an increase in their wealth. True, the "bond drives" put people under pressure to *buy* bonds; but people were not under much pressure to *hold* them. If the public had chosen to hold less in government

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[88] Cf. the discussion of deposit creation for the public (including non-bank credit institutions), above, pp. 63–73, and for the banks at the central bank level, above, pp. 106–111.

TABLE 12: CREATION OF LIQUID ASSETS DURING WORLD WAR II
(In billions of current dollars, rounded to $0.1 billion)

	Amounts on the Books			Changes		
	6/30/39	12/31/41	6/30/45	6/30/39 to 12/31/41	12/31/41 to 6/30/45	6/30/39 to 6/30/45
LIQUID ASSETS OF INDIVIDUALS, STATE & LOCAL GOVERNMENTS, AND CORPORATIONS OTHER THAN CREDIT INSTITUTIONS:						
1. Commercial-bank deposits plus money outside banks:						
a. From Table 9	48.5	64.5	121.3	16.1[a]	56.8	72.9
b. Life insurance and savings & loan cash	−1.1	−1.2	−1.1	−.1	0.1	0.0
	47.4	63.3	120.2	15.9[a]	56.9	72.8[a]
2. Deposits in mutual savings banks & Postal Savings	11.7	11.9	17.1	0.2	5.2	5.4
3. Cash—broad concept	59.1	75.2	137.3	16.1	62.1	78.2
4. U. S. securities [b]	13.6	20.1	94.5	6.5	74.4	80.9
5. Life insurance cash values [c]	21.7	26.1	35.2	4.4	9.1	13.5
6. Savings & loan shares, net [d]	4.0	4.6	6.8	0.6	2.2	2.8
7. Liquid assets	98.4	126.0	273.8	27.6	147.8	175.4

[a] Detail fails to add to this total because of rounding.

[b] *Treasury Bulletin* estimate of securities held by "individuals," "other corporations and associations," and "state and local governments"—*minus* an estimate of savings and loan holdings and *plus* an estimate (based on Treasury monthly figures) for insurance holdings other than life.

[c] Based on Spectator Company figures for December 31: reserves plus dividends left to accumulate, less policy loans, less deferred premiums. June 30 figures interpolated by change in monthly series *(Survey of Current Business)* covering total assets less policy loans for companies with 81–82 per cent of assets. Cash in item 1b from same sources.

[d] Based on a series for "all operating associations" in *Statistical Abstract of the United States.* "Free shares" only, not including shares pledged to secure mortgages. Cash in item 1b from same source.

SOURCES OF LIQUID ASSETS:						
8. Credit-institution assets other than U. S. securities:						
a. Commercial banks, net [e]	17.0	20.9	19.4	3.9	−1.5	2.4
b. Mutual savings banks	7.2	6.7	5.6	−.5	−1.1	−1.6
c. Life insurance, net [f]	16.8	19.3	17.0	2.5	−2.3	0.2
d. Savings & loan, net [g]	4.3	4.9	4.9	0.6	0.0	0.6
e. All major credit institutions	45.3	51.8	46.9	6.5	−4.9	1.6
9. Monetary sources proper:						
a. Gold stock	16.1	22.7	20.3	6.6	−2.4	4.2
b. Treasury currency, net [h]	0.3	1.0	1.9	0.7	0.9	1.6
c. Monetary sources	16.4	23.7	22.2	7.3	−1.5	5.8
10. Public debt:						
a. Initial U. S. debt to credit institutions & public	36.9	36.9	36.9	0.0	0.0	0.0
b. Cumulative excess of Treasury cash outgo over cash income [i]	0.0	14.4	171.4	14.4	157.0	171.4
c. Total public debt, net	36.9	51.3	208.3	14.4	157.0	171.4
11. Total sources	98.6	126.8	277.4	28.2	150.6	178.8
12. Discrepancy	0.2	0.8	3.6	0.6	2.8	3.4

[e] Loans, non-government bonds, miscellaneous assets, *net* of miscellaneous assets and bank capital funds. In Table 9, items 7c + 10 − 12a.

[f] Bonds other than United States Government, plus stocks owned, plus mortgages and real estate, plus miscellaneous assets, less surplus. December 31 figures from Spectator Company; June 30 interpolated from *Survey of Current Business;* see note *c.*

[g] Mortgage loans, net of pledged shares, plus miscellaneous assets (chiefly real estate), less "general reserves and surplus"; same source as note *d.*

[h] Treasury currency outstanding less money in Treasury; from *Federal Reserve Bulletin.*

[i] From *Treasury Bulletin.*

securities and more in cash, they could have done so. The result would have been heavier bond purchases by the Federal Reserve and commercial banks.

In practice, a large proportion of the bonds held by the public can be turned into cash almost instantly. In particular, the roughly $55 billion of "nonmarketable" but redeemable issues in the hands of the public at the end of the war [39] can be cashed with almost no fuss and delay. This fact emphasizes the danger of trying to carry on monetary analysis without allowing explicitly for "near-moneys," including government debt. As I showed above,[40] the boundary between excess reserves and earning assets of banks is obscured because part of the earning assets—the short-term Treasury securities—can be turned into excess reserves whenever banks choose. Just as the supply of bank reserves is "open-ended" by the arrangements for cashing such bank-held securities, the supply of cash held by the public is "open-ended" by arrangements for cashing Savings Bonds, Tax Notes, and so forth. Owning such assets is, for many purposes, the same as having cash—except that they bring in interest until the option to cash them is exercised.

* * *

Note on Alternative Points of View and Supplementary Readings

For some reason, textbook material on nonbank credit institutions and the debt structure outside banking tends to run in disconnected chapters on special topics. For more general material, see A. A. Berle and V. Pederson, *Liquid Claims and National Wealth* (New York: Macmillan, 1934), E. Clark (ed.), *Internal Debts of the United States* (New York: Macmillan, 1933), and A. G. Hart, *Debts and Recovery* (New York: 20th Century Fund, 1938).

An inventory of nonbank credit institutions is offered in Federal Reserve Board, *Banking Studies* (Washington: 1941), pp. 143–166.

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[39] In June 1945 there was about $45½ billion of Savings Bonds and about $10 billion of Tax Notes outstanding. Of these, banks and life insurance companies held about $1½ billion. In the postwar transition period, tax reduction cut down the amount of Tax Notes held; but despite some periods when many bonds were cashed, Savings Bonds showed enough net growth to balance this shrinkage.

Considerable sums in Treasury Certificates and Treasury Notes are also in the public's hands; but these shift too fast to make generalization feasible.

[40] Pp. 103–106.

— Part II —

LIQUID HOLDINGS, MONEY PAYMENTS, AND PRICES

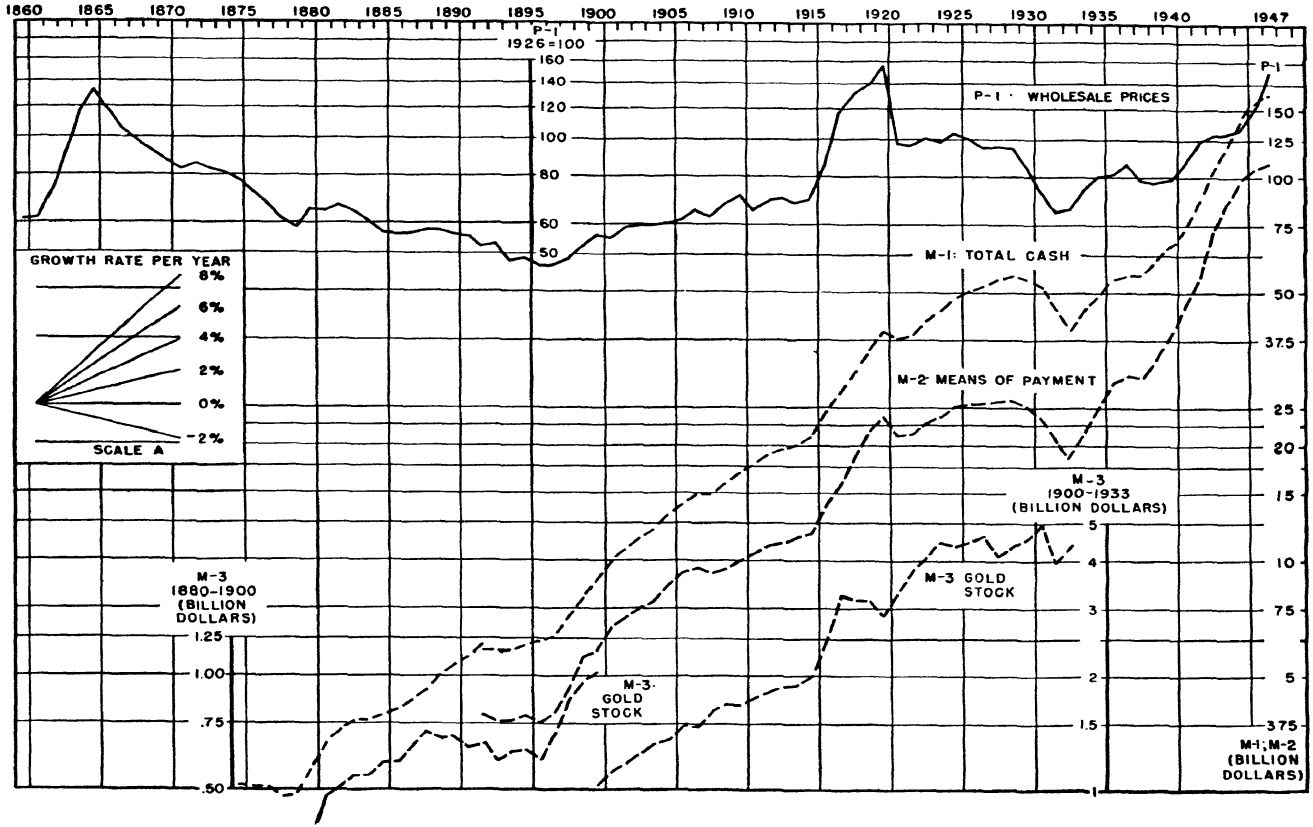


FIG. 2. WHOLESALE PRICES AND STOCK OF "MONEY," 1875–1947.

— *Chapter IV* —

THE PROBLEM: PRICE LEVELS OR EMPLOYMENT?

The Traditional Price-Level Problem. To interpret the wide upward and downward swings of the price level has always been one of the chief tasks of the economist. Just what we mean by "price level"—which is by no means a simple idea—we shall see shortly. However we define it, it has at times moved violently in both directions.

The gyrations of the wholesale price index in the United States since 1860 are shown by Curve P-1 in Figure 2. (This index is chosen rather than others simply because we can trace it farthest back into history.) The curve shows sharp peaks for each of our three major wars (1865, 1920, and 1947); and if traced back farther than 1860, it shows another (1814) for the War of 1812.

For centuries, many economists have held that the basic cause of price-level changes lies in changes in the stock of money. This doctrine, known as the "quantity theory of money," has never been held without qualifications; and, as will soon appear, the qualifications of late years have pretty well swallowed up the doctrine. But presentation and criticism of the quantity theory were long the focus of monetary discussion.

Since this is our starting-point, it is worth looking at the facts to see whether the quantity theory is grossly unrealistic. For a rough test, Figure 2 will serve.[1] The upper curve (Curve P-1) traces the course of prices; the three lower curves trace three measures of the stock of "money" which might be defended as appropriate for quantity-theory analysis. Curve M-1 is the total

[1] The diagram is "semi-logarithmic." That is, equal horizontal distances measure equal time intervals, while equal vertical distances measure equal *percentage* differences. Curves which are parallel in slope are rising at equal rates measured in per cent per annum.

stock of "cash," including all the coin, paper money, and checking (adjusted demand) and time deposits held by the nonbank public. Curve M-2 is the total stock of "means of payment"—the former total excluding time deposits. Curve M-3 is the monetary gold stock.

All the money curves have an uptrend relative to the price curve. This relationship is not in conflict with the quantity theory, since the theory (as generally understood) allows for growth of the "volume of trade" increasing the amount of "money" needed to finance a given price level. If you make some sort of rough allowance for trend, you will see that the larger swings in the price curve have counterparts below. Since 1875, where our cash series starts, every drop in the price index exceeding 5 per cent from year to year (except in 1910–1911) is accompanied by a drop in total cash and in total means of payment; although, except in 1929–1933, the percentage drop in "money" was a good deal smaller than the drop in wholesale prices. Every rise in the price index exceeding 5 per cent from year to year is accompanied by a sharp rise in total cash and total means of payment (with two apparent exceptions, which are less disturbing on closer inspection).[2] Furthermore, most sharp changes in cash (or in means of payment) go with price changes in the same direction.

In my view, which I think this rough test bears out, the quantity theory is a rough approximation to the truth, if we take "money" to mean either total cash or total means of payment. (The variant in which we take "money" to mean gold fares much worse.[3]) Very large changes in "money" may be expected to produce roughly proportional changes in prices. But the proportionality is so very rough, and the theory is so inadequate to explain less dramatic changes, that we cannot rest content with such a vague theory.

The Traditional Split of Price Level and "Value." In its heyday, the quantity theory was used to make a very convenient split in the problems that the economist must study. It was held that

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[2] In 1878–1879 and in 1932–1933, the diagram shows wholesale prices higher in the second year and cash lower. In each case, however, both cash and prices were declining throughout the first year and increasing throughout the second year, except for a few weeks early in the year.

[3] Look at the years 1892–1893, 1907–1908–1909, and 1911–1912 for examples of rather drastic gold changes (at the height of the gold standard) with opposite price movements. For analysis of gold, see Part IV.

money determined the *price level.* But *relations among prices* were explained by a totally different set of forces—those dealt with in the supply-and-demand analysis of Alfred Marshall or in the more complex "general equilibrium" analysis of the mathematical school.[4] This analysis was christened the "theory of value."

The volume of employment and production was not treated by economists in those days as a problem. It was assumed that all available productive resources would be used—that they would push themselves into employment by bidding down wage rates and raw-material prices until they were so cheap that businessmen could not afford to let them stand idle. In analysis of the "short-run" or "transition" periods, quantity theorists did recognize links between price levels, general prosperity or unemployment, and changes in relative prices.[5] But their interest focused on the long-run problems (with full employment taken for granted), for which the quantity theory was designed.

Only in recent years have short-run problems been studied so closely. As these problems have come more into the foreground, the price level has ceased to be the central problem of monetary theory. More and more, the central problem is unemployment; but the price level remains an important problem as well.

Index Numbers: From "Objective Mean Variation" to "Market Basket." The separation of problems just described explains the way in which the theory and practice of index numbers have grown up. The natural counterpart of the quantity theory of money is the view that from time to time there is a pervasive general movement, affecting all prices *in the same direction and in the same proportion.* In fact, of course, all prices do not change from

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[4] For an example of the way this split worked when both problems came up in different sections of the same book, see Irving Fisher, *Elementary Principles of Economics* (New York: Macmillan, 1912). Fisher argued that a set of algebraic equations (with variable terms to measure prices and outputs of individual commodities, and with constants to measure the effect of consumer tastes, supplies of productive factors, and technical conditions governing productivity) could be "solved" for the individual prices, but would yield answers each of which contained a common unknown term. This term, Fisher argued, represented the general price level, and could be determined by bringing in the quantity theory of money to supplement the evidence in the individual-commodity equations.

[5] Cf. Irving Fisher's analysis of the effects of monetary changes on relative prices, volume of transactions, and "velocity of circulation," in *Purchasing Power of Money* (New York: Macmillan, rev. ed., 1926), pp. 55–73.

time to time in the same proportion or even in the same direction. But according to the view here under discussion, this scatter of price change reflects simply supply-and-demand forces working on relative prices. (For instance, suppose that the "general price level" drops 33⅓ per cent, that steel pieces are unchanged, and that wheat prices drop 66⅔ per cent. According to this view, *if* the monetary situation had held the "general price level" unchanged, steel would have risen by 50 per cent and wheat would have fallen by 50 per cent.)

The job assigned to index numbers was to measure the "objective mean variation of prices"—the supposed common element in all price changes. In this view, the problem of measuring price-level changes is logically much the same as the problem of measuring physical magnitudes—for example, the "acceleration of gravity." However carefully done, apparently identical physical experiments yield somewhat different results; the correct answer is estimated by taking the results only of careful and well-equipped experimenters, correcting for the "personal equation" of the observers, and averaging the corrected figures. The more observations of good quality are included, the better the estimate.

Applying the same rules to index numbers of prices would lead to just the methods accepted in the nineteenth century. That is, only prices representing well-ascertained open-market quotations on commodities of clear-cut specifications (such as prices of grains, fibers, and metals) would be included, but as many such prices as possible. The change in each price would then be expressed by taking the price for the date under study as a percentage of the price for a "base date," and the resulting percentages would be averaged. The average of the percentages would then be taken to represent the desired "objective mean variation."[6] Because wholesale price quotations were the most reliable which

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[6] A further corollary of applying the "theory of error" used in physical and astronomical estimates is averaging by use of a "geometric mean"—that is to say, taking the average of the logarithms of the "price relatives" for individual commodities as the logarithm of the index number—which was recommended by such nineteenth-century economists as W. S. Jevons.

To illustrate, if an index number were to be constructed on these principles from the quotations for a few of the commodities priced for the Bureau of Labor Statistics, representing wholesale prices in 1932 as compared with 1929, the calculations would run as follows:

economists could get, indexes of wholesale prices were believed to measure the "general price level."

Economists have come to be more and more interested in measuring the effects of price changes on the position of *specific groups of people.*[7] We now think of index numbers as measuring changes in the money value of "baskets of commodities and services" of unchanging physical composition. Each "basket" represents the sort of thing that a specific group of individuals or businesses buys, or the sort of thing they sell. Examples are the "index of consumers' prices" (alias "cost-of-living index") and the indexes of prices paid by farmers and prices received by farmers. In computing such index numbers, the cost of a "market basket" of goods is calculated for each date and reduced to a percentage of the cost of the basket at a base date.[8] The official United States Bureau of Labor Statistics wholesale price index is also calculated in this

Footnote 6 continued:

Commodity	Unit	Average Prices		1932 % of 1929	Logarithm of Percentages
		1929	1932		
Wheat, no. 2 hard, Kansas City	Bushel	$1.180	0.494	41.86	1.6218
Wool, Ohio, medium grades, Boston	Pound	.467	.196	41.98	1.6230
Butter, creamery, extra, N. Y.	Pound	.449	.210	46.78	1.6700
Shoes, men's, black calf, lace, oxford	Pair	3.467	3.092	87.30	1.9504
Coal, bituminous, mine run	Ton	3.953	3.638	92.04	1.9640
Oak, plain, white, no. 1, Cinn.	1000 ft.	57.623	41.635	72.25	1.8588
Ammonia, anhydrous, N. Y.	Pound	.140	.155	113.30	2.0542
Paper, wrapping, manila, no. 1, jute, N. Y.	100 lbs.	9.125	9.125	100.00	2.0000
Mean of Logarithms					1.8428
Logarithmic-mean index, 1932 with 1929 = 100.				69.63	

[7] Or in measuring the extent to which price changes "inflate" changes in national income, or receipts of farmers from marketings—or other money flows for which we may wish to measure "physical-volume" change in the economic system. In terms of the type of index number required, this comes to much the same thing.

[8] The food price component of the Bureau of Labor Statistics cost-of-living index was for many years released to the press in terms of the amount in dollars and cents required to buy a basket of food containing a stated number of bottles of milk, pounds of round steak, and so forth.

way; but since the basket of goods included is a mixture of things that manufacturers sell, things manufacturers buy, things farmers sell, things farmers buy, and so forth, we cannot say whether a rise in this index is good news or bad to anybody in particular.

Relative Price Changes Caused by Price Stability of Near-Moneys. As the shift in index-number theory and practice suggests, the "objective mean variation of prices" looks less interesting than it once did. This change has occurred partly because short-run problems look more important than they used to. Besides, study shows that what matters about "general" changes in prices is that they are not truly general—and cannot be so, since a change of price level necessitates changes in relative prices.

If all prices did actually change in proportion—say, to double what they would otherwise have been—then everybody's income would be doubled.[9] By doubling his outgo, everybody could buy just what he did before; everybody's property would be doubled; and the "real" situation would be unaffected. But this simply cannot happen in real life. Part of people's property is held in claims stated in the unit of account—money and near-moneys. When prices change, the nominal value of such claims will not change in proportion. Thus, a doubling of "general" prices impoverishes people whose cash holdings and other fixed-value claims are important relative to their income and to their other assets, relative to people for whom such holdings are unimportant.

True, some debt claims do have prices which can vary somewhat. Government bonds, for example, are bought and sold on the Stock Exchange, and not always at the same price. But these prices have a much narrower range than (say) those of food or real estate. It is very rare for a $1000 government bond to sell for as little as $900 or as much as $1100. Most near-moneys have still narrower price ranges. Thus, this price flexibility is too small to enable these claims to keep pace with sharp "general" movements of prices. Moreover, the movement of these prices is often inverse to that of commodity prices.[10]

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[9] The effect would not be very different from that of passing a law to change the unit of account. Such a law might provide that instead of dollars we should all reckon in pesos, and that a peso should be the same as a half-dollar.

[10] The reason is that rising commodity prices often are linked with high interest rates, which push down bond prices. Another way to put it is that on a rising commodity market the bondholder is better off to sell his $1000 bond for (say)

The very fact that near-moneys which are debt claims have stable prices creates instability for property against which debt claims are outstanding. Suppose that an apartment house worth $100,000 is mortgaged for $50,000. Then the *equity* (or the value of the owner's claim after allowing for the claim of the mortgage-holder) will change by the full amount of any change in the value of the building. If a "general price increase" raises the level of rents that can be charged and thus raises the value of the building by (say) one-fourth, to $125,000, the equity is raised one-half (from $50,000 to $75,000). In the reverse case, a drop of one-fourth in the value of the building will cut the equity in half. Ownership subject to such a debt is described in financial slang as having "leverage" which magnifies the percentage change in the value of the property. "Leverage" is the automatic counterpart of private debt; the stability of the nominal value of the creditor's claim is reflected in heightened instability of the nominal value of the debtor's equity. In this way instability is introduced into the so-called "real" value of the claims—that is, their value expressed in commodities. When our apartment house is worth $100,000, the equity-owner effectively owns half of it; if the value goes up to $125,000, he owns three-fifths of it; if the value drops to $75,000, he owns one-third of it. Stock in corporations with bonded debt also has "leverage," and prices of such shares will tend to outpace "general" price movements.

This change in the proportionate value of claims expressed by debts and equities sometimes goes to extremes. If the value of the property drops below the value of the debt claims which it secures, the equity is "wiped out." If the debt falls due at such a moment (unless the debtor has other property and sells off some of it to pay his debt), the creditor can "foreclose." That is, he can demand that the property be sold and the proceeds applied toward the debt. Since the creditor receives the proceeds of the foreclosure sale, he can, if he wishes, take over ownership of the property by bidding (and paying to himself) a higher price than anyone else will offer, up to the amount of the debt.

$900 and buy goods which will be worth $1050 a year hence than to hold his bond and have a $1000 bond plus a $30 "coupon" for interest a year hence. He can afford to sell his bond cheaper as prospects for future commodity prices grow more rosy. But if he held commodities, the same rosy prospects would *raise* the minimum price at which he could sell them now.

Another result of debt is a shift of incomes when prices change —again illustrating how "general price level changes" are not truly general. A creditor expects to draw some income from interest payable to him by the debtor.[11] Another way of putting this is to say that from time to time small debts (interest coupons) bud off from the main debt. If a rise of prices reduces the commodity value of a dollar, this applies as much to the value of these small debts as to the value of the principal; thus, with rising prices the proportion of all incomes made up by interest is bound to fall. With falling prices, on the other hand, the interest proportion rises. Such shifts sometimes go quite rapidly. Thus, the $6.5 billion of interest paid in the United States in 1929 amounted to 7.4 per cent of national income; the $5.4 billion paid in 1932, to 13.0 per cent; the $4.4 billion paid in 1937, to 5.9 per cent.

Relative Price Changes Caused by "Price Rigidity." Debt contracts are not the only reason why "general price changes" fail to be truly general. There are a number of other forces which make it hard for particular prices to follow the general level —adding up to "price rigidity."

The whole economics of monopoly, of collective wage bargaining, and of several other fields would have to be called in to give a full explanation. The main factors involved may be listed as follows:

1. Payments fixed by contract for some time ahead, but not regarded ordinarily as debts, such as payments of house rent under a lease.
2. Prices fixed in advance although it is uncertain how much will be bought or sold, such as wage rates under a contract between a union and an employer.

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[11] For most purposes, what is important is the number of dollars per annum which debtors have promised to pay. In looking at the position of a particular creditor, however, it may be more appropriate to think of the "yield" of the debt claims payable to him. As we saw above (note 2), a debt claim may not be valued at the face value of its "principal" even though repayment is considered certain. If the debt in question is a 3 per cent bond of $1000 face value, due three years hence, and selling "at 97" (that is, for a price of $970), the investor of $970 receives $30 a year later, plus $30 two years later, plus $1030 three years later. This is nearly the same as receiving $40 one year later, plus $40 two years later, plus $1040 three years later, *on a $1000 investment;* that is, the "yield" on the $970 is nearer 4 per cent per year than 3 per cent.

3. Prices "regulated" by government agencies and subject to change only after prolonged proceedings, such as gas and electric rates and railway rates.

4. Prices fixed by legislation (silver; some farm prices; minimum wages).

5. Prices "administered" by formal or informal combinations of businessmen or workers, changes in which are held back by fears of "price wars" or difficulties in keeping in step in case of a change.

6. Prices which are "conventional," such as doctors' fees for office visits, haircuts, shoe-shines, and newsstand prices of papers and magazines.

The list is itself enough to show that important groups of prices are incapable of changing quickly and smoothly with "general" movements. Once such prices do change, furthermore, they are likely to do so by rather large jumps. In fact, it is hard to think of any important groups of prices which changed quickly and smoothly in the later interwar years except farm and food prices, prices of stock exchange securities, and a few classes of wage rates.

At a later stage of analysis (see Chapter X), we have to study these price-making forces as independent factors in setting the price level. But for the next few chapters it is safe for us to look at them simply as causes of "rigidity," and therefore as barriers to the kind of "general" price fluctuation that economists used to talk about.

Changes in Business Volume under Price Rigidity. Once the rigidity of prices is recognized, a further fact comes to the surface. There is no doubt that expenditures can and do rise and fall. Where supplies are inflexible and prices flexible (as has traditionally been the case with food), expenditure fluctuations become price fluctuations. But where prices are rigid, expenditure fluctuations become fluctuations of the volume of goods and services sold. A "deflationary" process in which expenditures fall off thus combines a fall of such prices as are flexible with a fall of sales, production, and employment. An "inflationary" process in which expenditures rise raises the volume of sales, production, and employment insofar as more is available for sale at the rigid prices.

What used to be described as monetary forces working on the

price level thus prove to be also: (1) forces which bring about shifts in relative prices, in ownership of wealth, and in relative claims to income; (2) forces which alter the level of production and employment. In the minds of most present-day economists, these aspects of the monetary problem outweigh concern with the price level as such.

— *Chapter V* —

FOUR WAYS TO LOOK AT MONEY

Alternative Approaches. Four different lines of approach to money have been tried by economists. They may be labeled:

1. The commodity approach.
2. The transactions-velocity approach.
3. The payments approach.
4. The cash-balances approach.

Each of these ways of looking at money has sense in it. As I see things, the commodity approach and the transactions-velocity approach are not so useful as they once looked; but we still cannot afford to overlook them. The payments approach and cash-balances approach are both essential for anybody who aims to understand business fluctuations.

The *commodity approach* starts by thinking of money as the "ghost of gold." It argues that the value of money is determined *through* the value of gold; it takes the value of gold to be determined much like that of any other commodity. This approach is analyzed later in this chapter.

The *transactions-velocity approach* starts from the notion of a *stock* of money (or "means of payment") which "turns over" a measurable number of times per annum as it circulates. The payments it makes are the "transactions." The average number of times it turns over is the "velocity." Chapter VI discusses this approach.

The *payments approach,* like the transactions-velocity approach, focuses attention on spending. But it looks at *spending out of receipts* rather than *spending out of balances;* and it goes into the relations of spending to saving. Chapter VII discusses this approach.

The *cash-balances approach* starts from the fact that every dollar must have an owner, and asks why he chooses to be its owner. It gives us sidelights on the questions raised by the payments approach. In particular, it tells us more about *investment*. Chapter VIII discusses this approach.

The Commodity Approach. Unlike the other three approaches, each of which will have a chapter to itself, the commodity approach can be dealt with quite briefly. Two forms may be recognized. To give them tags, call them "pure" and "revised."

In its "pure" form, the commodity theory tries to treat money as just another commodity. It views money as an aspect of gold. The value of gold is then explained as made on a market in much the same way as (say) the value of copper; this value is *transmitted* to the monetary unit.[1]

This view would be all right if we could suppose that non-monetary uses of gold completely overshadowed its monetary uses. But facts are otherwise. Monetary stocks of gold have long been much larger than non-monetary stocks. Furthermore, monetary stocks have amounted to a number of years' gold production. If the monetary demand for gold collapsed, an ounce of gold would be much cheaper compared with other commodities; the market for tooth-fillings, decoration, electrical uses of gold, and so forth, could not absorb the gold stock for decades. The demand for gold is different from the demand for other commodities *because* gold is linked with money. There is no use pretending that the value of gold in non-monetary uses dominates the money situation.[2]

The "revised" form of the commodity theory does not insist that the demand for gold has to be just like that for any other commodity. But it sticks to the point of view that money is essentially gold (or, if not redeemable, its "ghost"), with the whole "superstructure" of paper money, bank credits, and so forth, merely incidental. The market for gold, in this view, still sets a value for gold which is transmitted to money. Commodities are

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[1] For this point of view, see J. Lawrence Laughlin, *Principles of Money* (New York: Scribner, 1903), Chapters 1, 8–9, and 11.

[2] Conceivably there may have been a time, in the dawn of history, when gold-as-money took over a value from gold-as-commodity. But there is strong evidence that gold has been "treasure" (that is, a form of wealth with an aura of glory about it) for thousands of years. Thus, gold probably differed greatly from other commodities before there *was* money.

thought of as having *gold prices*—which are translated into money prices. The less gold there is in the dollar, the higher is the money price of a commodity which corresponds to a given gold price.[3]

In this less extreme form, the commodity theory helps interpret some phases of economic history. As I mentioned in the Introduction, there have sometimes been two units of account in a country simultaneously—one linked to gold and the other to local currency. If the gold unit was central in the thinking and accounting of business, this form of the commodity theory applied.

In short, facts *can be* as the revised commodity theory assumes; sometimes they *have been.* But in the modern world the facts *aren't* like that. People do not actually value goods and services in gold and translate their valuations into dollars. On the contrary, people value goods and services in dollars and translate valuations into gold—that is, *if* they have any use for gold values, which they rarely do. This may be seen from the history of the "devaluation" of 1933–1934 in the United States. On the commodity theory, when gold went up by government action from $20.67 to $35.00 per ounce, valuations in dollars ought to have gone up in proportion (that is, by about 75 per cent). But it never occurred to businessmen who fixed prices on a "cost-plus" basis to revise their cost figures. Prices fixed in contracts remained fixed. Doctors went on making their usual charge for office calls. Insofar as the devaluation raised prices, it did so by raising the dollar price of *foreign currency units* tied to gold and thus changing markets for goods entering foreign trade.

Salvage from the Commodity Theory. Linkage of money to a commodity, gold, retains some importance because gold enters the "reserves" of the monetary system. The production of gold (and, to a less extent, of silver) has to be watched; and so do international movements of money metals.

Several times in history, production of gold has been so low as to handicap expansion of the public's stock of cash to finance the growth of business. The long price declines of 1815–1849 and

[3] This view is essentially that of the late Professor Warren, of Cornell (see G. F. Warren and F. A. Pearson, *Prices.* New York: Wiley, 1933), whose advice to President Roosevelt apparently had a strong influence on the "devaluation" of the dollar in 1933–1934. Similar views seem to underlie much of the analysis of the late Gustav Cassel.

1865–1896 are believed to have resulted from gold shortage. Some analysts think that gold shortage explained the depressed conditions in several countries during the 1920's and in most during the 1930's.

On the other hand, high production of gold under a gold-based currency—or the introduction of silver into monetary reserves—can ease the monetary situation and permit expansion to replace deflation. It is no accident that big "gold strikes" (like those of 1849 in California and Australia and those of the 1890's in South Africa and the Yukon) have often come close to the turn from periods of declining prices and sluggish business to periods of rising prices and active business.

Under the present monetary structure, described for the United States in Part I above, gold shortage is no longer dangerous. With our present margin of gold reserves over legal requirements (and with the increasing willingness of Congress to change legal requirements), there is no danger that lack of gold will prevent monetary expansion when it is wanted. If anything, the shoe is on the other foot: lack of restraints from gold may make monetary expansion too easy.

Probably the chief present importance of tying gold to money is the income of gold producers. Mining gold (or silver) to sell to the government is one way to get an income, just like mining copper to sell to General Electric. But sale of gold or silver to the government which creates a guaranteed market for all that is produced does not absorb any of the spending power of households or firms; it is paid for, not by increased taxes, but by printing gold or silver certificates. This fact makes it an inflationary force. Looking at the world as a whole, the chief importance of gold is that this process creates much of the income of South Africa, northern Canada, and parts of the mountain states—and a slice of the income of Russia. Gold as a factor in international currency dealings is discussed in Chapter XVI.

Plan of Part II. As I explained in Chapter IV, the money problem has been shifting its focus. From a study of relations of money to price levels, it has moved to a study of relations of money to employment (with price problems still there, but in the background). From a study of "long-run equilibrium," it has moved toward a study of dynamic processes.

The order in which I discuss the four approaches to money shows this shift of emphasis. The commodity theory, for what it is worth, is chiefly a theory of the "value of money" (that is, the price level). The transactions-velocity approach, which comes next, is at its best in study of long-run price-level problems. It brings in short-run problems by the back door, and is clumsy for handling them. The payments approach, in Chapter VII, takes us over from the price-level problem to the employment problem. But it is still an attempt to solve all problems by "static" analysis, and cannot readily handle problems of uncertainty or problems of the actual process of change. The cash-balances approach, in Chapter VIII, brings uncertainty into the picture and gives clews to the motives behind "investment" in new buildings, machinery, and so forth.

Chapters IX and X make a beginning at the study of monetary dynamics.[4] Chapter IX deals with expectations of businessmen and consumers, the ways in which experience goes counter to expectations ("surprises"), and the effect of surprises on what people decide to do next. Chapter X reopens the price-level question, considers non-monetary forces which work on the price level, and tries to weave their influence in with that of money. It also summarizes the theory of investment in more dynamic terms.

* * *

Note on Alternative Points of View and Supplementary Readings

For fairly recent statements of the commodity theory, see:

G. F. Warren and F. A. Pearson, *Prices* (New York: Wiley, 1933), Chapters 4–5; and

G. Cassel, *Theory of Social Economy* (New York: Harcourt Brace, 1932), Chapter XI.

[4] Let me emphasize that this beginning at "dynamics" is rather primitive. In my judgment, not much more is ripe for presentation in a book like this. Ten years from now, if professional discussion follows recent lines, we should be able to do much better. Meanwhile, I venture that the policy argument of Part V, if closely analyzed, would reveal a number of assumptions which ought to be confirmed or rejected by dynamic theoretical analysis. My feeling is that we know more about dynamics than we have been able to codify, and that the intuitions which have gone into Part V will largely be validated.

— *Chapter VI* —

THE TRANSACTIONS-VELOCITY APPROACH

Introduction. When you buy things, you have to pay for them. Money pays for things. The transactions-velocity approach starts out from these simple facts; it looks at money as *means of payment.*

When we say that "money pays for things," we have to look out for a pitfall, however. As I pointed out in the Introduction, a buyer of goods usually *goes in debt* to the seller. When the buyer settles his debt, he usually pays by check—that is, by putting his banker in debt to the seller. To be strictly accurate, we ought to say: Money can pay for things and sometimes does; but generally we pay for things with *debt.*

The transactions-velocity approach has a trick for avoiding this pitfall. It labels payment of the buyer's debt as "deferred payment" for the goods he bought. Then it goes on as if all payments were alike—all "spot cash"—and calls them all "transactions." At the same time, transactions-velocity theorists broaden the meaning of "money." They talk of *pocketbook money* and *checkbook money,* and add the two together. *Quantity of means of payment,* thus, means to them people's total holdings of:

$$\text{Money} \left\{ \begin{matrix} \text{Coin} \\ + \\ \text{Paper Money} \end{matrix} \right. + \text{Bank Deposits Subject to Check}$$

The debt difficulty is disposed of, then, by recognizing checking deposits as part of the quantity of means of payment, and by refusing to worry about the fact that most goods are bought on credit.[1]

This way of looking at things has the advantage of connecting

[1] Transactions-velocity theorists often bring in the use of "book credit," however, as an influence on "velocity of circulation"; see p. 165.

money directly with the flow of business. A few years ago, most American economists preferred the transactions-velocity approach to any other way of thinking about money. Since about 1930, difficulties have piled up. In particular, the notion of "velocity" (which we will look at shortly) has proved to hide more mysteries than it explains. Therefore, many present-day monetary theorists prefer other approaches. But the transactions-velocity approach still makes a good starting-point. While it doesn't take us as far as we could wish, it makes sense as far as it goes. Many able writers on money, business fluctuations, and foreign trade use transactions-velocity terms. The very weaknesses of this approach, moreover, make it worth studying; they explain why we have developed other approaches.

"Circulation" of Money and Checking Deposits: "Velocity." When you *use* money in a transaction, you don't *use it up.* As soon as it has bought one piece of goods, a dollar of paper money or a dollar of bank deposits is ready to buy something else. Money and checking deposits "circulate" in a way that other things don't —a striking fact on which both professional economists and "cranks" base much of their thinking.

To put this peculiarity of money and checking deposits in clear relief, think of the non-money side of the "transaction"—the goods and services which are paid for. Services can never be exchanged a second time. Physical goods *can* be exchanged again. But normally the object of buying goods would be lost if they were sold again immediately. Ordinarily the buyer wants the goods he buys *for use.* Perhaps they are for household consumption. Perhaps they are materials for a factory. Even if the buyer is a retailer who does not aim to process goods and change their physical form, he combines them with services; thus, economically speaking, they cease to be the same goods. Most transactions are on *one-way markets,* where buyers and sellers are different kinds of people. Buyers on one-way markets do not come back to the same markets to sell the same goods. *Two-way markets* do exist, on which buyers and sellers are the same sort of people, and on which the same pieces of goods come back over and over again. The stock exchange and the real estate market are like this; and stocks and real estate may be thought of as "circulating" much like money. But most goods and services have one-way markets and do not circulate.

The dollar volume of transactions is the total price of the goods and services bought—the unit price of each type of goods multiplied by the number of units. A given dollar volume might be financed either by a large stock of money circulating slowly, or by a small stock of money circulating rapidly. Some individual pieces of money circulate more rapidly than others—nickels, for example, faster than $20 bills. We could imagine tracing the movements of individual pieces of money (say, by putting a tag on each piece on January 1, asking each successive owner to put his name on the tag, and collecting all the tags on December 31). These tags would show that a few pieces had stayed in the same hands all year, a few had changed hands only once, more had changed hands twice, and so on, up to a few which changed hands hundreds of times during the year. An average rapidity of circulation could be found by averaging the number of names on the tags.

The root notion of "velocity of circulation" is quite well expressed by this sort of average rapidity. However, we have to deal not only with payments in coin and paper money, but also with check payments—which are much larger in amount. But there are no "pieces" of bank accounts that we could imagine tying tags to. Bank deposits circulate in the form of checks drawn fresh for each transaction—each check being a reincarnation of deposits embodied in a previous check.[2]

In this situation, the natural way to define velocity of circulation is as the ratio of dollar transactions to the stock of means of payment—coin, paper money, and checking deposits.[3] But this solution is not so simple as it sounds, because of the looseness of the term "transactions."

(A) Some velocity calculations have measured velocity by the ratio of "bank debits" to means of payment. A "debit" is the entry which the bank makes on your bank statement when it pays one of your checks. This is a very convenient form of measure-

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[2] Usually the proceeds of one check cannot be traced into specific checks of later date. But if a person starts a bank account by the deposit of a single check (obtained, say, by a "transaction" by which he sells a month's work and gets a month's salary), he is plainly using the same funds over again when he draws checks to pay his bills.

[3] Sometimes total "cash" (including time deposits, as well as coin, paper money, and checking deposits) is taken as denominator of the velocity fraction.

In the other direction, separate velocities for checking deposits and for coin and paper money are sometimes used in analysis. This plan implies separate measurement of "transactions" settled in each form.

ment statistically.[4] But "debits" do not directly measure payments for goods and services. They include many purely "financial" items—including remittances between branches of the same firm, duplicate payments [5] in connection with security and real estate dealings, checks cashed, and so forth. The dollar amount of debits is so much above the dollar volume of known sales of goods and services that we can only rub our eyes and assume that most of the "transactions" recorded by debits are fictitious. In 1929, for example, recorded debits were about $1.3 *trillion* dollars —well over 10 times "gross national product."

(B) Some velocity calculations try to measure transactions by dollar sales of everything sold—including dealings in permanent physical assets and securities, speculative dealings in farm products, and so forth, as well as dealings connected with current production. Noncurrent transactions, however, are hard to measure.

(C) Somewhat closer to solid statistical and analytical ground, some calculations try to measure "transactions" as the sum of all dealings related to current output of goods and services—including materials, and so forth, whose products are also coming on the market. Good figures for this sort of calculation are being compiled for a few years by the "Money Flows Study" being carried on by Dr. M. A. Copeland at the Federal Reserve Board.

(D) Some calculations take as the best measure of "transactions" the "gross national product"—that is, the value of goods and services bought by consumers and government plus equipment, buildings, and so forth, bought by business, plus net additions to inventories and claims on foreign countries.[6] Some take a narrower concept—"national income."

(E) For long-period velocity estimates, we have to depend on bank "clearings"—that is, figures on such checks as happen to come home to the bank on which they are drawn through an organized clearinghouse—rather than over the counter or through a correspondent bank. For somewhat mysterious reasons, this

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[4] A bank's bookkeeping involves totaling debits daily, so that the Federal Reserve has been able to collect figures for weekly debits at banks in a large number of cities for years—in some cities as far back as 1919—without having to call on the banks for a special effort in compiling figures.

[5] From the buyer A to his broker B; from broker B to the seller's broker C; from broker C to the seller D.

[6] The "netness" of expenditures on inter-firm transfers of goods and on foreign goods is a drawback for measurement of "velocity"; but we have a longer series of figures on this basis than on the more inclusive basis (C).

series seems to register the actual dollar flow of business prior to World War I much better than the more inclusive "debits" series for the interwar period.[7]

The economic meaning of propositions about "velocity" and "transactions" obviously depends on which concept is used. Older theoretical discussions run on basis (B)—but with statistics on basis (E). More recent discussions tend to run in terms of "income velocity," with concepts and statistics on basis (D).

The Equation of Exchange. The central core of the transactions-velocity approach is Irving Fisher's "equation of exchange": [8]

$$MV = PT.$$

M is the stock of means of payment, V its velocity of circulation, P the price level (relative to some base date), and T an index of the *physical volume* of transactions.[9] As was noted above, there are options as to which dealings we choose to call "transactions"; and the price level represented by P in the equation must be interpreted as the price level of the goods and services entering into those transactions.[10]

This equation, it should be stressed, is a statement about *definitions* of M, V, P, and T. If they are appropriately defined, the equation is necessarily true.[11] It is not a finding about statistically determined facts. Its importance in relation to facts is chiefly in enabling us to locate some errors about them: a finding of fact which seems to contradict the equation must contain some inconsistency of definition or some error of measurement, or both.

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[7] New York City clearings are heavily weighted by financial transactions. But "outside" clearings, when deflated for changes in the price level, behave rather like indices of physical output before 1914, while "outside debits" deflated behave very differently in the interwar period.

[8] Irving Fisher, *Purchasing Power of Money* (New York: Macmillan, 1911), pp. 26–27. If a separate velocity is set up for checking deposits, the equation runs $MV + M'V' = PT$, when M and V refer to coin and paper money outside banks, M' and V' to checking deposits. *Ibid.*, p. 53.

[9] Commonly such an index tries to measure the value of each year's quantity of goods and services exchanged at the prices of an agreed year. This index and the price index have to be so defined that when they are multiplied together we have an accurate measure of the *dollar volume* (physical volume times current prices) of transactions.

[10] The difficulty of including remittances, and so forth, is partly that they have no price level.

[11] If the facts yielded *independent and only approximately correct measures* of the four magnitudes separately, we should find the equation only approximately true of these measures. But for practical reasons cited above, an independent measure of velocity is out of the question. Velocity has to be both defined and measured so as to make the equation a truism.

The equation of exchange can also take other forms, and, as we shall see later, some of them are more useful. At bottom, it is only a statement that *the same dollar payments may be looked at from different points of view* (for example, as outpayments of buyers and receipts of sellers), *but have to add up to the same total* whichever way we look at them.

The Quantity Theory from the Transactions Standpoint. The equation of exchange is not the quantity theory of money. You can accept the equation and deny the quantity theory. For example, you could contend that in the real world price changes *cause* proportional changes in money, without having any reservations at all about the equation.

Besides accepting the equation of exchange, one who accepts the quantity theory of money must also assert:

1. That differences in M will not induce inverse differences in V (for, if they did, they might leave MV unchanged or changed in the opposite direction);
2. That differences in M will not induce parallel differences in T;
3. That differences in P are not somehow brought about by non-monetary sources in a way which will induce parallel differences in M or V or inverse differences in T; and
4. That differences in M are not overshadowed by differences in V or T as causes of differences in P.

To hold the quantity theory in the strictest sense would require going still further and asserting:

5. That V and T can be regarded as constants (perhaps with a simple trend in time); and
6. That P is incapable of influencing M, V, or T.

Careful "quantity theorists" have always allowed for exceptions to these propositions for the short run. The classical statement of the quantity theory by Irving Fisher, for example, has a whole chapter [12] on "disturbance of the equation and of purchasing power during transition periods." This chapter in Fisher argues that in "transition periods," when prices are rising or falling in response to monetary changes, forces outside the quantity theory are at work. In particular, rising prices generate a demand for bank loans which will expand deposits—a case of prices affect-

[12] *Purchasing Power of Money* (New York: Macmillan, 1911), Chapter IV, pp. 55–73.

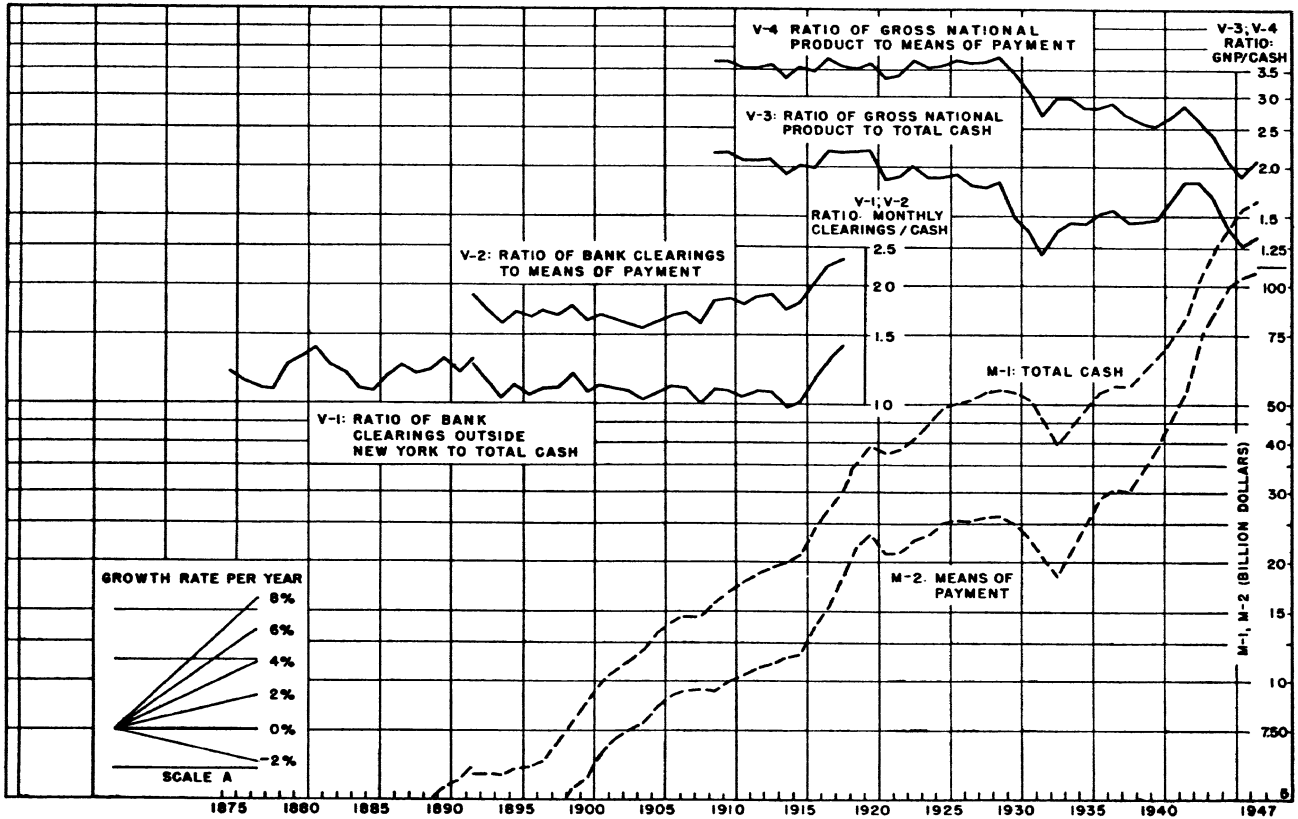


FIG. 3. "VELOCITY" AND SUPPLY OF CASH, 1875–1947.

ing M. Depreciation of money in real purchasing power will incline holders to "get rid of it as fast as possible" and increase V. T may also increase, since prices "have to be pushed up, so to speak, by increased purchases." But bank reserves limit the extent to which prices can expand M; and effects on V and on T are presented as likely to wear off quickly, once prices have ceased to move in response to increased M and V. The same argument is paralleled for downswings of M and P.[13]

The quantity theory is, thus, a long-run view. The proportional effect upon price levels of a difference in the stock of means of payment is expected to take hold only after the lapse of a "transition period," which may run into years.

The Instability of Velocity. The usefulness of this approach to money plainly turns largely on "velocity of circulation." If after a disturbance V snaps back rather quickly to a normal level, then changes in M will exert strong pressure on P (and—along lines sketched in Chapter IV—also on T). On the other hand, if V shows a more complex reaction-pattern, we have to go further to gauge the effect of monetary changes.

In the classical statement, the list of factors[14] which affect V is so framed as to suggest a great deal of stability. Fisher[15] lists:

1. *Habits of the individual.*
   (a) As to thrift and hoarding.
   (b) As to book credit.
   (c) As to the use of checks.
2. *Systems of payments in the community.*
   (a) As to frequency of receipts and disbursements.
   (b) As to regularity of receipts and disbursements.
   (c) As to correspondence between times and amounts of receipts and disbursements.
3. *General causes.*

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[13] *Ibid.*, pp. 67 ff. As a gauge of the change in professional attitudes, note: (*a*) the lack of explicit reference to unemployment in Fisher's account of the downswing; (*b*) his assertion (p. 62), in analyzing the "unhealthy increase in trade" on the upswing, that "the amount of trade is dependent, almost entirely, on other things than the quantity of currency, so that an increase of currency cannot, even temporarily, very greatly increase trade." This statement (quoted with the permission of the estate of the late Professor Fisher) implies that the upswing starts from prosperity rather than from a state of unemployment.

[14] Excluding transition effects of rising or falling prices.

[15] Irving Fisher, *Purchasing Power of Money* (New York: Macmillan, rev. ed., 1926), p. 79. Quoted with the permission of the estate of the late Professor Fisher.

(a) Density of population.
(b) Rapidity of transportation.

These sound like things that will change slowly and predictably. A possible exception is item 1 (a); but being only one of eight, this is not apt to disconcert the reader of the list.

Statistics of velocity—all more or less unsatisfactory—are spread out in Figure 3. Curves V-1 and V-2 are based on bank clearings,[16] which, as we saw above, are not an ideal measure of "transactions." Curve V-1 treats as "money" the total cash assets of the nonbank public, for which fair estimates can be made back to 1875.[17] It shows a good deal of stability—if anything, with a declining trend—during 1875–1915; the rise in 1916–1918 can be explained as a "transitional" effect of the very rapid growth of cash assets during World War I. Curve V-2 treats as money only coin and paper money plus checking deposits, for which we have estimates beginning in 1892.[18] If we treat the 1916–1918 rise as "transitional," there is no clear trend.

From 1909 onward, we have Department of Commerce estimates of "gross national product," [19] which is closer to an actual measure of "transactions." If we stick to a velocity using "means of payment" (coin and paper money plus checking deposits) as denominator, we find Curve V-4, with a relatively level velocity in 1909–1929 and a sharp fall thereafter. If we take total cash as denominator (Curve V-3), a case can be made out for a downtrend

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[16] I am using clearings outside New York as estimated by F. R. Macaulay in *Bond Yields, Interest Rates, Stock Prices* (New York: National Bureau of Economic Research, 1938), Table 27, column 3 (pp. A255 ff.).

[17] Total cash is curve M-1. Figures are per capita. For 1875–1892, I am using my own estimates of cash supply, based on National Bank figures, the post-Civil War tax data, and state reports published by the Comptroller of the Currency for banks other than national. Cf. footnote 13 on pp. 27–28. From 1892 onward I use Federal Reserve figures.

[18] This narrower series of "means of payment" (per capita) is curve M-2. Figures from Federal Reserve Board, *Banking and Monetary Statistics*, Washington, 1943, pp. 34–35, slightly adjusted, with the help of Federal Reserve and National Bureau of Economic Research figures, to approximate yearly average amounts instead of the June 30 figures which the Federal Reserve gives. From 1942 onward, figures from *Federal Reserve Bulletin*.

[19] GNP figures from 79th Congress, 1st Session, Senate Committee on Banking and Currency, Print No. 4: *Basic Facts on Employment and Production* (Washington, 1945), p. 12. I have taken account of the "statistical revision" for 1929–1946 in the National Income Supplement to *Survey of Current Business* (July 1947), but not of change in concept. Extension to 1947 of the old series is my estimate.

in velocity—interrupted during each of the World Wars by the growth in cash and the rise in prices.

These figures give us a choice of two interpretations:

1. The trend of "velocity" was roughly horizontal until 1929, but something happened to turn it down after that; *or*
2. Velocity had a downward trend throughout, but something happened to hold it above trend in both war periods and perhaps also in the 1920's.

On either interpretation, we have a puzzle. The Fisher list of factors explaining velocity is convincing enough if we have to deal with constant or gradually increasing velocity. But, except for item 1 (a), everything he lists would be expected to have a trend favorable to rising velocity. A *downward* trend (whether or not it started only in 1929) calls for a different brand of interpretation.

The quantity-velocity approach is not very well adapted for this reinterpretation. It is a rather mechanical type of analysis—not going into the motives of households or firms in handling their cash, but taking as focus a velocity ratio which is not part of anybody's thinking about his private affairs. Down to the Great Depression of the 1930's, the stability of velocity made this mechanical approach reasonable. But now that this stability has broken down, we are driven back to analysis of people's motives and plans; and this is more conveniently carried out in the framework of the payments approach and cash-balance approach.

* * *

Note on Alternative Points of View and Supplementary Reading

For the classical statement of the transactions-velocity approach, see Irving Fisher, *Purchasing Power of Money* (New York: Macmillan, new and rev. ed., 1926), especially Chapter VIII.

For a modern study framed in transactions-velocity terms, see J. W. Angell, *Behavior of Money* (New York: McGraw-Hill, 1936). Angell centers attention on "income velocity," however, and emphasizes the problems that arise from the slump in velocity after 1929. His point of view on velocity is brought more nearly up to date in his *Investment and Business Cycles* (New York: McGraw-Hill, 1941), Chapter IX, with statistics in Appendix II.

A forthcoming book by Clark Warburton also takes a transactions-velocity standpoint—taking a declining trend of "velocity" as natural.

— *Chapter VII* —

THE PAYMENTS APPROACH

What Do People Spend? In Chapter VI, we looked at households and business firms as spending their cash balances, and asked what determined how fast they spent them. But this approach is somewhat artificial. The ordinary holder of cash is not in the pathetic position of the hero of the popular war song, who had "sixpence, jolly, jolly sixpence, to last him all his life." Cash is flowing in as well as out. How much can be spent depends more on the rate of inflow than on the amount in hand—just as the working of an automobile's ignition, lights, heater, radio, and so forth, depends more on the generator than on the battery.

The payments approach presented in this chapter looks at people as spending *out of receipts* rather than out of balances. This approach was adopted in the 1920's by Foster and Catchings in the United States and by R. G. Hawtrey in England.[1] But present-day thinking along this line grows largely out of the work of the late J. M. Keynes; therefore, it is chiefly the Keynesian point of view which I discuss in this chapter. Chapter VIII brings in the cash holdings of households and firms as an influence on the relation of their spendings to their receipts. Chapter IX develops payments ideas further, in the light of the Swedish distinction between "ex ante and ex post" magnitudes (that is, income, sales, and so forth, *as expected* and *as experienced*).

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[1] See, for example, W. T. Foster and W. Catchings, *Business Without a Buyer* (Boston: Houghton Mifflin, 1927), and R. G. Hawtrey, *Currency and Credit* (London: 3rd ed., 1928).

Examples of similar thinking are readily found in writings of other countries and times. For example, Richard Cantillon (in 1755) analyzed the monetary effect of gold mining in payments terms; see the passage reprinted in A. E. Monroe, *Early Economic Thought* (Cambridge: Harvard University Press, 1924), especially pp. 264–266.

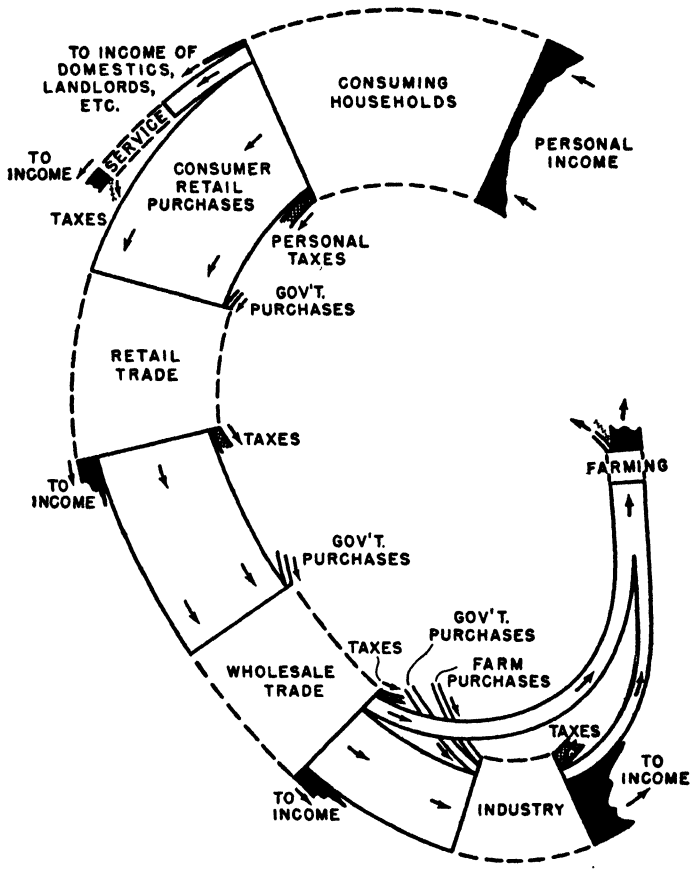


FIG. 4. DESTINATION OF CONSUMER EXPENDITURE

The Circuit of Payments. Thinking of the receipts of a household or firm as the source of its outpayments naturally raises the question of how far we can trace payments from A to B to C—regarding A's outpayments as the source of B's receipts, and thus indirectly as the source of B's outpayments, which constitute receipts for C. This suggests sketching a "wheel of payments" (or, in the language of Foster and Catchings, a *circuit flow* of money).

A convenient place to break into the circuit for analysis is the consuming household. (See Figure 4.) The household's receipts consist chiefly [2] of "personal income"—wages and salaries, divi-

[2] Since we are drawing a simplified sketch, we may leave out of account the household's receipts from borrowing, selling securities or real estate, and so forth. Complications which arise from such dealings will come into the discussion later.

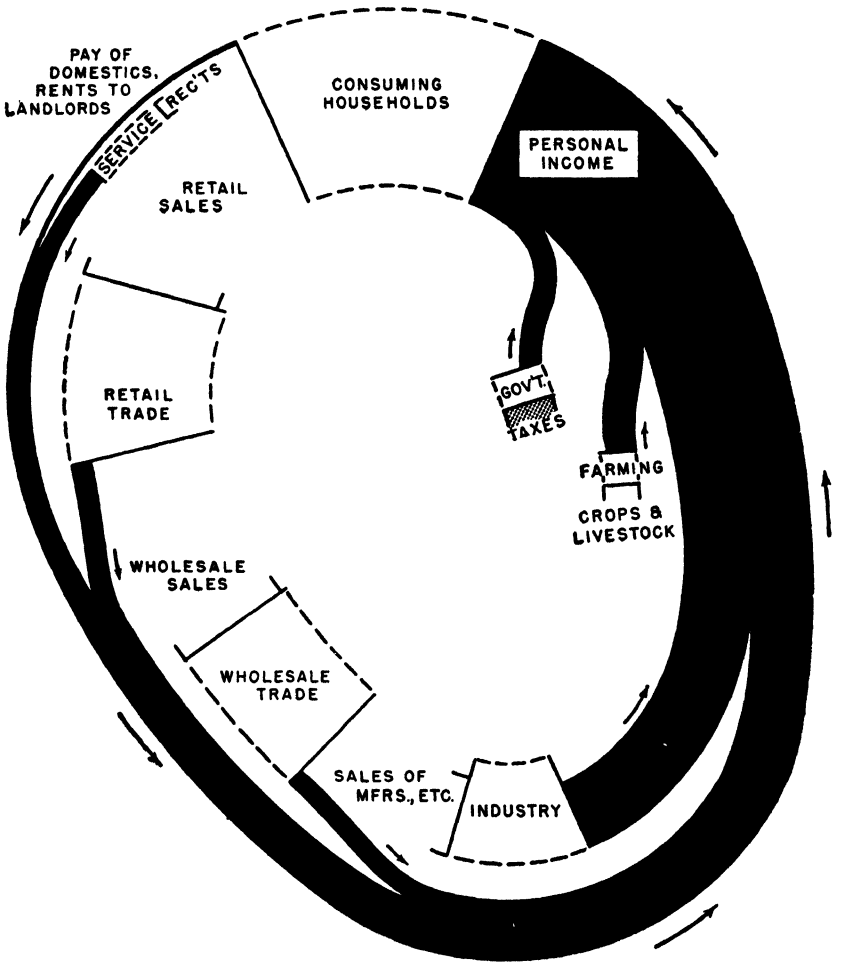


FIG. 5. SOURCES OF PERSONAL INCOME

dends and interest, profits withdrawn from unincorporated business, and so forth. Out of its receipts, the household makes outpayments—chiefly for the purchase of consumption goods and services and for taxes. The bulk of these outpayments become receipts for retail merchants.[3] The retailers, out of their receipts,

[3] A small proportion of consumer outlay goes directly into the income stream as pay for domestic servants, and so forth. Part goes for services (hire of rented houses; haircuts; electric power), and the landlords and firms in the service industry pay out income and taxes. They also buy supplies from retail and wholesale trade—creating a stream of trade receipts which is omitted for simplicity in the diagram.

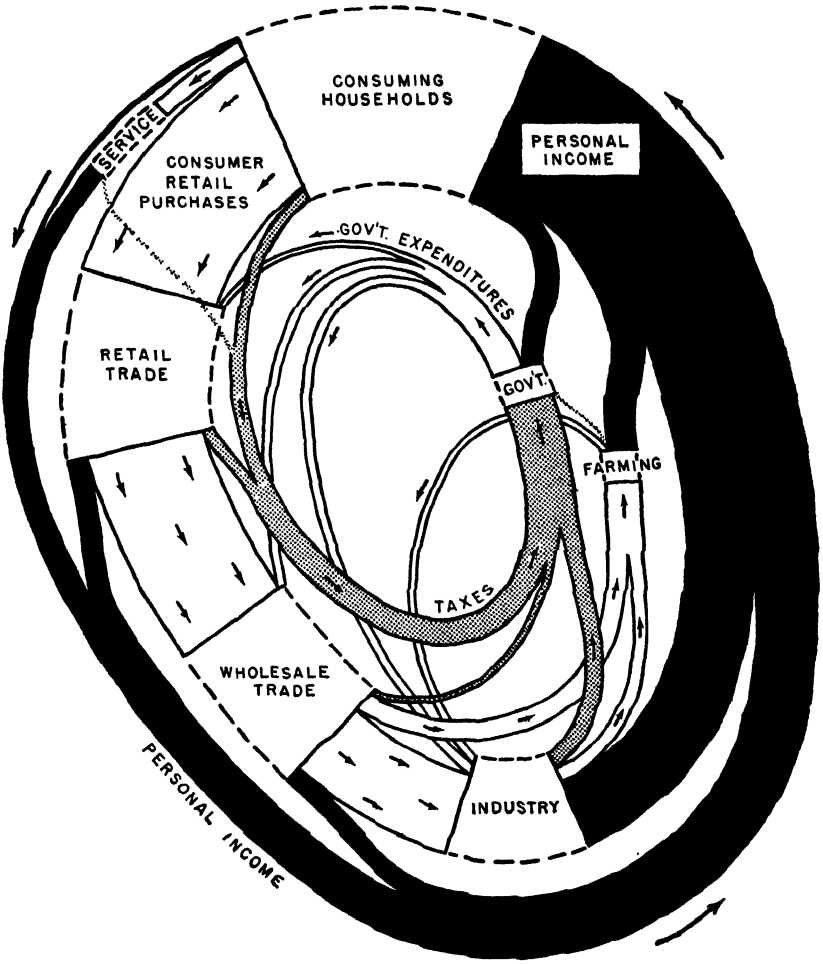


FIG. 6. THE CIRCUIT OF PAYMENTS

make some payments of wages, salaries, and personal income of other types and pay some taxes. The bulk of their outpayments, however, go to buy goods from wholesalers; and these purchases constitute the bulk of wholesalers' receipts.[4] Wholesalers, again, make some personal income payments and pay some taxes; but the bulk of their outpayments are for the purpose of buying supplies. Here the stream splits: part of their purchases are farm

[4] The fact that some firms (such as the great chain groceries) combine retail and wholesale functions is simplified out of the picture. So are receipts of retail and wholesale trade from "industry."

products, acquired without substantial processing between the farm and the wholesale market; part are products of industry.[5] Industry, in turn, makes personal income payments and pays taxes, and buys goods from farms. Farming, finally, makes personal income payments, pays taxes, and buys goods from "industry," creating an eddy in the stream of payments.[6]

The image we get is of a stream of payments starting at the household and running to industry and farming—with more and more of the stream being diverted to personal income payments and taxes as we get further from the retail market. The stream is also reinforced by government purchases and by "eddies" of spending from stages more remote from the consumer, but ordinarily not by enough to make up for the income and tax diversions.[7]

If we ask about the source of the personal income out of which consumers spend, we get a different view of the stream of payments (Figure 5). Part of personal income originates with the government, part in farming, part in industry, part in wholesale and retail trade, and part in the service industries and rental housing. Part, as we have seen, goes back to direct consumer expenditures for personal services. Thus, we arrive at the image of a stream joined by many branches, as we go around the circle, and pouring out into the consumer's pocketbook.

Putting these two views together, and accounting also for government as receiver of taxes and maker of outlays, we arrive at Figure 6. The result is, of course, much more complicated.[8] It still makes sense, however, to think of a general counterclockwise swirl of payments on the diagram. At each checking-station (such as the household, wholesale trade, or farming) we have an

[5] Internal payments within "industry" (for partly processed goods, mineral materials, machinery, and so forth) are not shown in the diagram.

[6] Actual farm purchases are, of course, distributed among all levels of trade.

[7] During the war, of course, government expenditures grew to be about the same size as consumers' outlay.

[8] At the same time, it is much less complicated than would be necessary to register all flows of payments in exchange for currently produced goods and services. Any attempt at full realism would have to increase the number of checking-stations within the general field labeled "industry"—recognizing construction, mining, various types of manufacture, and so forth. It would have to bring in payments for transportation, telephone, electric power, and so forth (payments which are made by every type of dealer in the economy). It would have to show very many more "eddies" in the stream; and it would show transactions adding up to a larger multiple of income. But the general image resulting would still be of the same type as that in the simplified diagrams.

inflow of receipts financing a flow of outpayments. From each checking-station we can trace at least a large part of the outpayments "downstream," and of the receipts "upstream." And wherever we trace a flow of money, we can trace a flow of goods and services in the opposite direction. No piece of goods, however, goes clear around the circuit.

Adequacy in the Flow of Payments: "Saving and Investment." Looking at the circuit of payments, it is obvious that the flow of current output must be *at least approximately* self-financing. In each firm in the system, the value of products seeking sale roughly equals the sum of the firm's outlays for supplies, plus personal income payments (including profits), plus taxes.[9] The "outlays for supplies" of firms at one point on the circuit of payments constitute a market outlet for the products of their suppliers. Canceling out these transactions, the *net* product seeking sale must be roughly equal to the sum of personal income plus business taxes. This self-financing character of economic activity is reflected in the diagrams through the rough equality of the receipts and outpayments (represented by the width of the streams) at each of our checking-stations.

Even though personal incomes plus taxes *can* buy the current net output at satisfactory prices, however, it does not follow that they *must*. One of the most conspicuous facts about economic life is that consumers do not have to spend their entire incomes. They are free to save part of income, and in practice they almost always do.[10] Governments do not have to spend all their tax receipts. Business firms can cling to part of their sales receipts.

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[9] Only "roughly," for any period, because of inventories. Supplies on hand at the beginning of the period contribute to output. On the other hand, part of new purchases and part of current output goes into stock. To get a strict equality, we have to put the value of net increase in the firm's stocks of goods on the left-hand side any of the equation along with the value of product sold (or the value of any net decrease on the right-hand side along with the costs). There is no use being too finicky about setting up precise rather than rough equalities at this stage of analysis, however.

[10] There are always some consuming households which have special need of funds (because of unemployment, sickness, old age, educational expenses, or what not) and which outspend their income by running in debt or using up accumulated assets. But ordinarily these "negative savings" are far outweighed by the positive savings of other households.

Department of Commerce estimates for 1929–1946 show *net* negative savings for households only in the acute depression years of 1932, 1933, and 1934. (*Survey of*

For the moment, fix your eye on the consumer's freedom to save, and its consequences for the self-financing character of markets. When consumers save part of their "disposable income" (that is, the excess of personal income over taxes), some of their savings are used for direct consumer purchases of goods other than current consumables—notably houses—constituting a direct market for the output of industry. But much of saving goes into "token" forms. Savers buy securities—government bonds, corporation stocks, and so forth. They put part of their incomes into life insurance premiums, building up the "cash values" of their policies. Except in acute depression periods, they put part of their incomes into building up their cash holdings—especially "savings deposits," but also checking deposits, coin, and paper money.

"Money cranks" love to argue that token saving represents a "leak" in the monetary system which is bound to bring the stream of payments to a halt. This will be true only *if:*

a. The net output of the system consists entirely of goods seeking sale to consumers *and*

b. No injection of funds elsewhere offsets consumer saving.

Condition (*b*) sometimes holds. But a number of things may happen to keep it from being true. New money may be put in circulation in payment for mining or importation of gold and silver. Governments may outspend their tax receipts. The country's exports may exceed its imports. Thus, condition (*b*) is not *necessarily* true—and obviously government policy could always make it false. Condition (*a*) is *never* true. Part of the output offered for sale is bought by government. And, except in serious depressions, part of the net output consists of new plant, equipment, and working stocks of goods—aimed to help expand production for the future, and finding its market in "capital expenditures" of business firms.

The fact that consumers save, therefore, does not prevent the flow of production from generating adequate markets to keep that flow going. To the extent that consumer income is drained away by taxes and by saving, it fails to provide a market for current

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Current Business, National Income Supplement, July 1947, p. 19.) If we could separate out from households the business accounts of unincorporated firms (farms, groceries, and so forth) even these negative figures would probably disappear.

output. But government expenditures [11] and business capital expenditures provide markets additional to the consumption market. In the economists' private language, business capital expenditures are called "investment" for short. For markets to be self-balancing, *government expenditure plus investment must equal the sum of taxes plus savings.*[12]

The sum of investment and the government's deficit (excess of expenditure over taxes) is often spoken of as "offsetting" saving. But the investment which "offsets" consumer saving need not be financed out of that saving. Business may pay for investment with funds drawn from idle business cash, or funds borrowed from banks.[13] If the government has a budgetary surplus, it may pay off part of the national debt, and the proceeds may be put into financing business by the bondholders whose securities are re-

[11] Funds which the government pays out to buy currently produced goods and services (services of officials, military supplies, highway construction, and so forth) must definitely be included here. Funds which are paid out for no specific contemporaneous service (such as unemployment compensation, veterans' benefits, interest on the national debt, and tax refunds—what statisticians call "transfer payments") may be treated either as government expenditures or as negative taxes. Either way, the conclusions of the text hold.

[12] House construction is regarded for this purpose as a "business capital expenditure." Business purchases of equipment, and so forth, are paid for partly out of accumulating depreciation funds, partly out of "net business savings" (parts of profits not paid out to the owners of the firms in question), partly out of new financing. If investment is measured "gross," we must regard depreciation allowances as part of "gross saving." If investment is measured "net" of depreciation, only net business savings need enter our accounts of national saving. (We could even deal with investment net of all "inside financing" and treat business as having no saving.) On any basis used consistently, the conclusions of the text will hold: taxes plus saving must be balanced by government expenditure plus investment.

[13] It used to be argued that consumers by "putting savings in the bank" indirectly financed business. In recent years students of money have viewed this as a rather uninteresting half-truth. From the standpoint of any particular bank, lending power rises if it receives deposits which might have been in some other bank; but, of course, the lending power of the other bank falls. So the fact that individual bankers see their lending power depending on deposits is inconclusive. If consumers' efforts to save in the form of bank deposits reflect reduced willingness to buy newly issued corporate stock (for example), banks as a whole gain no lending power. All that happens is that deposits which might have belonged to the corporations trying to float stock are now held by the savers who have refused to buy the stock. Obviously, such a change does not create at the banks ability to finance business which offsets the impossibility of floating stock.

Looking at the banking system as a whole, "putting savings in the bank" can enhance lending power only if it increases cash reserves or reduces reserve requirements (see Part I, Chapter I, E.). If a tendency for savers to pile up deposits draws in coin and paper money from circulation, it may increase reserves. If it shifts deposits into classes of banks with low reserve requirements (such as mutual savings banks) from banks with high reserve requirements, it increases the lending power based on a given stock of reserves. The same applies if the shift increases

deemed. What matters is not the linkage between specific parts of the savings flow and specific items of investment, but the overall matching between the amount of "offsets" and the amount of saving.

The "Propensity to Consume." Looking at the consuming household, what has been said so far amounts to this: households spend for consumption out of the personal incomes they receive; but in times of prosperity, or even of fairly serious depression, they do not spend *all* they receive on consumption. This is rather vague; can we do better?

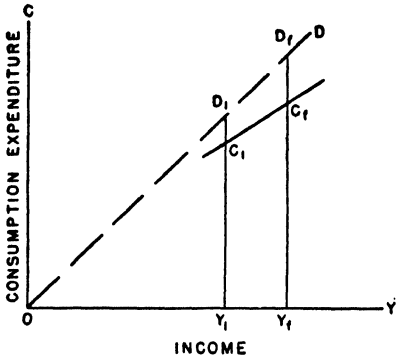


FIG. 7A. KEYNESIAN HYPOTHESIS ON RELATION OF CONSUMPTION TO INCOME

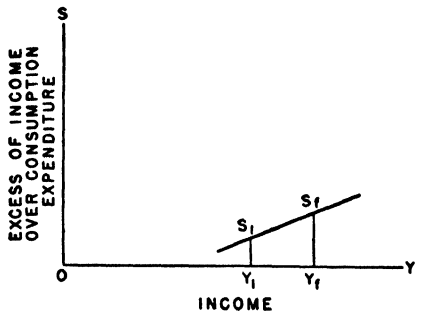


FIG. 7B. IMPLIED RELATION OF SAVING TO INCOME

The line of monetary thinking which follows John Maynard Keynes offers as answer the notion of the "propensity to consume"—illustrated in Figure 7A. Given the community's habits and tastes and the distribution of income among the different households, Keynesians assume that there is some specific level of consumption spending corresponding to each possible level of income. In the diagram, consumption expenditure is measured vertically and income horizontally. The diagonal *OD* traces the locus of points at which spending would equal income. But, as already noted, spending is at least ordinarily less than income. If income is OY_1, so that a level of spending equaling income would be

the proportion of a given bank's deposits in low-reserve-ratio classes—that is, in time deposits as compared with checking deposits. But all these effects depend on what saving does to the *composition* of the outstanding mass of cash—not, in the first instance, on the *amount* of savings that people are trying to "put in the bank."

$Y_1D_1 = OY_1$, we expect to find actual spending Y_1C_1. The difference C_1D_1 represents saving. Similarly, if income is OY_f, spending is Y_fC_f and saving is C_fD_f.[14]

As between any two levels of income, the assumption is that the higher income will result in both more consumption and more saving. Thus, in Figure 7A, Y_fC_f exceeds Y_1C_1, and C_fD_f also exceeds C_1D_1. There is a good deal of room for argument as to the proper shape for the C curve. But so long as it rises as income rises (moving on the diagram from southwest to northeast), and so long as it rises less steeply than the diagonal OD, the essential Keynesian argument is unaffected by details.[15]

Investment and "Under-Employment Equilibrium." As we saw above, production and employment can be sustained only if spending of all sorts combined provides an adequate market. Taking both total income and total spending *net* of business spending for supplies sold by other business firms, this conclusion means that the non-spending of consumer income which constitutes sav-

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[14] In the private language of Keynesian monetary theorists:

1. Curve C_1C_f traces out the "consumption function."
2. At any point, such as C_1 (corresponding to income OY_1):
   a. The *slope* of C_1C_f measures the "marginal propensity to consume," supposed to be always a fraction less than 1.
   b. The *ratio* of C_1Y_1 to OY_1 (or—the same thing—to Y_1D_1) measures the "average propensity to consume," supposed to be a fraction less than 1 at ordinary income levels, but perhaps greater than 1 for very low income levels.

[15] Many followers of Keynes were originally inclined to draw the C curve curling over and flattening out as it went to the right. But the statistics available, while not at all conclusive, do not offer much testimony to the existence of such a flattening-out. In the Keynesian private language, the record is consistent with the hypothesis that the *marginal* propensity to consume is about the same at all levels of income.

Even if the *marginal* propensity is constant, however, the *average* propensity to consume may be lower for higher levels of income. That is, a higher *percentage* may be saved out of a high level of income than out of a low level. Geometrically speaking, if a straight line through C_1, with the slope that the C curve has at C_1, will cut the axis OC ABOVE O (that is, if such a line will cut the diagonal at a level of income above zero, indicating that at that level saving will cease), the average propensity to consume at C_1 must be falling.

Most Keynesians seem to think that this is the case. On the record, I should be inclined to guess that it is true in the short run but not in the long run. J. M. Keynes himself took pains to point out that his argument depends only on the *amount* saved (not the percentage) being higher for higher income levels. He seems to have felt some doubt about the percentage.

ing must be balanced by spending of the other sorts which constitute investment.[16]

This finding, that in equilibrium saving and investment must match, enables us to read Figure 7A either backward or forward. If income is Y_1, the diagram says, consumption spending will be Y_1C_1 and saving will be D_1C_1. But saving must be matched by investment. Therefore, income can be OY_1 *only if* investment equals C_1D_1. Similarly, income can be OY_f only if investment equals C_fD_f.

For convenience, we may translate Figure 7A into another diagram (Figure 7B) showing the saving, instead of the consumption spending, which corresponds to each level of income. This translation is extremely simple: for each level of income, we simply take the corresponding vertical difference between the C curve and the diagonal OD. Thus, Y_1S_1 in Figure 7B is the same length as C_1D_1 in Figure 7A, and Y_fS_f is the same length as C_fD_f. If we are told how much investment *will* be—and, therefore, how much saving *can* be—we need only find the point on the S curve of Figure 7B which is the right height, and the equilibrium level of income can be read by dropping a perpendicular to the OY-axis.

This line of argument leads directly to the Keynesian idea of "under-employment equilibrium." Suppose that OY_f is the level of income which will be reached if there is full employment of labor,[17] while OY_1 is a level of income so low that it can be reached only if there is under-employment of labor. If investment can be

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[16] Assume for the moment that government spending balances taxes; the effects of an unbalanced government budget will be brought in presently.

[17] Trying to define "full employment" seems to raise many people's blood pressure. My definition for purposes of this book is aimed to be less exciting than many. I mean by "full employment" a situation where:

1. People who have jobs are reasonably content with their working hours and pace of work, and would not on the whole prefer to do more work at current rates of pay in order to increase their earnings.
2. People who are out of work can count on getting jobs which will use their skills, with pay and working conditions in line with those now current on such jobs, within the few days or weeks required to get in touch with possible employers and, in case of need, to change their residence or get extra training.

Just how many jobs and how much unemployment this means will depend both on characteristics of the labor force and on the characteristics of the labor market which determine the "normal" lag in placing a worker with a new employer.

only Y_1S_1, equilibrium below full employment at income OY_1 is possible, but equilibrium at the full-employment income level of OY_f is impossible. Only if investment can be Y_fS_f can equilibrium at full employment be attained.

So far I have not allowed for the possibility of a surplus or deficit in the government budget. But government can be brought in without even redrawing the diagrams. The obvious way to read Figure 7A is to treat "income" as the part of personal income which is "disposable" after households pay their income taxes, Social Security contributions, and so forth.[18] But, if we want, we can take "income" before taxes, and consider the margin between the C curve and the diagonal OD to include taxes as well as savings. In this case, the S curve of Figure 7B is to be read as including savings plus taxes. Its shape will depend on the tax structure as well as on the public's attitudes toward spending and saving. But any tax structure implies higher total tax payments as well as higher savings at a higher income level. So long as tax rates, definitions of taxable income, and so forth, remain unchanged, we can, therefore, draw a single rising curve to show the sum of savings and taxes. What must balance the part of income not spent by consumers, then, is the *sum* of investment plus government expenditure.

Interest, Marginal Efficiency of Capital, and Investment. According to the Keynesian argument presented in the two preceding sections of this chapter, if we know the income-consumption curve, the government's tax-expenditure policy, and the level of investment, then we know also the level of income. But what determines the level of investment?

The original Keynesian answer was that investment depends on the relation between the rate of interest and the "schedule of the marginal efficiency of capital." The "marginal efficiency of capital," in the private language of the Keynesians, is the rate of return (in per cent per annum) which can be obtained on new

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[18] Certain taxes (such as sales taxes, cigarette stamps, and so forth) are commonly counted as part of consumption expenditure; so that the funds with which consumers will pay them are not subtracted out in obtaining "disposable income." If we want to reinterpret Figures 7A and 7B to include government expenditure along with investment, however, it becomes necessary to treat this part of 'expenditure" explicitly as taxes.

capital invested in houses, equipment, and so forth.[19] From the standpoint of each business and household, if a certain rate of interest must be paid, an investment is worth while if its marginal efficiency exceeds interest. Some possible investments would yield something, but less than interest, and are not worth while.

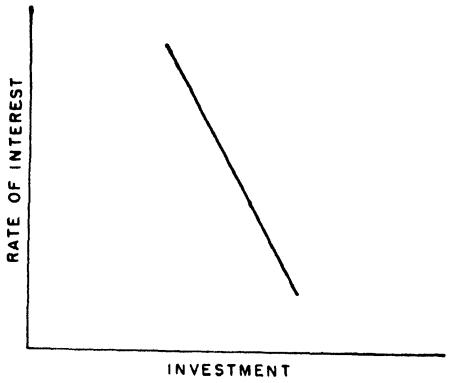


FIG. 8. SCHEDULE OF MARGINAL EFFICIENCY OF CAPITAL

Thus, of the investments which might be made during a period, the interest rate charged allows some and rejects others. If the interest rate were lower, some of the rejected investments would become profitable. Graphing (in Figure 8) the amount of investment (for, say, the next year) which will be profitable at each interest rate from left to right and the interest rate up and down, we get a sort of demand curve—in fact, just what old-fashioned economists used to call the "demand for capital." Thus, if the marginal-efficiency schedule (or demand curve) will stay put, lowering the interest rate can increase the volume of investment. Going back to Figure 7B, a lowered interest rate increases the amount of saving that can be absorbed and gives a higher equilibrium level of income and employment.

The assumption that the marginal-efficiency schedule will stay

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[19] Keynes pointed out that this concept of "marginal efficiency" is identical with what Irving Fisher calls the "rate of return over cost." Suppose that a given investment involves an outlay now which will bring in a specified stream of receipts over the ensuing ten years. A rate of interest can be found such that, if we *discount* the expected receipts back to the present, the resulting aggregate discounted value will just match the value of the costs. This rate, for a marginal investment, is the "marginal rate of return over costs" or "marginal efficiency."

If the firm looking at the investment opportunity can borrow at a lower rate, then "discounting" at the borrowing rate will show that the receipts will be worth more than the cost. For, if we discount at a lower rate, the present worth of a piece of future receipts rises toward the ultimate amount of the receipts. Thus, borrowing at a low rate is profitable. But if a higher rate is used in discounting, the present value of the receipts will fall, lying *below* the cost as soon as the rate used passes the "marginal efficiency."

put must be handled with care. The term "marginal efficiency of capital" in itself may easily lead the unwary to expect stability. It sounds like some sort of technical characteristic of productive equipment (like the thermal efficiency of a locomotive) which depends only on engineering and can change only by invention and the gradual installation of improved equipment. Actually, the "marginal efficiency" is a highly psychological variable, as Keynes himself always stressed. For instance, if businessmen come to expect higher prices for their output, they will expect larger receipts to result from installing a piece of equipment now. Therefore, if the cost of that equipment does not go up, they will expect a higher marginal efficiency from their investment.[20] Keynes suggested that fluctuations in production and employment probably result largely from fluctuations in marginal efficiency.

In the development of Keynesian ideas, this original answer about the determination of investment has been changed in two main ways: (1) increasing skepticism has developed about the influence of interest rates on investment; (2) there has been increasing emphasis on business volume as a determinant of investment.

Faith in interest changes as a way of bringing about full employment by stimulating investment was badly shaken by the experience of the 1930's. From 1933 on, interest rates in the United States were very low by accustomed standards; yet unemployment hung on and investment was much lower than in the 1920's. Furthermore, economists who interviewed businessmen about the influence of interest rates on their calculations came back with answers that did not jibe with earlier impressions. Interest was found to play a role in decisions about buildings, public utilities, and transportation equipment,[21] but not much elsewhere.

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[20] If the greater optimism about future prices is so general that businessmen scramble for the equipment and bid its price up, then at a higher price it may come to have the same "marginal efficiency" as before. Even so, the current dollar volume of investment that can be found at a given level of marginal efficiency will have been increased (by the amount of the price increase on the equipment). Therefore, either way, a greater optimism about future product prices will shift the schedule of marginal efficiency of capital to the right.

[21] This is a very large exception to the generalization that interest does not affect investment, for these lines almost always account for well over half of investment!

The importance of interest calculations in long-term commitments is readily seen in housing. If you are going to buy a house on monthly payments, you have to

The effect of business activity on investment fits very naturally into the Keynesian system, and has been adopted as part of the Keynesian orthodoxy by most economists in that school. This effect presumably arises largely through pressure on facilities: a large volume of operations creates a situation where putting in new machinery, enlarging buildings, and so forth, will reduce operating costs. Thus, the schedule of marginal efficiency of capital shifts to the right as operations expand. Taking income as a rough measure of "activity" for the purpose, we may set up another diagram which builds upon Figure 7B. In Figure 9, the S curve showing how higher savings correspond to higher income is carried over from the previous diagram. Investment may be represented by a series of curves which also run from southwest to northeast, showing higher investment at higher income levels. Each curve is drawn for a given interest rate—the highest curve representing the lowest interest rate.[22] If we start from an underemployment equilibrium with income OY_1, savings Y_1S_1, and investment Y_1S_1, this implies a particular interest rate—that corresponding to which curve I_1 is drawn. Had we had a lower interest rate—that corresponding to which curve I_f is drawn—we could have had equilibrium at a full-employment level of income OY_f and with savings Y_fS_f (and investment Y_fS_f).

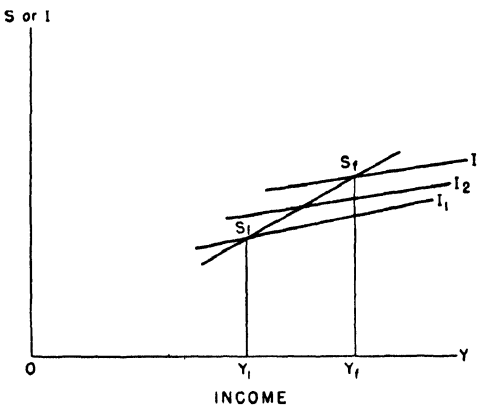


FIG. 9. INVESTMENT AND SAVINGS AS AFFECTED BY INCOME AND INTEREST

ask whether the monthly amount of interest and principal plus taxes, insurance, and so forth that you must pay to retire the mortgage is more or less than rent. Obviously, the answer hinges on the interest rate.

[22] If income had no influence, all I curves would be horizontal straight lines. That is, at a given level of income, investment would vary inversely with interest; but at a given level of interest, investment would be the same for all levels of income.

If there is an income effect but no interest effect, all the I curves will merge into one.[23] If only curve I_1 exists, for instance, equilibrium must be at income OY_1. On the other hand, if we read the diagram as comparing savings-plus-taxes in the S curve with investment-plus-government-outlays in the I curve, a different equilibrium could be reached by a change in policy which would shift the curves. Increasing government outlays with tax rates constant, for instance, might raise the I curve until it cut the S curve in the full-employment position S_f.

One more possibility should be studied. What if the I curves are steeper than the S curve? If this is the case (and it does not seem at all impossible for short periods), there can be no stable equilibrium. If we start from an initial equilibrium position, lowering the interest rate will not lead to a new equilibrium at a higher level of income. On the contrary, if (say) the I_1 curve cuts the S curve *from below* at S_1, all levels of income to the right of Y_1 would involve an excess of I over S—an excess which would be increased by either lowering interest or expanding income. Similarly, all levels of income to the left of Y_1 would involve an excess of saving. Consequently, if the I curves are steeper than the S curves, equilibrium can exist only by accident.[24]

"Liquidity Preference" and Interest. There is one more major element in the Keynesian form of payments approach: the "liquidity-preference" theory on which the Keynesian theory of interest centers.

Here, at long last, we find the Keynesian analysis bringing in our old friend, the quantity of cash. In a nutshell, the Keynesian position is that a small cash supply leads to a high rate of interest, and a large cash supply to a low rate of interest—with a proviso

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[23] That is, at any level of income, investment will be the same whatever the interest rate. By drawing only one savings curve, we imply that savings are unaffected by interest. Actually, many economists would hold that at a given level of income the rate of interest would affect savings. But most economists seem to be ready to agree that, within such a range of interest rates as from 1½ per cent to 5 per cent on United States Government long-term securities, the effect of interest rates on savings is not large enough to pull the S curves for different interest rates a very great vertical distance apart on the diagram.

[24] This is not to say that the world would come to an end. Actually, we are probably out of equilibrium almost always in the sense that *planned investment* is out of tune with *planned saving* (see pp. 218–219, 226–227).

that expanding the cash supply cannot lower interest beyond a certain point.

The rate of interest represents the terms on which a holder of cash could lend it out.[25] To the extent that he holds cash, he has rejected the lending option. He must have done so because the advantages of having cash on hand outweigh the advantages of later repayment with interest. The lower the rate of interest he can get, the smaller need be the advantages *at the margin* which it takes to balance the opportunity to get interest.[26]

We need not study these advantages of holding cash at this point. They will be examined closely in Chapter VIII. Whatever they are, the holder of cash can enjoy them more fully if he puts a larger proportion of his wealth into cash. If interest is lower, so that he gives up less by holding cash, we may expect him to hold more cash and less other wealth.[27] Given his total wealth, we can draw a curve (with interest measured up and down and cash measured crosswise) measuring how much he will hold in cash at each interest rate. This curve must slope downward to the right. Adding together the quantities of cash held at each interest rate by each individual firm and household in the economy, we arrive at Figure 10. In Keynesian lingo, this is the "liquidity-preference curve."

This diagram can be read in either of two directions. Given the quantity of cash, the curve tells how much the interest rate

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[25] In talking of "the" rate of interest, Keynesians imply that the whole wide range of rates on different kinds of loans which we see at a given moment can somehow be reduced to a common footing. The supposition is that "the" rate refers to short-term loans on which the creditor is sure the debtor will literally fulfill his contract (such as loans to government), and that differentials reflect "risk premiums" on loans where there is some recognized hazard of default *or* of a "capital loss" in case a longer-term loan is transferred to another holder before maturity.

[26] Keynesian analysis assumes that "cash" yields no interest. In fact, some interest was paid on checking deposits in the United States prior to 1933. In such a case it is the *interest difference* to which Keynesian analysis must be referred.

At present, holders of checking deposits may get "implicit interest" if they are in a position where their bankers would increase service charges if their balances were reduced. It is not known, however, how much of the cash supply is held by depositors in this position.

[27] Students of economic theory will see an exception. The person whose affairs we are analyzing may get most of his income as interest. If so, he may be so impoverished by a drop in interest that he has to give up the luxury of holding a lot of cash, even though it is cheaper. This is the same principle on which people will work for lower wages when hungry—an example of the "income effect."

must be; thus, if cash is OM_1, the rate of interest is M_1i_1. Looking at it the other way, if a certain interest rate is to be reached, an appropriate stock of cash must exist. Thus, to have an interest rate M_fi_f, we have to have the stock of cash OM_f. The implication is that if underemployment equilibrium exists with a high interest rate, an expansion of the cash supply can lower the interest.[28] Going back to the rest of the Keynesian apparatus, the lowering of the interest rate will stimulate investment, thus increasing the amount of saving that can be "offset" and raising the equilibrium level of income.

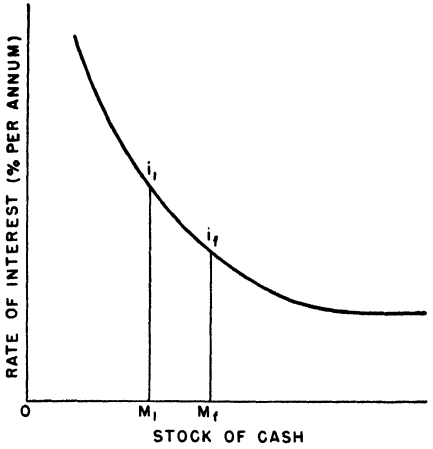


FIG. 10. KEYNESIAN "LIQUIDITY-PREFERENCE SCHEDULE"

The way the curve is drawn implies (in line with Keynesian tradition) a minimum level below which interest cannot be pushed by expanding cash and at which "liquidity preference becomes absolute." [29] Keynesians argue: (1) that this minimum cannot lie below *zero*. (Since the holder of cash can keep it, he has no incentive to lend it out at a *negative* rate—that is, on such terms that the debtor contracts to repay less than he borrowed.) (2) That lenders have in mind some standard of "normal" rates and refuse to lend much below those rates because they feel that, by waiting a little, they can lend on better terms. Furthermore, the cost at which lenders can administer their loans and cover losses has some minimum above zero.

This explanation does not bring in the influence of *income* on the amount of cash people want. The higher the income is (at a given rate of interest), the more cash will be demanded. Dia-

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[28] Here, as usual, there must be a proviso: the *process* by which the cash supply is expanded must not also shift the liquidity-preference curve to the right—at least, not enough to offset the effect upon interest.

[29] This rather fancy piece of language means that if somebody gives our cash-holder more wealth, he will insist on taking the whole of the addition in cash.

grammatically, the result is Figure 11. If we hold interest constant at level i_1, we can draw a curve showing how much cash is needed at each level of income (for instance, OM_1 dollars at income OY_1). With lower interest rates, higher curves (marked i_2, i_3, and i_4) will come into play. *Any combination* of income and interest will show how much cash is needed. This diagram can fill the same logical place in the system as Figure 10.[30] If liquidity preference tends to become "absolute," then for very low interest rates, the curves on Figure 11 must be horizontal—showing no greater cash requirements for large than for small incomes, within the range of income up to OY_f.

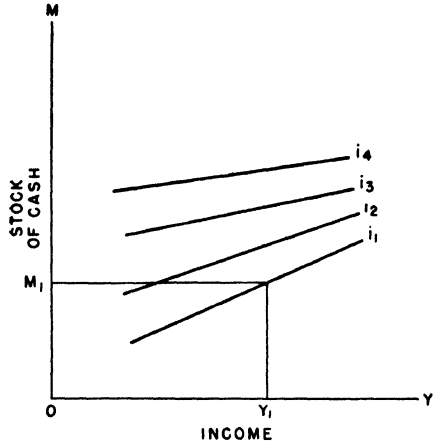


FIG. 11. AMOUNT OF CASH BALANCES WANTED IN RELATION TO INCOME AND INTEREST

The strict Keynesian view is that the stock of cash can affect activity and prices *only* through the rate of interest.[31] With a given consumption-schedule, in this view, consumption can be influenced only by income. The consumption function can be shifted in various ways (notably by tax policy and government expenditures of certain sorts), but not by altering the stock of cash. Similarly, the schedule of the marginal-efficiency-of-capital makes room for the influence on investment of income and interest, but not of cash as such. For reasons which will be explained presently, this part of the Keynesian position is untenable; and several

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[30] If you are good at geometry, think of a three-dimensional diagram with cash measured up and down, income sideways, and interest out toward you. The i curves of Figure 11 are cross sections taken parallel to the MOY-plane. If we take cross-sections parallel to the MOi-plane, we will get curves like that of Figure 10 (turned around). Any combination of income and interest is a point on the base plane. The curve under study becomes a *surface* with a point corresponding to any combination (OY, Oi). If we take cross sections with M constant (parallel to the YOi-plane), we will find i on these cross sections increasing with Y.

[31] According to Professor Bertil Ohlin, this is also the standard position of the Swedish school.

prominent economists who follow the Keynesian tradition at other points have given it up.[32]

Price Implications of Keynesian Analysis. In Chapter VI, questions about prices frequently came up. In this chapter, prices have scarcely been mentioned. The reason is primarily that Chapter VI explains theories that grew out of the older view of the price level as the central monetary problem; while Chapter VII is explaining theories which aim to explain *employment.* But there is another reason. I have been deliberately vague about prices [33] in Chapter VII so far, in order to postpone certain difficulties. We have now reached the stage where we have to face them.

All the talk in this chapter about the number of dollars of income, of saving, and of cash on hand has left price questions between the lines. We may choose to read "dollars" the easy way: to mean measurement in the current unit of account, with the purchasing power of the dollar varying. If so, we have to say something about how price-level changes will shift its purchasing power. Or we may choose to measure everything in "dollars of constant purchasing power"—adding a percentage to current-dollar figures if prices are low, and subtracting a percentage if prices are high. Either way, we have to ask how different parts of the structure of prices, wages, and so forth, will shift relative to each other.

The constant-purchasing-power-dollar solution has big advantages. If we want to express our beliefs about people's behavior in terms of the curves of Figures 7 to 11, we must recognize that a big change in price levels would surely shift these curves. If national income is $180 billion with prices 150 per cent of the 1935–1939 level, the United States is fairly prosperous; but a national income of $180 billion at prices 200 per cent of the 1935–1939 level means a serious depression. We should not expect the same behavior as to savings, investment, or holding of cash balances in both situations. On the other hand, an income of $135

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[32] Notably Oskar Lange, in *Price Flexibility and Employment* (Bloomington, Indiana: Principia Press, 1945).

[33] This vagueness exists in much (though by no means all) of the Keynesian literature on which this chapter is based.

billion (¾ of $180 billion) with prices at 150 per cent of 1935–1939 might well lead to the same behavior as $180 billion at 200 per cent—*except* that we should add a third to all dollar amounts at the lower price level to get comparability.

There is no sense in going to the opposite extreme and simply saying that "a dollar is a dollar." We cannot expect to find all our curves staying put through *all* sorts of price changes. If any sense can be made of the Keynesian analysis, we must have a framework in which these curves are invariant.

There is room for a straddle, however—interpreting the curves so that they will stay put through *some* kinds of price changes. We may take all our magnitudes—income, spending, saving, and cash balances—in current dollars if we can suppose that certain pivotal prices are rigid.[34] Thus, if we are dealing with a level of income which is (say) 75 per cent of "full-employment income," we must imagine that rigid prices (for instance, those of metal products) are at full-employment levels and more flexible prices—for example, food prices—are lower, so that "real income" is higher than 75 per cent of the full-employment level.

On this assumption, we can think of the Keynesian system of curves as allowing for price changes *within a framework* of beliefs about "normal" prices, costs, and so forth. The system of curves may stay put if the framework does. The framework of "normality" is pretty sure to shift through time, however. When it shifts, the curves *may* shift in such a systematic way that they will all look the same if we scale down all the sums of money involved by a uniform percentage representing the change in the money value of the "wage unit." But it is much more likely that the whole course of some of the curves will be altered in some way that will not permit any such simple description.

If income is at the full-employment level OY_f, any further

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[34] Such a straddle was proposed by J. M. Keynes himself, who suggested measuring everything in "wage units." A wage unit may be taken as a representative straight-time hourly rate. Its size, in Keynes's view, is largely a problem in trade-union politics; see Chapter VII, below.

Some Keynesians argue that their doctrine is entirely independent of any assumptions of rigidity in prices and wages. It is possible to think up conditions in which unemployment would be unavoidable whatever prices might do. But these conditions would imply constantly falling wages and prices in the absence of rigidity; so that, to explain the observed combination of *unemployment without falling prices,* rigidity must be brought in.

growth of spending is recognized as inflationary in Keynesian analysis. At such a point, if the rate of interest falls, *or* if the "propensity to consume" increases, *or* if the "marginal-efficiency-of-capital" grows, the public will be trying to spend more than a full-employment output will sell for at non-inflationary prices. If prices are controlled (as they were during the war), there will be shortages: people who have money to buy will fail to find what they want. If prices are uncontrolled, they will rise—*including* more and more of the "rigid" prices if the "sellers' market" holds on long enough.

Criticisms of the Keynesian Analysis. Before we move on to the cash-balances approach, some of the loose ends of the Keynesian analysis need study. The object of this criticism is not to depreciate Keynes's work, but to show how it can be supplemented by other lines of thinking.

The most important negative criticism of Keynes is that his analysis runs too much in terms of "equilibrium." Actually, as A. F. Burns points out,[85] study of the Keynesian logic shows that a Keynesian "under-employment equilibrium" might transform itself into a series of business fluctuations; while fluctuations, once started, are not likely to smooth themselves out into an "under-employment equilibrium." If we are going into these problems at all, we should remember that we are trying to understand a real economy which fluctuates—not a fictitious one which equilibrates.

A second main line of criticism is that Keynesian analysis puts too many things in one basket by dealing almost entirely with "aggregates" of income, expenditure, and so forth. At a few points, Keynesians take account of the fact that the same aggregate may have different effects according to the way it is divided among households or firms. An example is the Keynesian analysis (merely hinted at in this chapter) of the effect of the tax structure on the propensity to consume. In principle, this sort of analysis should be carried through all the "aggregates."

The other main line of criticism is that the more extreme Keynesians are wrong about the effects of the stock of cash. As noted above, they assume that cash can affect activity only via interest rates; hence, they have brushed aside much of the traditional

[85] See A. F. Burns, *Economic Research and the Keynesian Thinking of Our Times* (New York: National Bureau of Economic Research, 1946), pp. 8 ff.

theory of money as irrelevant. In my opinion (and also in the opinion of some other "moderate Keynesians," as I mentioned above), this reaction has gone too far. When we allow for the effects of uncertainty, which will be developed in Chapter VIII, we find that both the "propensity to consume" and the willingness to invest will be affected by the stock of cash even though interest is unaffected.

The remaining chapters of Part II will try to tie up these loose ends. But some will be left over and will be dealt with in the study of business fluctuations in Part III; and some lead us to unsettled questions which cannot be handled in this book.

* * *

Note on Alternative Points of View and Supplementary Readings

The fountainhead on the Keynesian version of the payments-approach is, of course, J. M. Keynes, *General Theory of Employment, Interest and Money* (New York: Harcourt, Brace, 1936), Book III. Book IV of the same work brings in "liquidity preference" and many of the key ideas of the cash-balances approach.

Simplified versions of Keynes are legion. Perhaps the most authoritative is A. P. Lerner, "Mr. Keynes' 'General Theory of Employment, Interest and Money' " in *International Labour Review,* October 1936. (In this account, cash-balances considerations are kept in the background very much in the way I have adopted in this chapter.) See also the discussion between Gustav Cassell and A. P. Lerner in the same *Review,* October–November, 1937.

For a sympathetic criticism, trying to reconcile Keynesian and "classical" points of view, see J. R. Hicks, "Mr. Keynes and the Classics," *Econometrica,* April, 1937. O. Lange, in *Price Flexibility and Employment* (Bloomington, Indiana: Principia Press, 1945) and in articles, takes a position similar to Hicks's.

Many expositions of Keynesian views place great emphasis on the "multiplier" which connects the difference between two under-employment-equilibrium levels of income and the corresponding difference in investment or government deficit (the "consumption function" being unchanged between the two). To me this concept is an analytical fifth wheel: the exposition is simpler if it is avoided and the whole argument stated in other terms. (Cf. my discussion in "Model-Building and Fiscal Policy," *American Economic Review,* September 1945, especially pp. 552–558.) For more sympathetic views of the "multiplier," see G. N. Halm, *Monetary Theory* (Philadelphia: Blakiston, 2nd ed., 1946), pp. 399–416, and R. M. Goodwin, "The Multiplier," in S. E. Harris (ed.), *The New Economics* (New York: Knopf, 1947), pp. 482–499.

— *Chapter VIII* —

THE CASH-BALANCES APPROACH

Introduction. In Chapter VI, the central question was *how rapidly* holders of cash spent it. In Chapter VII, we looked at spending in relation to receipts. In this chapter, we come back to holdings of cash, but with a different question. We ask why the holders of cash *haven't spent it yet.*[1]

Like the transactions-velocity approach, the cash-balances approach has a long history and has been widely used—particularly in England.[2] Also, like the transactions-velocity approach, it was adopted as a way of interpreting and defending the quantity theory of money. Alfred Marshall, for example, thought of the people of a country as wanting to "keep by them" in money the equivalent of a certain amount of real goods and services. The *aggregate* purchasing power of the country's money stock would then be equivalent to this mass of goods. The *per unit* purchasing power would be the pro rata share of each single piece of money in the mass. The more pieces of money, the thinner the aggregate purchasing power would be spread—that is, the higher prices would be.[3]

This approach has often been viewed as simply another way of

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[1] In an effort to focus attention on this point, R. G. Hawtrey coined the term "the unspent margin" to describe the public's total holdings of coin, paper money, and checking deposits. (See his *Currency and Credit,* 3rd ed., London: Longmans, Green, 1928, p. 47.)

[2] Among British economists of the twentieth century, Alfred Marshall, A. C. Pigou, D. H. Robertson, and J. M. Keynes (in the earlier stages of his monetary thinking) took this approach. On the Continent, similar analysis was developed by Leon Walras, founder of the "mathematical school," who based his monetary doctrines on the concept of an "encaisse désirée," or the amount of cash that people wish to hold.

[3] A. Marshall, *Money, Credit and Commerce,* London: Macmillan, 1923, pp. 44–45. The evolution of Marshall's views from older work, running back into the eighteenth century, is hinted at in a footnote, *ibid.,* p. 47.

putting what can be said just as simply through the transactions-velocity approach.[4] But in its modern form, the cash-balances approach can do several things which the transactions-velocity approach cannot: (1) It can deal with the way *uncertainty* affects economic behavior. (2) This tie-up makes it much more applicable to "transition periods." (3) Looking at money as a form of property, it can clear up the relations of money and "near-moneys." [5]

Who Holds the Cash? This chapter is about motives to hold cash. But whose motives? Is the typical holder of cash a wage-earner? An old lady on an annuity? A big corporation? It obviously makes a great deal of difference about whom we are talking.

The mere size of the figures is enough to warn us that the ordinary people we all know personally do not hold the bulk of the cash. At the end of 1946, for instance, the total stock of cash held by the nonbank public included:

$83 billion in checking deposits
$27 billion in coin and paper money, plus
$54 billion in time (savings) deposits; together,

$164 billion.

This total works out well above $1100 *per person* in the country —putting the share of a representative family around $4000. Few families have more than a few hundred dollars. It is a temptation to say that most of the cash must belong to some sort of fictitious monster, and that any talk about his motives is sure to be nonsense.

The answer is, of course, that a relatively small number of large cash holdings add up very quickly into billions. For example, in 1945 over 50 per cent of the *dollars* on deposit in insured commercial banks were in accounts of over $25,000 (with an

[4] Cf. D. H. Robertson, *Money* ("New Edition," New York: Harcourt, Brace, 1929, p. 195). But, as Robertson points out, the "price level" to which the transactions-velocity approach refers is not quite identical with that which fits the cash-balances approach.

[5] The argument of this chapter rests largely on J. M. Keynes (*General Theory of Employment, Interest and Money*, New York: Harcourt, Brace, 1936) and J. R. Hicks ("Suggestion for Simplifying the Theory of Money," *Economica*, February 1935; *Value and Capital*, Oxford: Clarendon Press, 1939). But I believe it will be found to go a good way beyond their position, especially in handling uncertainty, and that it traces a more simple and direct approach to the central issues.

average balance of over $150,000). The *number* of such accounts was around 430,000—about 0.5 per cent of the total number of accounts.[6] Accounts between $5000 and $25,000 had about 17 per cent of the dollars and made up about 3.0 per cent of the number. Thus, altogether, accounts of over $5000 had over 67 per cent of the *dollars* on deposit, but made up only 3.5 per cent of the *number* of accounts. At mutual savings banks, the proportion of deposits in accounts over $5000 is considerably smaller.[7] Coin and paper money are probably held largely in smaller sums. With all allowances, however, the dollar holdings of the small minority with over $5000 apiece in the bank amount to a great deal more than half the national total.[8]

Checking deposits are held chiefly for business purposes. At the middle of 1946, Federal Reserve estimates put at less than $30 billion the checking deposits in "personal holdings,"—less than two-fifths of the total of about $80 billion.[9] Of the remainder, about $12 billion belonged to unincorporated business, bringing *combined personal and business balances* of individuals and partnerships rather above half the total. State and local governments held nearly $6 billion, and the rest belonged chiefly to business corporations.

Even among personal holdings of checking deposits, most of the dollars are in large accounts. A study of bank records in 1943 showed that for checking accounts of individuals not in business for themselves 56 per cent of the *dollar amount* was in accounts of more than $5000 (although the *number* of such accounts was between 5 per cent and 6 per cent of the total number). If we

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[6] Federal Deposit Insurance Corporation, *Annual Report,* 1945, p. 67.

[7] *Ibid.,* p. 71. The 4.3 per cent of the *number* of accounts exceeding $5000 held 30.6 per cent of the *dollars.*

[8] The total of deposits in accounts exceeding $5000 in October 1945 was $88.3 billion in insured commercial banks and $3.1 billion in insured savings banks. If we charge against this $91.4 billion *all* of the roughly $4 billion of checks in collection, we still have $84 billion—or 60 per cent of the total cash held by the nonbank public. Of the remaining 40 per cent, a good part must have been in large accounts at uninsured banks, in small bank accounts owned by people with large accounts at other banks, and in currency held by people with large bank accounts.

[9] *Federal Reserve Bulletin,* November 1946. Holdings of individuals and business are estimated on p. 1237, holdings of state and local governments on p. 1261, total checking deposits (demand deposits adjusted) on p. 1257. I have put the figures on a demand-deposits-adjusted basis, on the assumption that most of the deduction for checks in the mails made on p. 1237 is from corporation balances.

consider accounts over $1000 as "large" (which they certainly are, if we are thinking in terms of the scale of living of ordinary households), the same study shows small accounts as almost insignificant. Only 17 per cent of the dollar amount was in accounts of less than $1000 (although the *number* of such accounts was about 70 per cent of the total number).[10] To put these figures in perspective, remember that the 17 per cent belonging to the rank-and-file individuals with less than $1000 in their checking accounts was only a fraction of a fraction. Individuals not in business for themselves held only about half the checking deposits of individuals and partnerships; individuals and partnerships held only about half the total checking deposits. Half of half of 17 per cent is around 4 per cent. In theorizing about checking deposits, therefore, we might as well assume that they are held either by business firms or by individuals with rather large affairs. Personal checking accounts of ordinary people don't add up to enough to carry much weight.

With time deposits ("savings deposits"), ordinary individuals count much more heavily. The proportion held in very large balances is smaller. Besides, it is more common for individuals with modest incomes to have several thousand dollars in savings deposits than in checking deposits. The business share in time deposits is small; the Federal Reserve estimates show over 90 per cent of the total in "personal holdings." When we theorize about time deposits, we can fairly assume that we are talking about the doings of individuals in the upper-middle income brackets.

About coin and paper money, information is sparse. Corporations seem to hold only 4 per cent or 5 per cent of the total outstanding. Unincorporated business may hold a good deal. (Especially during the "black market" era, during World War II and through most of 1946, much business was done in paper money to avoid leaving tracks in bank records.) Farmers are apt to hold paper money when they have cash. Many farmers find it hard to

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[10] All these figures are from a sample study by the Securities and Exchange Commission, reported in *Survey of Current Business,* June 1944, pp. 14 ff.

Even for occupational groups with low incomes, similar figures are shown in the sample. Among "clerical employees," for example, 60 per cent of the dollar amount was in accounts of over $1000; among teachers, 55 per cent. (The corresponding percentages of the number of accounts were 14 per cent for clerical employees and 17 per cent for teachers.)

get to the bank, and the memory of bank failures in the interwar period still makes banking somewhat unpopular among them. Nearly a third of the coin and paper money outstanding is in bills larger than $20—which we may take as the largest which people ordinarily carry around in their pocketbooks—chiefly in fifties and hundreds. But how far this reflects paper-money holdings by the wealthy, and how far the business needs of farmers, unincorporated business, and travelers there is no telling.

Putting the evidence together is not easy. Since checking deposits are rather over half the cash supply, we can be sure that business firms and individuals with very large affairs hold a large slice of the total. Theorizing which assumes businesslike calculation, and which assumes the sort of interest in stock-exchange securities we attribute to "financiers," is clearly relevant. Theorizing which rests on the *transactions* of rank-and-file individuals earning wages and salaries is likely to be less relevant to the explanation of cash holdings, in view of the rather small proportion of cash it seems to fit. Theorizing about the form in which rank-and-filers choose to keep their accumulated savings, however, must be taken very seriously, in view of the widely distributed ownership of time deposits.

Motives for Holding Cash. Why do individuals and business firms hold cash? Cash can't be eaten, worn, slept in, or used to keep off the weather. In itself it is useless; it is valued only because it can be used to buy other things. There is always something you can buy with cash on hand. Why keep cash unspent?

If we look only at the aggregate amount of cash, there is an easy answer which doesn't explain much. When one individual spends cash, somebody else gets it: *using* cash doesn't *use it up.* The total amount of cash in existence is determined by the forces studied in Part I. It arises out of the history of bank loans to private parties, government deficits, importation and mining of gold, and so forth. The sum of individual holdings is simply the total thus brought into existence.

This explanation would be adequate if everybody always passed cash on at the earliest possible moment after receiving it—so that each dollar was owned by its present holder only because he hadn't yet had time to get rid of it. In the terms of Chapter VI, this supposition would imply that "velocity of circulation" was as high as

the system of payments in the community made technically possible. But this can happen only very rarely.[11] Since people in fact choose to hold onto cash which they are free to spend, we cannot evade the question in this way.

Economists have worked out a more or less standardized list of "motives" for holding cash. This list may be put as follows:

1. *Transactions Motive.* Holding enough cash to carry the holder past some foreseen trough in his holdings—that is, to absorb an excess of cash outlays over cash receipts down to the date of some foreseen substantial receipt.

2. *Margin-of-Safety* (or "Precautionary") *Motive.* Holding enough cash to cushion the ill effects of possible unexpected outlays or failures of receipts, and to safeguard financial respectability.

3. *Investment Motive.* Holding cash as the embodiment of wealth, which the holder cannot see his way clear to put it into any other form.

4. *Speculative Motive.* Holding cash because the holder is waiting for something he is interested in buying to come down in price.

We cannot classify the cash of a given holder into definite parts, each representing one of these motives. The same cash may "double in brass." If a holder has a lot of cash on hand because of speculative considerations, he has a margin of safety, so that needs under the second motive are swallowed up in those in the fourth motive. Besides, the different motives shade into each other. In fact, in analyzing them it is less important to keep them distinct than to keep track of the common element which binds them all together—*adaptation of business dealings to uncertainty.*

The Transactions Motive. The transactions motive is a commonplace matter of avoiding the inconveniences, expenses, and annoyances of running out of cash. Every household or firm has

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[11] A friend who was a child in Germany during the great inflation of 1923 recollects that as soon as the father of the family got his pay, the money was parceled out among the six children—to be spent right away, because prices would be so much higher later in the day. (If everybody happened to bring home nothing but toothbrushes, barter could be set up with neighbors.) This is a sample of the processes by which velocity is maximized in "hyper-inflation"—incidentally raising prices in a considerably greater ratio than the stock of money grows.

lean periods where "everything goes out and nothing comes in." When we have cash on hand or coming in, and can see such a lean period ahead, we make sure that we will enter the lean period with enough cash to see us through.

The working of the transactions motive depends on such factors as Fisher lists in his discussion of "velocity." People who are paid weekly need less cash than people with the same income who are paid monthly. People who run up a bill at the grocer's and settle on payday need less cash (as of two days after payday, say) than people who buy exclusively at cash-and-carry stores. People who are able to borrow, and don't mind doing so, need less cash than people who feel that borrowing is a sin.

The size of transactions needs for cash, in any individual case, depends on how far the holder in question looks ahead, and what items in his future accounts of receipts and expenditure he assumes to be beyond his control.[12] It depends also on whether there is any reason for setting the minimum balance higher than zero. A cash-holder may be subject to bank service charges if his balance dips below a certain level, for example; if so, he has a "transactions motive" to keep this minimum *plus* any excess of outlays over receipts in sight between now and his horizon of calculations a few weeks or months hence.

Just what assets can serve transactions needs depends on the nature of those needs. If tomorrow a man is going on a trip, on which he will deal entirely with strangers (and be in a hurry in all his dealings), he will need pocketbook money (coin and green paper). If next week he is going to make a number of payments to people he has to reach by mail, and no receipts are expected meanwhile, he will need a bank balance subject to check. If he plans an elaborate vacation next summer (with plenty of time be-

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[12] If I depend on a fixed monthly salary of A dollars, and expect to spend $0.8A$ next month and $1.2A$ the following month, my minimum need just before next payday is zero so far as these two months show. If I expect to spend $1.2A$ next month and $0.8A$ the following month, my need just before payday is $0.2A$. If, however, in the third month I expect to spend $2A$, extending my "horizon" to three months raises my need to $1.2A$.

If some of the spendings are optional, however, I may be able to cut my initial need by planning to spend less. In view of the greater freedom of action I enjoy for more remote dates (having "more time to turn around"), and in view of uncertainty about future conditions, it is not worth pushing the horizon for definite calculations about cash requirements very far into the future. But it is imprudent not to look two or three months ahead.

forehand to change his banking arrangements as he may see fit), a savings account can fill his needs just as well as a checking account or a roll of bills. For fairly remote requirements, non-cash assets may serve.[13]

The Margin-of-Safety Motive and the Principle of Linkage of Risks. The line of thought just started brings us to the fact that future transactions are *uncertain.* Practically nobody could make a precise estimate now of all receipts and disbursements for the next month. For selected items in the accounts, reliable estimates can be given well ahead of time; but uncertain items are more numerous and, commonly, more important.

Suppose that a household planner or business planner gauges present needs for cash by the *most probable* course of receipts and expenditures for (say) the next two months. If one or two items get out of control, the whole plan is thrown out of gear. In business, for example, some customers who have bought on credit may not pay when expected; or the price of some essential supplies may prove higher than forecast; or (on the optimistic side) some unexpected bargain may appear which the firm cannot afford to neglect. If the margin of safety in the cash balance is too narrow, cash may run out.

Since cash is not ordinarily an income-yielding asset, it might seem that income prospects would be maximized by allowing practically no margin of safety in cash holdings, in order to put the largest possible proportion of assets into income-yielding forms. A margin of safety in cash holdings would then be a luxury, paid for by accepting reduced prospects of income. But on closer examination, it is seen that keeping a margin of safety makes income prospects better rather than worse. The reason for this I will call the *Principle of Linkage of Risks.*

An old proverb says, "Misfortunes never come singly." Actually, our affairs are often so set up that if one thing goes wrong, many others will go wrong in consequence. Think of a motorist on a long trip who has made a close estimate of his cash require-

[13] Whether we say that, for instance, a United States Savings Bond serves a transactions requirement for a month of heavy outlays a bit in the future, or whether we say that the cashing of such a bond constitutes a future item of cash receipts is a purely arbitrary decision. But whichever language we use, the holder needs less cash for transactions purposes than if the bond disappeared from his list of assets.

ments, and has with him just enough cash to pay for gasoline and meals until he reaches his destination. If he is so unlucky as to be arrested for speeding, misfortunes pile up at a great rate. He not only then has to pay the fine; he suffers also (*a*) a night in jail, (*b*) the ignominy of having to wire his friends for funds, (*c*) extra expense, and perhaps (*d*) substantial loss by not being on hand to attend to his business when he was scheduled to arrive. A similar chain of misfortunes would be set off if his car were to become crippled and need emergency repairs, or if he were to have serious tire trouble.

The same kind of thing can happen in business. Suppose that a small firm has made large sales on credit to a customer who goes bankrupt. This means, in the first instance, that certain cash receipts will not come in when expected—if ever. If the firm's cash position has been closely figured, this event creates a need to push sales harder than intended (perhaps by price cuts), to call on other customers to pay up more quickly, to get more credit from suppliers, to borrow more than was expected at the bank, and so forth. But the loss will set up a chain of consequences which work just the wrong way. Price cuts to push sales may induce customers to hold off buying in hopes of further price cuts. Pressure on customers to pay more promptly may lose good will and thus interfere with sales; and it may set up gossip which will hurt our firm's credit rating. Suppliers, if they have heard of our firm's loss, are likely to wonder whether our firm is still a good credit risk. To apply for increased credit may be just the way to persuade suppliers to insist on reducing their advances. A loan application at the bank which arises from the fact the firm has just taken a loss will not necessarily be rejected just on that account. But, for all that, the applicant for a "distress loan" must expect the banker to go into his affairs with embarrassing closeness. Furthermore, if by any misfortune gossip begins to spread to the effect that our firm has asked a bank loan and been refused, the firm's credit rating with suppliers will suffer and its other troubles will be compounded. A loss under these circumstances threatens to strip the firm of working capital. In extreme cases, if the firm has to liquidate part of its physical assets at forced sale to meet the emergency, it may even become bankrupt. The "going-concern value" of the assets of any competently managed firm exceeds their

"break-up value" at forced sale; if the firm has to sell assets that it expected to use or to reprocess before sale, this excess of going-concern value evaporates.[14]

These chain reactions can be avoided by allowing a margin of safety in the cash position. Had our motorist carried enough extra cash to pay his fine, his other troubles would never have descended upon him. Had our firm held enough cash to take the loss in stride without being forced to alter plans for sales, purchases, or dealings with the bank, its earning power would have been unimpaired. *A stronger cash position weakens the linkage of risks;* so that, if one misfortune happens, another will not be brought about.

Looking in more pleasant directions, a stronger cash position also guarantees ability to seize opportunities. Our motorist might have happened, on his trip, to find for sale exactly the puppy his daughter wanted for her birthday. With extra cash, he could have taken it along. Our firm might have been offered a large batch of materials at a very good price—a chance to lower its costs for several months ahead. Without extra cash, it could not "buy ahead" in this direction except by cutting down purchases of other materials or of the labor needed to use the materials in question, so that the bargain offer would not be useful.[15] Here again, a strong cash position is not a luxury bought at the expense of reducing income prospects, but a way to improve income prospects.

The margin-of-safety motive plainly can be served by "near-moneys" which are not themselves useful for making payments. If our motorist carries with him some United States Savings Bonds and adequate identification papers, he can get more cash at any bank in case of need, but can keep on holding his bonds if no emergency develops. Similarly for our firm, if it holds marketable securities. To serve this purpose, however, the assets in question must be nonessential in the holder's operations, and must promise to yield almost as much on quick sale as they would if the holder took plenty of time to market them. Our motorist, for example, can get cash for the tires off his car or for the watch in his pocket.

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[14] The same sort of "evaporation of value" takes place if a merchant is forced to throw back on the wholesale market goods that he had planned to retail.

[15] Where the need for cash arises from a stroke of good luck rather than of bad luck, however, prospects of a bank loan are brighter. Thus, borrowing power at the bank is a better substitute for cash in hand for seizing opportunities.

But if he sells the tires, he will obviously stop his trip; and if he sells the watch, he will get much less for it than it will cost him to replace it (or than if he sold it under favorable conditions in a community where he was not a stranger). To help provide such a margin of safety, therefore, non-cash assets must be "liquid"; what we mean by "liquid" may be seen in general from the consideration of bankers' attitude toward assets in Part I, and will be worked out in more detail below.

The Margin-of-Safety Motive and Financial Respectability. Not every household or business firm may feel the need for a margin of safety in response to the uncertainty in its own forecasts. But social pressure to allow such a margin for the sake of financial respectability reaches practically everybody.

One of the most important intangible assets that a firm or a household can have is a strong credit rating. To be known as sailing too close to the wind is bad for credit. Our firm or household may never actually get into trouble by carrying a very low cash balance, but anybody who knows that its cash is low is apt to suspect rash management.

As some wag has remarked, the surest way to get a bank loan is to show that you don't need it. Borrowers who always allow a margin of safety can count on getting loans at low interest. Borrowers who keep their cash low are apt to be looked on with skepticism by low-interest lenders (commercial banks, in particular), and shunted over to lenders who make heavier charges, or loaded with inconvenient and perhaps humiliating requirements of "security" for loans, or both. Just in terms of interest costs, it may pay to forego profitable uses of funds in order to get necessary loans at lower rates.

Very probably many of the firms and households in a country like the United States manage their affairs largely by rule of thumb rather than by precise calculations of probable gain and loss. The tradition of "financial conservatism," built up partly by the example of firms and households known as successful and partly by the "educational" campaigns of bankers, definitely includes the principle of a margin of safety in cash holdings. The fact that Henry Ford in the 1920's put so much stress on "emancipation from the bankers," through adopting a financial policy under which he could avoid bank borrowing in all circumstances, apparently led

many firms to lay out their affairs in this way. The sad experience of firms which did not do so (and of individuals who had gone in debt to buy securities) during the contraction of bank loans which started in 1929 reinforced this idea of "emancipation." Those who sought emancipation during the interwar period may have acted on their own analysis (that is, on the basis of a direct revaluation of the needed margin of safety) or on a revised rule of thumb which they felt was coming to be accepted (that is, on the basis of financial respectability). In either case, the "margin-of-safety motive" was at work.

Credit Rationing in the Demand for Cash Assets. Looking more closely at the margin-of-safety motive and the linkage of risks brings out a fact at which I hinted several chapters back.[16] The demand for cash assets (or, more broadly, for liquidity) is sharply affected by *credit rationing.*[17]

The linkage of risks would not exist, and there would be no margin-of-safety motive for holding cash, if everybody who genuinely intended to repay could borrow all the cash he wanted at a market rate of interest. Anybody who was threatened with business losses because cash was low could get out of trouble by using his borrowing power.

But the loan market is not like that—and cannot be like that. Lenders cannot be sure of the honesty, good judgment, or business prospects of would-be borrowers. Exhaustive investigation of these factors in credit standing is too expensive. So lenders take refuge in rules of thumb which relate borrowing power to ability to pledge certain sorts of "collateral" or to maintaining suitable ratios between current assets and current liabilities, or between net worth and debt, or both.

The fact that would-be borrowers are rationed takes hold on their affairs in several ways:

1. Some borrowers (probably most borrowers by number, but not including many of the largest firms or the richest households)

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[16] See pp. 60–61, 75–76.

[17] In a broader view, what is at issue is *capital rationing.* I have discussed capital rationing as an influence on business planning and upon the working of interest in a theoretical monograph (see A. G. Hart, *Anticipations, Uncertainty and Dynamic Planning,* Chicago: University of Chicago Press, 1940, pp. 39–50, 67–74). But credit rationing, the monetary aspect of capital rationing, comes to the foreground in this book.

would like now to borrow more at the interest rates they are now paying; but credit rationing prevents them.

2. Most borrowers are conscious of limits to their "lines of credit," and have to scale their operations to correspond.

3. In calculating margins of safety, most borrowers have to allow for the danger that their lines of credit may shrink.

4. To reduce this danger (or expand their lines of credit), most borrowers have incentives to show financial prudence—for reasons sketched in the preceding section.

These effects of credit rationing explain why the increase of liquidity for a firm or household weakens the linkage of risks and increases the range of expenditures that can safely be undertaken. The fact that money can affect expenditures otherwise than through changes in interest rates, which is one of the main corrections we are bound to make to the simplified version of the Keynesian theory set out in Chapter VII,[18] hinges on this relationship between liquidity and linkage of risks.

The Investment Motive. Some holders of cash choose to hold it simply because they see nothing else to do instead.

There is a deep-seated tradition, in our middle-class society, of "keeping capital intact." True, some folks are spendthrifts, who cannot hang onto property of any kind. But some people—including most of those who save or inherit large amounts—feel that "dissipating capital" is a sin, and will avoid doing so if they can.

Most wealth probably belongs to people who know of many ways to invest it and get an income from it. But a good many people who own a little "capital," and will struggle to keep it "intact," do not see any practical way to keep it except in cash. The form of cash may be paper money; but, in the United States, it is more apt to be a savings account at a bank.

People of this stripe will succeed in saving when they are in full health and vigor and jobs are easy to get. But they may have to use up savings when they are caught by ill-health or unemployment, when they have young people to educate, or when they reach retirement. On balance, this group of savers-in-cash are likely to gain ground in times of high employment. Some growth of the demand for cash balances is to be expected from this source.

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[18] See pp. 185–187.

In particular, it is likely that this group of people accounts for a good part of the growth during World War II in coin and paper money outside banks, in time deposits, and in United States Savings Bonds (since these were so well popularized that many who normally would acquire only cash must have bought them).

The Speculative Motive. A large proportion of the total stock of cash is held by households and firms that are actively interested in owning non-cash assets—stock exchange securities, real estate, inventories, and productive equipment. In some instances, this interest is purely speculative—the buyers intend to resell what they buy, on the same kind of market where they buy it,[19] at a profit. More often, the buyers want these assets for use—to contribute direct services to a household, as in the case of a house; to contribute to production, as a machine; to yield cash income, as a bond or dividend-paying stock. But even where the buyers want assets for use, they cannot entirely avoid speculation. A holder who expects to use an asset himself may also be on the lookout for a specially favorable chance to sell it—like many American homeowners. Furthermore, anybody who is interested in owning assets he doesn't now hold has to make guesses about the best time to buy. He will not knowingly buy something whose price will soon fall sharply, even though he expects to use it steadily, because doing so will increase his costs.

When somebody deliberately avoids holding some non-cash asset because he thinks that its price is likely to fall, he is described in speculative lingo as a "bear." A bear hopes to gain by holding cash until the price decline has happened. If he operates on a two-way market, he cannot only postpone purchases, but can also sell his holdings of the asset in question and thus increase his cash. If facilities exist (as they do on stock exchanges and organized commodity exchanges), he may go further and sell short—collecting cash now or later in exchange for a promise to deliver non-cash assets later. The bear who sells short, of course, is gambling on "covering" his contract by buying the asset cheap before he has to deliver.

Very often, a "bear" on one type of assets *A* is a "bull" on some other type *B*. He thinks that he could gain by selling Asset *A*

[19] Selling in the same type of market as one buys implies a "two-way market" for the assets in question; see the discussion of markets in the Introduction.

and holding cash; but he thinks he can gain yet more by selling Asset *A* and using the proceeds to buy Asset *B*. If a bear holds cash, then, he must not only be bearish on Asset *A* but also bearish (or at least non-bullish) on the whole list of other types of assets in which he is interested.

This list of other types of assets, however, need not include all the types of assets in the economic system. Most holders of cash are prepared to back their own judgment only on a restricted list of possible assets. If we find a stock-market speculator taking a bear position and holding cash, we can infer that he forecasts a general fall in the price of listed stocks, and sees no stocks that he thinks are reasonably sure to rise against the general downward drift. But it does not follow that he is forecasting a fall in the prices of the other things—such as real estate, foreign currency units, and commodities—in which he might put his money. He is simply refusing to bet on any forecast of those prices. If the list of assets which the person in question will consider becomes short enough, the "speculative motive" for holding cash merges with the "investment motive" discussed above.[20]

This limitation of interests to a restricted field applies especially to responsible managers of "other people's money." The administrator of a trust fund, for example, is commonly limited to investment in bonds and mortgages. If he happens to see no investment opportunities of this sort in which he has full confidence, he will let cash pile up in the trust account as its present holdings of bonds, and so forth, are paid off—even though he may be *almost* sure of price increases in some corporation stocks, parcels of real estate, or commodities. Corporation managers also may pile up cash because they lack appropriate ways to spend it. A corporation is ordinarily organized to carry on some stated line of business. An oil company, for example, is apt to be actively interested in oil lands, refining facilities, distributing facilities, or securities of other oil companies which it might be useful to control. But if it is not a promising time to buy such assets (and particularly if the company's net income is low, so that it cannot pay large divi-

[20] In many discussions, the investment motive is not given separate handling. There is nothing logically wrong with treating it as a "limiting case" of the speculative motive. But treating the two separately makes the situations we are talking about easier to recognize.

dends without paying out more than it earns), the company may find cash piling up far beyond transactions and precautionary requirements. The officers of the company may feel certain that prices of houses, or wheat, or railway shares, are going up, without feeling free to put the company's cash into such assets. During the Great Depression of the 1930's, when falling prices and business volume reduced transactions requirements much faster than corporate cash balances fell, some classes of corporations piled up large sums in "free cash." [21] Perhaps they did so because the slump intensified the margin-of-safety motive. But, more likely, the reason was bearishness of corporation managers, compounded by limitations on the list of assets thought of as eligible for each company.

Uncertainty in the Speculative Motive. You can't be a bear unless someone else is a bull. If (for example) everyone agrees that a certain railroad share will soon be worth only 80 per cent as much as it sold for yesterday, then today's quotation must be 80 per cent of yesterday's. There is no more room for expecting its price to fall. If at today's price somebody is bearish, this implies a *difference of opinion.* The bear cannot place his bet on a price decline unless somebody is enough more optimistic to bet against a price decline.[22]

Even with such a difference of opinion, the bears may not hold cash *if* the bulls finance themselves by borrowing, from the bears, the cash which the bears would otherwise have held idle! In the late 1920's, when billions of dollars' worth of "brokers' loans on account of others" were outstanding through New York banks, this seems to have happened. But, ordinarily, the bulls cannot draw directly on the cash of the bears for lack of suitable financial machinery.[23] Insofar as the bears are not themselves bulls on other

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[21] See F. Lutz, *Corporate Cash Balances* (New York: National Bureau of Economic Research, 1945).

[22] This argument relates to future prices of assets like securities and storable commodities, which are already in existence. Everybody may agree that strawberries will cost less next year without lowering this year's price.

[23] As may be seen from Part I, banking—which might be thought to constitute such machinery—actually does not. Bankers can't transfer customers' balances to other customers without consent. The mere fact that some customers are accumulating funds does not increase the banks' lending power; for a shift in ownership of deposits leaves total reserves and reserve requirements unaltered. True, if increased bearishness increased the proportion of deposits held as *time deposits* (with lower reserve requirements) there would be an automatic increase of lend-

assets, a sharpening of the difference of opinion means an increased total demand for cash.

Just as different people make different forecasts about asset prices, an individual is likely to make forecasts which are not entirely clear-cut. (Uncertainty may be described as a difference of opinion *within* a person's mind.) A judgment on a particular stock price, for example, is likely to take the form of guessing:

(1) That it is more likely to rise than to fall over the next few months;
but (2) That a fall over the next few months is possible;
and (3) That the price is quite likely to go lower before it goes higher.

The best policy for a speculator is quite different under such a set of guesses than it would be if he knew that the price would rise uninterruptedly, on a stated time-table, for several months ahead.

Speculators rarely "put all their eggs in one basket." Now and then "plungers" stake everything on a bullish or bearish forecast about a particular price. But most speculators mix bullish and bearish behavior at a given time. They *differentiate* their portfolios of property held, trying to include different kinds as well as different degrees of risk.[24] As uncertainty grows, speculators want

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ing power; but, in general, the "bear" has no incentives to make such a shift. He ordinarily expects to use his funds soon enough so that he would get no interest on his time deposits under banking rules, and, in any event, time-deposit interest in recent years has been too low to be very tempting.

Development of a difference of opinion about future prices of assets is likely to bring bankers an increased flow of loan applications from bulls (or from their brokers). If the banks have unused lending power, an expansion in the supply of cash is likely to result. If banks are "loaned up," however, such loan applications can be filled only by denying others, unless the central bank chooses to make more reserves available.

In general, our monetary institutions have evolved in such a way that the shift of cash from bears to bulls, plus the increased money supply generated by bank borrowing on the part of bulls, will fall short of the increased cash holdings desired by the bears. Limits upon borrowing based on stock-exchange collateral or upon real estate also reduce the "liquidity" of such holdings, making them less effective as money substitutes. Intensified disagreement about security prices is, thus, a deflationary factor. On the other hand, speculative assets are apt to be more effective as money substitutes at high than at low prices; so that a stock-market or real-estate boom is likely to be inflationary on balance, up to the point where the price rise has nearly ceased and bearishness increases rapidly.

[24] The speculator's problem in differentiating his portfolio is much the same as that which a banker faces in deciding how to balance his portfolio of assets, except that the range of assets among which the banker has to choose consists almost entirely of various kinds of debts receivable. See above, Chapter I, section D.

a larger proportion of riskless cash in their portfolios. At this point the speculative and margin-of-safety motives converge. A risky speculative position intensifies the linkage of risks. Suppose that a bull speculator has stretched his cash position to the limit and bought stock "on margin." If the price falls, his broker will call for more cash. To raise the cash, he must either disrupt his other operations or sell out and give up his stock speculation at a moment when he is more than ever convinced that the stock is bound to go up.

Near-Moneys in the Demand for Cash Assets. The concept of "cash" or "cash assets" used in this chapter takes in both money proper (coin and paper) and bank deposits.[25] It happens that this usage matches that generally followed in accounting. But the concept of "cash" might have been defined more narrowly (omitting deposits not subject to check) or more widely (including, say, short-term government securities, as do some corporations in their published accounts).

Had a narrower concept of "cash" been adopted, it would have been necessary to talk differently about several topics. But redefining terms does not alter realities, and the substance of the argument must have been the same. In particular, the importance of time deposits as a "substitute" for checking deposits must have been recognized.

Similarly, the fact that "cash" is not defined widely enough to cover (for example) life insurance cash values, savings and loan association shares, and Treasury certificates does not give anybody a license to ignore the monetary importance of such claims. As was pointed out in the Introduction and Chapter II, all debts receivable have some degree of "moneyness."

The question whether a claim can actually be used in payment is important when we ask whether that claim is an effective money substitute for short-term transactions purposes. But insofar as cash is wanted because of the margin-of-safety or speculative motives, direct use in payment does not come in question. An asset can substitute for cash—that is, the more of it a holder has, the

[25] For some purposes (see Chapter IX), it is convenient to include in "cash" the excess (positive or negative) of "accounts receivable" arising from recent sales over "accounts payable" arising from recent purchases. For an economic system as a whole, these two accounts must be equal; thus, "total cash" is the same with or without this inclusion.

less cash he will feel he needs—if it is a *liquid nonoperating asset.*

"Liquid" means that the holder is confident that he can get a stated price for the asset on short notice. Both the certainty of the price and the speed with which it can be realized are matters of degree; therefore, liquidity is also a matter of degree.[26] With cash, liquidity is complete.[27] All debts receivable have some degree of liquidity, shading off as the date of contracted repayment recedes and as the debtor's credit standing becomes more doubtful. "Real" assets, such as real estate and industrial equipment, and "paper equities," such as common shares listed on the Stock Exchange, have much lower liquidity—if the market is imperfect, perhaps almost no liquidity. Inventories of salable goods may have considerable liquidity. Debts payable have *negative liquidity,* varying with date of maturity and probability of being able to renew.

An asset is "nonoperating" if the owner can part with it, and make no replacement, without upsetting his affairs. Many highly liquid assets (such as inventories and debts receivable from customers) are operating assets in the sense that any effort to cash in on them would cut into a firm's ability to sell its products.

Another way of looking at the question whether assets are available as money substitutes is to ask whether their prices are such that the owner will consider selling them. Either liquid or nonliquid assets may be priced so low that the holder thinks they are worth more to keep than to sell—whether he is keeping them for use or for speculation. In some instances, holders set up taboos around certain assets: many life-insurance policyholders simply refuse to "borrow" on their policies, for instance, and plan their affairs so as to avoid doing so in any likely contingency. In other instances (as often with bonds), the owner may be willing to consider selling at high prices (for example, above par), but will regard them as unavailable for sale at a discount—unless he comes to expect a "default" on interest or principal.

There is room for debate as to how far various types of assets are actually regarded by their holders as money substitutes. Short-

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[26] Cf. the discussion of liquidity in banking assets, pp. 55 ff.

[27] This statement might be made a definition of "cash," as it is part of the definition of "money proper" in the Introduction. But it seems to me more sensible to define cash in accounting terms and make this statement as an *approximately correct descriptive statement* about cash so defined.

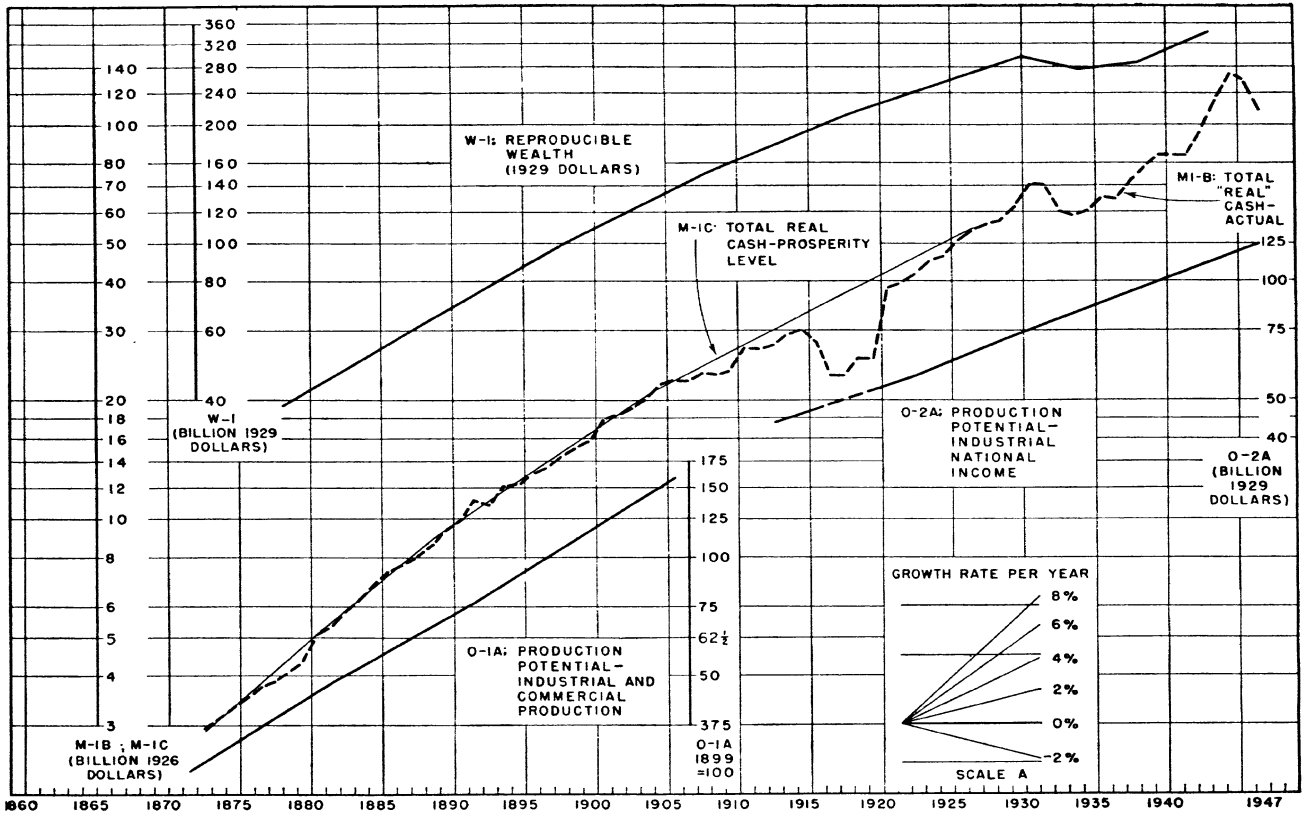


FIG. 12. REAL CASH, WEALTH, AND POTENTIAL OUTPUT, 1873–1947.

term government securities, most observers think, are prized chiefly for "liquidity" and definitely are money substitutes. Life-insurance cash values represent a contractual claim on the insurance company which is clearly very liquid. For some holders these cash values are substantially the same thing as cash in the bank; but it appears that the bulk of these claims may be held by policyholders who refuse to draw on them. A similar conflict of views exists over United States Savings Bonds. Contractually, their redemption value is equivalent to cash in the bank. Some holders rely on this fact to permit holding low cash balances; others choose to treat their bond holdings as sacred.

Being able to borrow at the bank is much the same thing as having liquid assets in reserve. Some business firms, in exchange for a fee paid in advance, have got banks to make binding agreements to lend them certain sums any time the borrowers choose within a stated period. Such a legal option to borrow is a substitute for cash from the margin-of-safety and speculative standpoints. So (though less definitely) is any claim to borrow which a bank is reasonably certain to honor. A firm which has long-standing "customer" relations as a depositor at a certain bank, and which owns unmortgaged real estate, or marketable securities, or inventories with no debts against them, has an effective option to borrow nearly as secure as one expressed in a legal contract. If it is willing to exercise the option, it needs correspondingly less cash.

What is an effective money substitute is a question which must be answered in the light of the way people actually feel and actually behave. But we may be sure both that the list of money substitutes is long, and that the makeup of the list varies a good deal from time to time.

Trends and Fluctuations in Demand for Cash. Some useful clues to the interplay of motives for holding cash are offered by the long-term record of cash holdings. Study of this record (which is presented graphically in Figure 12) can show the scale of the public's demand for cash in periods of steady prosperity, trace a trend between such periods, and locate deviations from trend associated with depressions and inflations.

Since the price level has changed sharply during the period of study (1873–1947), for comparability between the cash holdings of different prosperity periods "deflating" current-dollar amounts by

some index of prices was required.[28] No available price index is perfect for this purpose; I have used the Bureau of Labor Statistics index of wholesale prices, reducing cash holdings to "real cash" in "1926 dollars."

"Real cash" for each year, 1875–1947, and for 1873, is shown by the jagged Curve M-1B in the middle of the diagram. To gauge the trend of the public's demand for cash, the best evidence is behavior in periods of approximate economic stability. This may be taken to mean periods when people could look back on at least a year of high-level production (over 90 per cent of potential) and when prices were not changing faster than 5 per cent per annum. Such periods extending beyond one year can be found in the record only in 1881–1883, 1887–1891, 1903–1906, and 1926–1929. Taking the average of each of these stretches of years as a "prosperity-level" point yields Curve M-1C for 1881–1929. The curve has been carried back to 1873 by taking that year's observation as probably a good approximation to the prosperity level of the early 1870's. No comparable observation later than 1929 is yet available.[29]

By way of perspective for gauging the growth of "real cash," Figure 12 offers curves which trace the growth of "reproducible wealth other than household" (Curve W-1)[30] and of potential industrial output in physical terms (Curves O-1A and O-2A). The potential-output curves are based on the *peaks* of the physical-output series shown in Figure 13.[31] All these curves (like all the

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[28] For year-to-year comparisons, on the other hand—particularly if price changes are brought into the comparison as a separate item—undeflated current-dollar figures for cash are appropriate. Accordingly, this "real cash" series does not appear in the diagrams of Part III, where the stress is on year-to-year changes in the economic situation.

[29] Besides the 3- to 6-year stretches used to locate this curve, the record offers single years which pass the tests of "approximate economic stability" in 1893, 1900, 1910, 1913, and 1923. All these points lie below the curve, although 1893 and 1900 come very close to it.

[30] This series (for Jan. 1, 1879, 1889, 1909, 1919, 1929, and 1939) is from Simon Kuznets, *National Product since 1869* (New York: National Bureau of Economic Research, 1946), p. 228. Interpolations for Jan. 1, 1931 and Jan. 1, 1934, and an extrapolation to Jan. 1, 1944 are my own estimates, based on figures of "net capital formation" from *ibid.*, p. 56. The Kuznets estimates are reproduced with permission of the National Bureau of Economic Research.

[31] The assumption is that the peaks are our best gauge of the growth of the nation's capacity to produce. The steadiness of the growth rates shown between successive peaks gives encouragement to the belief in the reasonableness of this assumption. For discussion, see below, pp. 259–267.

time series graphed in this book) are drawn on a "semi-logarithmic" scale, so that equal rates of growth are shown by equal slopes on the graph.

Comparing the prosperity-level curve for real cash (or, indeed, any other reasonable trend-line for cash) with the wealth and potential-production curves, we can see that they grow roughly parallel. Real cash has tended to outgrow the other series, over the period of observation as a whole, but not at all dramatically.[32] There is no evidence down to 1929 of a great acceleration in the growth of demand for cash, such as would be required to support the hypothesis of some pessimists that there is a "tendency of purchasing power to come to rest." Owing to lack of a statistical anchorage to the right of 1929, it is hard to gauge the normality of the growth since then, but it does not look radically out of line.

The deviations of the real-cash curve from the prosperity level cast interesting sidelights on the demand for cash. Down to 1916, these deviations were relatively small—rarely over 10 per cent in either direction. The trough of real cash in 1916–1920 reflects the World War I inflation—and the reduced intensity of the precautionary and speculative motives for holding cash which is natural when people realize prices are rising sharply. It is the nearest thing we have to a recent observation of the demand for cash on a pure transactions basis. Perhaps the sagging off of the curve before World War I reflects milder effects of the same sort from the "creeping inflation" of 1899–1913. The sharp rise in the real value of cash assets after 1929 reflects acute "bearishness" after 1929, intensifying the speculative and precautionary motives. The trough in 1933 and following years (perhaps in less degree the trough in the 1870's) reflects the low ebb of transactions needs in an acutely depressed economy. The leveling off of 1941–1942 probably reflects a mixture of rising transactions requirements with the effect of inflation on the precautionary and speculative motives. The sharp rise in 1943–1945 is the effect of wartime growth of cash under price control and rationing: "sup-

[32] If we put cash and reproducible wealth both into "1929 dollars," reproducible wealth was rather over four times cash in 1881, about three times cash in 1905, about two and one-half times cash in 1929. This result suggests, if anything, that the growth of demand for cash had a sharper "retardation" than the growth of wealth.

pressed inflation," with prices simply not allowed to rise even though people had more cash than they felt they needed. The fall in 1946–1947 reflects the postwar inflation, with the end of price control releasing price-raising forces pent up during the war, while the growth of cash assets (measured in current dollars) was very modest.

Adequacy of Cash Assets and Economic Behavior. In view of the motives for holding cash assets which we have just examined, there must be some quantity of cash assets which would just suit each household and business firm in the economic system. Suppose that the actual amount held does not match this required quantity. How do the managers of the firm or household come to notice the discrepancy? And what will they do about it?

To begin with, we must not suppose that each holder of cash keeps his eye every moment on a figure stating how much cash he thinks he ought to have, and revises that figure every little while. He may do this if he is acutely *short of cash*. In that case, he is likely to adopt a deliberate policy of building up his cash assets, and take this policy into account in nearly all business decisions. But if he has *more cash* than he needs, he is not likely to have a deliberate policy of reducing cash assets. Rather, an excess of cash allows him to leave his cash position pretty much out of consideration in making many decisions.

As a matter of general experience, anybody who does not consciously try to conserve cash finds it "slipping between his fingers." As opportunities to buy things turn up, there are always plausible arguments in favor. But anybody who says "yes" too easily to suggestions that he buy things will presently find himself "illiquid." He may have got good value for his money transaction by transaction. Yet in the end, he will find himself surrounded by heaps of possessions—which he cannot use effectively because lack of cash keeps him from buying a few more things which he needs to help him use what he already has. (One form of this trouble is called being "land-poor.")

To keep this misfortune from happening, both firms and households set up barriers to the outpayment of cash—and to the piling up of debts calling for cash settlement in the near future. During the Great Depression, for example, many firms required all purchases in lumps exceeding (say) $50 to be authorized by an official

(generally the "controller") who was assigned as watchdog for the cash balance. Similarly in most households, any outlay which involves in one lump a substantial fraction of the next week's or month's income is generally held up until the cash position has been recalculated for at least a few weeks ahead.[33]

We must look for the effects of the cash position, therefore, in the tightening or relaxation of these barriers to purchases. If cash is scant, management must tighten its controls. If cash is ample relative to requirements, management can ride with a loose rein. This question of the way the cash position affects decisions will come up again below in Chapter X.

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Note on Alternative Points of View and Supplementary Readings

The classical statements of the cash-balances point of view will be found in:

A. Marshall, *Money, Credit and Commerce* (London: Macmillan, 1923), Chapter 4.

A. C. Pigou, "Value of Money," *Quarterly Journal of Economics* (1917–1918), pp. 38–65.

J. M. Keynes, *Tract on Monetary Reform* (New York: Harcourt, Brace, 1924), pp. 81–95; *Treatise on Money* (New York: Harcourt, Brace, 1930), Chapter 14.

For a tracing of similar points of view in French and Austrian economics, see A. W. Marget, *Theory of Prices* (New York: Prentice-Hall, Vol. I, 1938: index references under names of Menger and Walras), and "Leon Walras and the 'Cash-Balance Approach' to the Problem of the Value of Money," *Journal of Political Economy*, 1931.

Perhaps the most useful statement of this approach is J. R. Hicks, "A Suggestion for Simplifying the Theory of Money," *Economica*, February 1935.

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[33] As the general theory of economics emphasizes, no household or firm can afford to buy *everything* that promises to have any usefulness. Resources are limited. Therefore, we have to compare, and reject some things that will be useful because, if we buy them, we shall forego the chance to buy other things that will be more useful still.

In a household, the underlying limitation on purchases is "income." But in any particular week or month, purchases can exceed income if it is a good policy to reduce cash assets or run into debt. (Such a policy, of course, reduces ability to buy later on.) Thus, bringing the cash position into decisions on current outlays is unavoidable. For firms, the argument runs roughly parallel.

— *Chapter IX* —

ANTICIPATIONS AND SURPRISES

The Dynamic View of the Flow of Payments. Chapter VII dealt with the flow of payments along Keynesian lines. The Keynesian tradition, as was mentioned toward the end of the chapter, limits its applicability by dwelling too much on "equilibrium." Actually, the forces which it analyzes are bound to set up fluctuations in the economic system, and are far from certain to lead to establishment of an equilibrium. Thus, we are forced to ask how the flow of payments works when the economic system is out of equilibrium.

The clue to dynamic analysis of payments lies in a very simple idea which we owe to the Swedish economists—that of looking at all transactions both *ex post* and *ex ante*. In the *ex post* view, we look back in time upon the transaction, treating it as part of *experience*. In the *ex ante* view, we look forward at the transaction, from the standpoint of some dealer who *expects* to take part in it. The difference between the expectation and the outcome—a difference which does not exist in equilibrium [1]—must be taken into account in figuring out what will happen next.

The Cash Account. Either *ex post* or *ex ante*, the rules of accounting require "balance" in the accounts we draw up for firms, households, and government. That is, the items we enter on the left-hand side (for example, assets) must add up to the same figure as the items we enter on the right-hand side (for example, liabilities). This balance is brought about simply by the inclusion on one side of the account or the other of a "residual" item which is just enough to make the total on its side balance the

[1] An equilibrium outcome from the working of economic forces is perhaps best defined as an outcome *which, if expected, will happen*. The cruder conception of an equilibrium outcome as one which, if it happens, will go on happening (until some of the determining circumstances change) is approximately the same idea in disguised form.

other side. (For example, on an account of assets and liabilities, "net worth"—defined as the excess of assets over liabilities proper —is included on the liability side.)

This rule of balance applies in particular to cash accounts.[2] On the left-hand side of the account for any firm or household we enter:

Cash held at the outset;
plus receipts from sales of goods and services;
plus receipts from dividends and other remittances of profits from other economic units;
plus receipts from financing (borrowing or sale of securities);

adding up to total cash receipts plus initial cash. On the right-hand side of the account we enter:

Payments for purchases of goods and services;
plus outpayments of dividends, and so forth;
plus outpayments for financing (lending, repayment of borrowings, purchase of securities).

This total is bound to fall short of the left-hand total by just the amount of

Cash held at the end of the period studied.

Final cash, thus, constitutes the residual item which, if entered on the right-hand side, will make the account balance.

If we group firms or households together, the same rule of balance must apply to a combined cash account—obtained by taking the sum of like items from all the members of the group. The reason is simply the mathematical rule about "equals added to equals." This chapter rests chiefly on such combined accounts.

Balancing Cash Accounts Ex Post and Ex Ante. The principle of balance in the cash account applies both *ex ante* and *ex post*. For any firm or household, the cash account for (say) July

[2] For analysis, it is simplest to regard short-term debts arising from sales of goods and services as constituting receipts from the sale of goods for the sellers, and as outlays for the buyers. "Accounts payable" (or receivable) are thus treated as a form of cash. This procedure is necessary beause most sales are initially settled by setting up such debts. (Cf. Introduction, p. 15.) Borrowing on a promissory note, however, is regarded as "financing." This way of using terms is arbitrary but convenient.

must balance as drawn up in anticipation on June 30, and also as drawn up in retrospect on August 1. Therefore, if we add up the corresponding items in the cash accounts of all the firms and households of a nation, we must also get a balance either *ex post* or *ex ante*.

In the *ex post* accounts, since they deal with actual events, items which enter the accounts of more than one unit must appear at the same figure in both sets of accounts. The amount which a retailer paid his wholesaler for a case of canned peaches, for example, is the same on the books of both retailer and wholesaler. The amount which the retailer borrowed at the bank is the same on his books as on the banker's books; and so forth. This standard of consistency does not apply to the *ex ante* accounts, however. The retailer's plans may contemplate a higher price on the case of canned peaches than the wholesaler plans to charge. Or the wholesaler may not plan to sell them even though the retailer expects to buy them. The only item in the *ex ante* accounts for which we can guarantee consistency is the initial cash position—the one item in these accounts which is necessarily the same as the corresponding item in the *ex post* accounts, since it is already determined when the estimates are drawn up.

There is an important difference between the *ex ante* and *ex post* relations of savings and investment.[3] The rules of consistency which govern *ex post* accounts require that in these accounts the sum of saving and taxes must match the sum of government expenditures and investment. The reason is simply that we start from accounts on which the value of the national product equals the value of expenditure upon that product, and subtract identical figures for consumption from both sides of the accounts. It is for this reason that such a savings-investment balance is assumed to exist in equilibrium. But it also applies by hindsight *(ex post)*

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[3] Note that neither savings nor investment appears as such in the cash accounts. Income, roughly, is for households the amount received from sales of currently produced goods and services (consisting chiefly of wages, salaries, and profits withdrawn from business); to which must be added the excess of business profit over amounts withdrawn. Savings is the excess of this figure over household outlays for current consumables. Investment consists of any household outlays for goods not classified as current consumables, plus additions to inventory, plant, and equipment by businesses. There is a non-cash element both in profits and in additions to business inventory, plant, and equipment.

to periods during which the economic system was not in equilibrium.

In periods of disequilibrium, however, *ex ante* savings-plus-taxes need not match *ex ante* investment-plus-government-expenditures. As J. M. Keynes pointed out in his *Treatise on Money*,[4] decisions to save are primarily taken by consuming households, decisions to invest by business firms. Since taken by different people under the sway of different motives, the two sets of decisions cannot be expected to match with perfect smoothness. The matching in the event is brought about by a Procrustean process which makes people do otherwise than they had intended. This process will be discussed below.

Rough Fulfillment of Expectations for Short Periods. If we look ahead a short while (say, a month), the general course of economic events is almost sure to be roughly as anticipated by the managers of the business firms and households that make up the system. Each firm or household plans to pay out approximately as much as it receives. If we are dealing with a short enough period so that there is not room for actual disbursements to diverge far from plans, there will necessarily be about enough paid out to fulfill expectations for receipts.

Plainly, there is some slack in this calculation. Even though total receipts may be as expected, many particular firms and households may find the outcome very different from expectations —some having more, some less. The equality of planned expenditures and actual receipts is not exact. Even within such a short period as a week or a month, plans for disbursements will not be followed precisely. The difference between complete fulfillment and "rough fulfillment" of expectations may substantially affect operations after the end of the period. This line of inquiry will be followed up in the succeeding sections of this chapter.

Meanwhile, the consequences of rough fulfillment of expecta-

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[4] London and New York, 1930; especially Volume I, p. 175. In his *General Theory of Employment, Interest and Money* (1936), Keynes repudiated the idea that savings and investment could diverge, and insisted on their necessary equality. One of the oddest features of monetary discussion since 1936 has been the reluctance of Keynes and his followers to admit that the correctness of Keynes's 1936 statement *on an ex post basis* did not require repudiation of his 1930 statement construed *on an ex ante basis.*

tions must be traced through. Some of these consequences are rather striking.

1. The general *level of physical activity* (production and sales) during a "month" will roughly match expectations held by business at the start of the month. If businessmen are convinced that they are in a depression, and plan business outlays accordingly, a depression it is; and correspondingly with prosperity.

2. Any substantial *rise or fall in the physical volume of activity* during a "month" must also go back to a general expectation of such a rise or fall in the minds of the business community. Secondary expansion or contraction [5] may happen as a result of unanticipated events, of course. But, broadly speaking, if the month is one of economic upswing or downswing, the swing must have been built into business plans at the beginning of the month.

3. Similarly, any marked *rise or fall* during the month *in prices* at which currently produced [6] goods and services sell must have been built into business plans at the beginning of the month.

4. Further, a high or low *level of profits* during the month will reflect an expectation of high or low profits at the beginning of the month.

Inconsistencies of Expectations and Surprises. The next step of analysis is to go behind the "roughness" in the correspondence of outcome and expectation, and ask why any divergence is possible. The answer is that expectations are often *inconsistent* —either with each other or with some external realities. For instance, a new firm may expect to sell next month some goods which nobody is yet planning to buy, contact with customers having not yet been established. An existing firm may be planning to fill an order which the customer is planning to cancel. In such

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[5] It is hard to believe that the rate of production, employment, and so forth, over the economic system as a whole can diverge by more than 1 per cent or even ½ of 1 per cent from expectations held a month earlier, except in case of war or major natural catastrophe—possibly, one should add, in case of unexpected major labor disputes. But a divergence of more than 1 per cent from the previous month's seasonally adjusted annual rate, reflecting the execution of business plans previously existing, is far from rare.

[6] Prices of *previously existing* goods (real estate, securities, used automobiles and machinery, or crops in storage such as wheat and cotton) sometimes jump unexpectedly, however. In fact, a generally anticipated change in such prices involves a paradox. (If people in December agree that wheat in January will sell 50 per cent above the November 30 price, then wheat will be about 50 per cent above that price in December.)

cases, plainly, one or both of the parties to the prospective transaction will find things turning out unexpectedly. Surprises are also in the books if (to give a different kind of case) the total of the final cash balances which all dealers expect to hold at the end of the month diverges from the amount of cash that is going to exist.

It is possible to map out sources of surprises in some detail; but the process is so laborious that only a few results can find space here.[7] To give a definite focus, attention will be concentrated on surprises as to the amount which business receives from sales of current output to nonbusiness groups.

To begin with, it must be stressed that each firm's receipts depend on the outpayments of other firms—to a very small degree, if at all, on its own outpayments. Firms which are overoptimistic and expect more receipts than they are destined to get, budgeting their outpayments in the light of these overoptimistic estimates, are laying up unpleasant surprises for themselves but pleasant surprises for other firms.[8]

If there is any general departure from initial plans for outpayments by business to nonbusiness groups (particularly for income payments), receipts will tend to diverge from expectations in the same direction.

If plans of businessmen for inter-firm dealings do not match, surprises will result—not only on inter-firm markets but also on the markets where business firms sell to nonbusiness groups. The reason is that the outpayments of firms which expect to make sales to other firms are based on their own estimates of sales—not on the unknown estimates of their customers. Thus, if the prospective sellers estimate inter-firm dealings at less than the prospective buyers, total business outpayments to nonbusiness groups will be inadequate.

Surprises may also result from monetary forces.[9] If business on the whole plans to expand its cash balances, but the monetary

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[7] For more details and a statement in algebraic form of the underlying reasoning, see Appendix B.

[8] *Exception:* If the overoptimistic firms revise their plans in the course of the period under study and dump inventories—selling more than expected at a lower price than expected, and taking in more cash than expected—they may generate unpleasant surprises for others without having pleasant surprises themselves.

[9] Besides the factors discussed in this paragraph, financing of business by households and by banks comes in question; such financing is passed over here for simplification, but see Appendix B.

situation does not bring about either an increase of total cash or a reduction in the cash of nonbusiness holders, receipts from sales will fall short of expectations. In the other direction, if business plans to have constant or declining holdings of cash while total cash increases (or the cash of nonbusiness holders falls, or both), receipts will exceed expectations and there will be pleasant surprises. This fact is interesting in relation to the government's tax and expenditure policy. For, if the government has a deficit, the result must be either a depletion of its cash holdings or "creation of credit" by the government directly or by banks for the government's benefit.[10]

Revision of Estimates in the Light of Surprises. Whatever estimates of the future businessmen carry into a month, these estimates are bound to be revised in the light of experience. Broadly, if experience during a month diverges from expectations held at the beginning of the month, estimates for later months will be revised in the same direction.[11] Thus, if business entered July expecting an upswing of sales for both July and August, pleasant surprises during July will reinforce the expectation of an upswing during August. Unpleasant surprises will weaken this expectation—or even cause it to be replaced by the expectation of a downswing. Needless to say, in any month we must expect to find some firms undergoing pleasant surprises and revising further estimates in an optimistic direction, at the same time that other firms are undergoing unpleasant surprises and making pessimistic revisions.

Not all the experience that goes into the revision of estimates, of course, is market experience of the firms whose estimates are

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[10] See above, pp. 115–118.

[11] If we think in terms of receipts from sales to nonbusiness groups, however, an exception must be made on account of inventory policy (cf. note 8 to the preceding section). With aggregate receipts from sales just as expected, some firms observing their particular markets weaker than expected might reap larger-than-expected receipts by selling off inventories at prices lower than they had expected to charge. If so, they would be unpleasantly disappointed as to markets but not as to receipts. But their sales, draining receipts away from other firms, would give the other firms unpleasant surprises both as to receipts and as to markets.

In the other direction, if some firms in the light of favorable experience decide to hold more in inventory than they had planned during the current interval (in hopes of sales at better prices later on), they may have pleasant surprises as to markets although receiving less than expected from sales. By driving away customers, however, they will create pleasant surprises for other sellers.

in question. Political news, for instance, affects business estimates. The views of professional forecasters, engineers, and so forth, looking into the longer future may lead business to revise estimates even though recent experience followed expectations. Furthermore, each firm has some idea of the experience of others. If its own good or bad luck seems exceptional, it may not be good sense to expect good or bad luck to continue.

In looking at estimates of the future, it is important not only *in which direction* opinion expects affairs to go, but also *how closely different people agree* and *how confident* they are of their estimates. If recent events have been far different from expectation, people are unusually likely to hold different opinions of the future, and unusually likely to feel uncertainty. For reasons examined in Chapter VIII above, such developments will increase the demand for cash assets—producing the sort of situation in which unpleasant surprises are likely to occur in the next month.

The effect of experience on estimates may vary a great deal with circumstances, and especially with people's notions of what is "normal." Shortly after a war, for instance, a conviction that prices are abnormally high is likely to be widespread. In this case, a drop in prices is apt to lead to a downward revision of price expectations for some time ahead. A rise, on the other hand, may lead people to think prices will go higher before they drop; but estimates of prices more than a few weeks ahead are likely to be unaffected. (*Either* a rise or a fall of prices in such circumstances is likely to generate differences of opinion about future developments, thus increasing the proportion of dealers who take "bear" positions.)

In a depression, if prices are felt to be subnormal, and there have not been major declines in the last few weeks, it may be easier to set up expectations that a rise is near than that there will be a further fall. On the other hand, if the optimists have several times had lively hopes of general economic recovery blasted (as happened, for example, in 1930, 1931, and 1932), faith in "normality" may fade. This sort of experience is probably one reason why recovery from long depressions is so difficult.

Revision of Plans in Light of New Estimates. How business operates in any month depends primarily on the plans with which it entered the month—which, in turn, go back to previous esti-

mates. The outcome will determine further estimates, which will lead to further plans, which will guide further operations. It is by this chain of argument that "dynamic" monetary theory must proceed.

In an uncertain world, estimates and plans are always more concrete for the near future than for later dates—for next month, say, than for the ensuing month. But in entering a month (say, July), business may be viewed as having not merely a fairly detailed plan for July, but a less specific *provisional plan* (based upon provisional estimates) for August.

When provisional estimates are revised, provisional plans have to be readjusted. But many elements of plans for the next few months are already pretty well settled by past decisions. A firm which is a "going concern" has contracts, goods in process, stocks of perishable supplies calling for use, and commitments to employ labor which leave little freedom as to how much is to be produced in the next few weeks or months. For output of the near future, which already exists in partly finished form, most costs are already "sunk," and can be recovered only by incurring whatever extra costs are needed to finish the output ready for sale. There is somewhat more freedom in purchases of materials and labor than in output, since much of the materials and labor are for use in production of goods which are not yet far advanced toward completion. But even so, input of perishable goods and of services (especially labor) can rarely be changed quickly and drastically without gross inefficiency.

There is much more freedom, of course, to make sharp changes quickly in plans for investment. Here there are two quite distinct problems—investment in durable goods (houses, or business plant and equipment) and investment in inventories.

Looking first at the durable goods, the rate of *completion* of such goods is always rather rigidly fixed for some weeks or months ahead, for the same reasons which limit short-term flexibility in output of other finished products. Most of the work involved in building the houses (for example) which will become ready for occupancy next month is already done. Even though revised estimates may be much more pessimistic about the sales price or rental value of the finished house, it is worth while incurring the last 10 per cent or 15 per cent of costs to bring the result of the "sunk"

85 per cent or 90 per cent of costs to the point where the house is usable. In the other direction, even though revised estimates are much more optimistic, not much can be done at reasonable cost to bring more houses than planned to the point of habitability within the next couple of months.

On the other hand, the volume of investment is not so much a matter of *completion* of construction, and so forth, as of *work done* during the period under study. The work done may be altered both by changing the pace of construction on projects under way, and by altering the rate at which new projects are launched.

On the inventory side, there is a great deal of scope. As has already been mentioned, firms that have salable products on hand or in production may try to hurry their sale by price cuts, or may mark up prices and hold unsold goods for later sale. Similarly, supplies bought may be held in storage or may be put into processes leading to sale (if the supplies are technically finished goods, such as shoes bought by a department store) or into processes of further fabrication. Decisions to change the rate of future output show up in the important component of inventories called "goods in process." If output is expanding, it is necessary to "fill the pipelines" (as we said during World War II). Until the bulge in production reaches final markets, we have an increased flow of personal incomes while the corresponding increase in output appears in the "goods in process" part of the inventory account rather than in salable output. In the other direction, if output is shrinking, we have personal incomes declining relative to the flow of salable goods, the effect on output appearing as a decline in inventories of goods in process (disinvestment).

The *sensitivity* of investment plans to changes in estimates varies greatly from one firm to another and from one time to another—particularly for investment in durable plant and equipment. Some firms, always, are in a position where their operations strain their facilities; others are operating at a rate which leaves plenty of room in their buildings and plenty of unused capacity in their equipment. The latter are pretty sure to be *insensitive*—planning little investment whether they expect an improvement of business or not. The former—those that can see their way to lower operating costs or more output if they can en-

large their buildings or put in more machinery—are likely to be *sensitive.* If their estimates grow more optimistic, their investment plans are likely to expand; and if estimates grow more pessimistic, their plans contract.

These differences in sensitivity make it quite important in what industries pleasant surprises are being experienced and in what industries unpleasant surprises.[12] They also imply a marked difference in the responsiveness of investment under varying conditions. In a time of high prosperity when most business is active and a great deal of investment in plant and equipment is in progress, investment is likely to be highly sensitive to bad news. In a time of acute depression, when most businesses have excess capacity, investment may be highly insensitive to good news or bad.

Unintended Investment and the Equalization of Saving with Investment. From the discussion above, it will be plain that investment in inventories may be *unintended.*[13] If business as a whole is trying to reduce output (incidentally reducing its inventory of goods in process), the result is likely to be sales below estimates. For the process of cutting down output involves many of the factors listed above as likely to produce unpleasant surprises on selling-markets. In such circumstances, business firms are likely to plan on increasing their cash holdings.[14] At the same time, the

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[12] The accidental distribution of surprises which are more or less pleasant than the average among firms of greater and less sensitivity may explain a good deal of the "wobble" which is commonly observed from month to month in such series as "construction contracts awarded."

[13] By "unintended" is meant here an act which is carried out reluctantly and in opposition to the plans for the current period which existed a few days earlier. Obviously, investment in inventories can rarely be involuntary in the extreme sense of running against an *unconditional* refusal of the firm to invest. When a firm is piling up inventory, it ordinarily could pile up less by making larger price cuts. Ordinarily, then, unintended inventory investment may be interpreted to mean acceptance of more inventory than had been planned *in preference to the greater evil,* of making greater price cuts than had been planned.

Investment can be involuntary, in a sense, without being unintended. A firm is sometimes forced into investment to meet competition, when it would prefer not to invest if its competitor would likewise refrain from investment. This may be the case, for instance, with many of the recent installations of escalators in department stores. Investment of this sort may be described as "defensive"; but it is not unintended in the sense of departure from immediately previous plans.

[14] Ordinarily a firm which is reducing its output does not aim to reduce its "net working capital"—that is, the sum of its cash, debts receivable, and inventories *minus* its short-term debts payable. If the inventory component is planned to shrink, the firm is presumably planning either a growth of cash or debt retirement, or both.

process of cutting down output is apt to involve net credit contraction at banks through repayment of loans; and consumers are apt to be scared into trying to build up their cash assets.[15] If consumers are not willing to spend as much as it takes to fulfill business expectations for sales, sellers of goods must cut their prices more than planned, or accept an unintended growth of physical inventories of salable goods, or both—ordinarily, both. The result is that inventories of goods in process *plus* salable goods shrink less than intended, and total investment is greater than planned.

This unintended investment is one side of the process by which investment and saving are brought to *ex post* equality when there is an excess of *ex ante* savings. Two other processes are involved as well. One is an unintended reduction of savings, when some households and some businesses find their incomes less than they expected when they laid their savings plans. The other is increased absorption of savings by government, on account of the decline of national income which results from the other adjustment processes; for a decline in national income cuts into government revenue and increases certain government outlays.

If there is an excess of planned investment over *ex ante* savings, the process works in reverse. Any effort of business to expand production and, incidentally, to expand inventories will raise consumers' incomes, and will tend to make business sales exceed expectations. Thus, an unintended reduction of inventories of salable goods comes in to reduce investment below plans; while there will be unintended increases in savings and reductions in the absorption of savings by government.

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Note on Alternative Points of View and Supplementary Readings

This chapter reflects in good part the views of E. Lindahl, *Studies in the Theory of Money and Capital* (London: Allen and Unwin, 1939), Part I. For a review of Lindahl from a Keynesian standpoint, pooh-poohing the importance of "ex ante" analysis, see A. P. Lerner, "Some Swedish Stepping-Stones in Economic Theory," *Canadian Journal of Economics and Political Science,* November 1940, especially pp. 587–591.

[15] In the other direction, unemployment may be forcing some consuming households to reduce their cash; and effects of unemployment on the government budget may be leading government to reduce its cash holdings or to increase the total cash supply by borrowing at banks.

— *Chapter X* —

INFLATION AND DEFLATION

A. How Price Levels Change

Job of the Chapter. The object of this chapter is to apply the argument of Parts I and II to the well-known problems of inflation and deflation. But inflation and deflation as such have to be postponed to the second half of the chapter.

The reason for this delay is that something more must be said about the price level. As I pointed out in Chapter IV, monetary theory started out as an effort to explain the price level, but has grown into something quite different—primarily an explanation of the volume of production and employment. This statement implies that something other than monetary theory must be called in to explain price levels; and to define these additional factors is the job of the first half of the chapter.

Passive versus Administered Prices. So far in this book, I have treated price changes as *results* rather than as *causes* of monetary developments. I have allowed for the fact that "rigidity" keeps some prices from moving as fast or as far as others in response to inflationary or deflationary pressure. But should we not allow, too, for the possibility that the decisions which set prices for commodities and services may lead to changes in price levels not chargeable to monetary forces? I think so.

It was natural for economists to think of price levels as passive when they thought of individual prices as the resultant of more or less impersonal market forces. But today we think differently about individual prices. There are some markets still where sellers decide what quantity of something they are going to sell, throw that quantity on the market, and let the market decide for them what the price is.[1] But most transactions are on markets

[1] A typical example of this sort of pricing was the practice of shipping livestock to market "on consignment" to an agent. The shipper would receive whatever

where somebody *decides* consciously what the price is going to be.

1. Sometimes one dealer decides unilaterally about the price. For example, sellers of standardized commodities ordinarily set prices and sell what they can at those prices—sometimes changing the price after a while if sales are better or worse than expected by a wide margin. Another example of unilateral decision is the system of standard rates of pay commonly set up by employers who have large staffs doing fairly standardized work and not covered by collective-bargaining agreements.

2. Sometimes prices are set separately for each transaction by individual bargaining between buyer and seller. This happens when contracts are let for construction of buildings, or when orders are placed for machinery built specially to fit the buyer's requirements.

3. Sometimes prices are set for a whole series of transactions by negotiations between buyer and seller. A wage agreement reached by collective bargaining sets "prices" for the man-hours of labor to be bought by the employer. So does a contract between an employer and an individual specialized worker, reached by individual bargaining. Similar contract prices are set for power, use of hired trucks, automobile parts, and many other things. These contracts, unlike those for new buildings, and so forth, often set the price but leave it to the buyer to set the quantity.

4. On all these types of markets, government sometimes intervenes to set top or bottom limits to the prices reached by private decisions.

All these types of price decisions can be influenced by the monetary situation. The prices arrived at will be different if there is unemployment and deflationary pressure on prices from those reached when employment is good and there is inflationary pressure on prices. But something is left out if we describe these decisions simply as reactions to the monetary situation. Pricing has a momentum of its own. The same monetary situation may yield different results if pricing is carried on differently.

In this half of the chapter, I will try to describe the major non-

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his agent could sell for, less shipping costs and his agent's commission. Occasionally the shipper would get a bill for expenses exceeding the value of his shipments, instead of a check.

monetary influences which give pricing this independent momentum, and to show how the reasoning of earlier chapters must be adjusted. Space is short, and many of the questions are unsettled in the minds of economists. Unavoidably, my account will be incomplete. Probably errors of analysis are more common in this discussion than in most parts of the book. But the error of refusing to analyze these questions would do more damage than any reasonably likely error in analyzing them.

Costs in Commodity Pricing. Sellers of commodities who are in a position to decide about prices [2] commonly think in "cost-plus" terms. "Cost," for this purpose, means operating costs, which are directly linked with the commodity sold. The "plus" is a margin to cover overhead costs and profits.[3]

For sellers in this position, two broad types of cost situations call for analysis:

1. Sometimes the chief direct operating costs are for labor at fixed wage rates (or for a combination of such labor with materials which have "rigid prices"). This situation points to fairly stable direct operating costs per unit of output—a common situation in the manufacture of metal products and other highly finished goods.

2. Sometimes the chief direct operating costs are for materials which have "flexible prices." This situation is common in merchandising, and in lines of manufacturing (such as meat packing and butter and cheese making) where farm products are the main materials and processing is not very expensive.

Taxes which are based on physical quantities sold or on dollar

[2] That is, sellers who (1) have a good deal of power to alter their rate of sales by varying production, or by varying purchases of merchandise; and who also (2) do not deal on markets so impersonal that, if their prices are at all above the market level, they can find no buyers.

Farmers are unable to decide about prices on both counts; the most they can do is to hold goods off the market while waiting for a price rise if they think prices are too low, and even here they have little scope. Most sellers of manufactured goods (including most processed farm products) have such freedom, however.

[3] The relation of this view on pricing to the "marginalist" view expressed in most textbooks on "price theory" calls for comment. I am myself a marginalist, and believe that the two points of view match pretty well *when allowance is made for anticipations and uncertainty.* For monetary analysis, I think that the "cost-plus" approach (with the marginalism between the lines, as it is in much business thinking) gives simplifications without serious loss of analytic accuracy. This is not the place to attempt a detailed reconcilement of the two approaches.

sales go into direct operating costs also, under both patterns. Cost pattern (1) is apt to lead to rigid prices. Under pattern (2), prices are commonly fairly flexible; but often the *markup* (spread between the cost of material and the price at which sales are made) is rigid. (For instance, the spread between wholesale pork prices and stockyard prices of hogs, expressing both per pound, is much more stable through time than either of the two prices.)

Under pattern (2), changes in cost due to buying-prices of the goods purchased ordinarily are passed on to customers through selling-prices. The price-change normally attaches itself to the specific physical assets to which the buying-price change applied, so that we expect to find selling-prices lagging behind buying-prices.[4]

Under pattern (1), changes in operating costs which seem likely to be *permanent* go quickly into pricing formulas—especially if the cost change applies both to the firm making the decision and to its closest competitors. Prices are not very "rigid" in face of such cost changes. On the other hand, changes in operating costs which look *temporary* are ordinarily ignored in pricing policy. If a firm has to work its staff overtime at time-and-a-half wage rates to catch up after a mechanical breakdown, the extra cost will not enter into price. But if the firm makes a new contract with its union workers at higher wage rates, it will refigure its costs and raise prices if costs are sharply increased.

This difference in reaction to temporary and permanent changes is partly due to the desire to save cost and trouble within the firm, partly to the attempt to avoid unsettling customers' ideas. A change in the firm's price list involves a printing bill, meetings with salesmen, a lot of explanation to customers, and so forth—too much fuss and expense to be worth while if it must all be done

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[4] It might sometimes be better business for the firm involved (a department store, say) to price on a *replacement-cost* basis, raising the prices of goods on sale at the moment when goods bought begin to cost more. The chief reasons for sticking to acquisition-cost seem to be: (1) business routine; (2) effects on competitors' behavior. In terms of business routine, changing prices on goods which already have price tags on them is bothersome, expensive, and upsetting to cost-account systems; insistence on pricing goods on a basis of acquisition cost sometimes goes so far that identical items bear different price tags because they came in different batches purchased. In terms of competitive behavior, tacit agreements among competitors to apply standard markups are apt to be upset if the acquisition-cost basis is dropped; and a period of "cutthroat competition" may result.

over again shortly because the situation is temporary. Perhaps more important, customers who expect steady prices are easier to deal with. Any price change which is not evidently due to fairly permanent changes in the basis of price policy will set customers wondering what will happen next. If prices are cut, customers may postpone buying in hopes of a further cut; if prices are raised, they may start looking harder for other sources of supply.

So much for the cost side of cost-plus pricing. But what about the "plus"? Is it so calculated as to offset cost changes?

The items which the "plus" is intended to cover—overhead and profit—do not vary parallel with output. Some of them are lump sums which are the same for a small as for a large output, like managerial salaries or bond interest. Some of them are "joint costs" of several kinds of output and can be allocated only arbitrarily, like that of heating for a factory in which many outputs are produced. How much is charged *per unit of output* depends partly on the number of dollars-per-month to be covered, partly on the number of units-of-product-per-month over which the charge can be spread.[5]

Pricing policy may be based on a high "break-even point"—that is, may be designed so that the unit charge for overhead and profit multiplied by the amount of output will yield a loss unless output is large. Or a low "break-even point" may be adopted, in which case profits are huge if it proves that a great deal can be sold at the price set. The break-even point assumed in price policy will reflect a compromise between the sales volume *expected* and that regarded as *normal.* A firm expecting abnormally large sales next season may be willing to price on a lower margin over unit operating costs than when it expects smaller sales; but it is likely to be less willing to commit itself to a high break-even point in output than if it expected very large sales to become normal.

All this discussion so far is about the prices that sellers *would like to charge.* It often happens, however, that sellers feel forced

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[5] The margin *per unit* is affected to some extent by standards of "fairness." A firm's management may balk at cutting its gross profit per unit below a given minimum, and may feel that it would be unfair (or costly in the long run to good will with customers and with the government) to push gross profit per unit above a given maximum—whatever short-run profit opportunities may say.

to charge less.[6] Sometimes they try prices figured on a cost-plus basis and find that they will not work. If sales are so slow that the break-even point cannot be reached, it is often better business to take the loss by selling a great deal at unexpectedly low prices than by selling unexpectedly little at the intended price. Unpleasant surprises as to sales volume thus lead to price cuts.[7] Department stores, for instance, ordinarily price new goods on a cost-plus basis; but after the goods have been in stock a while, any unsold remainder go "on sale" at a reduction. Thus, "averaged realized markups" fall short of "initial markups." Often, of course, sellers can see in advance that cost-plus prices figured by "normal" formulas will prove too high. If so, it is often less unprofitable to offer a frankly unprofitable price in the first place and sell a moderate amount than to charge a price that "ought" to be profitable and sell too little to approach the break-even point.

The "plus" element in cost-plus pricing, then, is not so immovably fixed that we can ignore possible variations in our further analysis. But neither is it so supple that we can expect cost changes to leave pricing unaffected. Unless there is special reason to the contrary, we must expect changes in business operating costs to be passed on in pricing.

Wage Determination. The most important factor in costs is the level of wages.[8] If wage rates per man-hour in any industry rise faster than output per man-hour, the result is the kind of cost increase which comes through into prices. On the other

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[6] Here is where "marginal" considerations begin to creep in between the lines; cf. footnote 3 above.

[7] Price increases in response to unexpectedly good sales are apparently much less common.

[8] In 1946, "compensation of employees" for all American business was $91.4 billion; depreciation and similar charges, $11.0 billion; business taxes entering costs (that is, not counting profits taxes), $16.9 billion; net interest, $2.3 billion. The total is $121.6 billion—which may be interpreted as aggregate cost, *canceling out* materials the purchase of which was cost to one firm but receipts to another. On this net measure of costs, compensation of employees is over 75 per cent.

If we padded total costs by throwing the materials back in and disregarding the duplication, we would, of course, find "direct labor cost" much lower—well below half of the resulting gross total. For corporations, total sales were $245 billion and profits (before taxes) $16 billion, leaving $229 billion of gross costs, of which compensation of employees was $71 billion, or about 30 per cent. But the net measure makes better sense, since in each firm these materials are really mostly "indirect labor."

All these figures are from *Survey of Current Business*, National Income Supplement, July 1947, pp. 20, 25, and 41.

hand, if a depression lowers wage rates, or if improved productive methods yield a sharp increase of output per man-hour in any industry, the result is the kind of cost decrease which comes through into prices. In practice, wage increases often come along with improvements in production; the net effect may or may not be a rise of costs.

Wage determination is complicated. There is much dispute among the experts as to how it works; and there is no use trying to settle the issue in a few pages of a book about money. But a few fairly well settled facts can be sorted out and set down here.

To begin with, most wage rates are "made" by conscious action of people we can identify, not by impersonal forces. Workers do not offer their services "unconditionally" and auction them off to the highest bidder for the best price they can get. In some parts of the labor market, wages are fixed by individual bargaining between single workers and employers—both sides strongly influenced by notions of "fairness," and taking for granted that the worker will go unemployed rather than hire out below some minimum. In other parts of the market, employers have established scales which apply to all the workers they hire. In still other parts of the market, wage scales are fixed by collective bargaining between employers and labor unions.

Even though many employers can fix the wages they pay (either by posting schedules or by individual bargaining leading to contracts with individual employees), they cannot simply fix any rates of wages that come into their heads. If an employer sets wages too low, his workers may find better jobs and leave. In times of general unemployment, workers may not find it easy to change jobs; but, even so, an employer who tries to pay too little may find himself losing his working force. As retirement, illness, and death pull some workers out of his shop, an employer who pays too ungenerously will have trouble hiring replacements; and he may risk a strike. In the other direction, an employer whose wage costs make his prices too high to get an adequate volume of sales for his products cannot afford to pay so much: if he cannot arrange to lower his costs (either by lowering wages or by getting higher efficiency), he will be forced out of business.

Individual employers who fix wages often change them because they have to. They may cut wages as the only way to get a neces-

sary cut in costs and meet competition on the selling-market. They may raise wages to keep in line with competing employers. Looking at the relation of wage rates to individual prices, wage increases are apt to be *causes* of price increases for the products of the workers affected. Wage cuts and price cuts are apt to be *joint effects* of a situation where employers hope to get a better volume of sales through marking down their prices. But, in a broader view, wage and price increases also are apt to be joint effects of the general state of markets. If one employer feels forced to mark up wages, and therefore prices, the wage-pressure upon him is likely to come from a wage increase by some other employer trying to get more workers in order to expand sales. (This other employer may or may not be raising his product prices.)

Outside the area of collective bargaining, then, we may sensibly think of wage rates as prices which will be pushed up by inflationary pressure or down by deflationary pressure. Because of traditions of "fairness" held by both worker and employer, because of contracts with some key employees, and because of the danger that wage cuts may undermine efficiency and thus fail to cut costs, wages may be expected to be relatively "rigid" when prices fall. Traditions of fairness, contracts, employer fear of the ill will of competing employers, employer fear of having costs raised relative to competitors, and the slowness of wage pressures in moving workers from job to job will make wage rates rigid also on the upswing. As rigid cost elements, wage rates contribute to price rigidity.

Where wage rates are set by collective bargaining, much the same forces are at work. But unions claim, and analysts on the whole seem to agree, that their action makes wage rates higher than they would otherwise be. On the downswing, unionization and collective bargaining strengthen the obstacles to wage cuts. During the life of labor contracts employers in unionized trades have little freedom to make cuts. If cuts are made, they must take the dramatic form of a new contract at lower wages—solidifying resistance to cuts. Furthermore, if an industry as a whole is strongly unionized, an employer need not expect his competitors to get their costs down by a wage reduction in a slump, so that his incentives to press for a cut are reduced. On the upswing,

however, unionization and collective bargaining probably weaken the obstacles to wage increases, except insofar as wages become more rigid during the life of a contract. When the contract is reopened, a union is in a position to push for higher wages in the presence of some unemployment, where individuals bargaining singly with employers could scarcely do so. The threat of a strike makes it worth an employer's while to go further and faster with wage increases than would otherwise pay him. Furthermore, in industries which are strongly unionized and in which wages in the different concerns move parallel (whether or not there is "industry-wide bargaining"), an employer who accepts wage increases that will raise his costs can count on a rise of costs happening also to his competitors. Accordingly, he can be much more sure of ability to raise his selling prices and to maintain an adequate volume of sales than if he were thinking of raising his own wage rates and did not know what competitors would do.

Collective bargaining carried on by strong unions thus makes it likely that money wage rates will rise through time whatever the monetary situation is, unless there is serious unemployment. Moderate unemployment is likely to prevent a rise of wages if collective bargaining is less common. But the bargaining power of a strong union may actually be raised by unemployment. This possibility is a matter of politics rather than of economics. The outcome of a strike depends largely on public opinion and on government "interference" of various sorts. Unemployment makes the public more inclined to view unions as "underdogs," and raises the responsiveness of government to labor influence. We may very well find in the postwar period that the difference (say) between 2 million and 5 million unemployed has no net effect on the strength of wage-raising pressures. As the labor market is now organized, it may take disastrously heavy unemployment (of from 8 to 10 million, say) to keep wage rates from rising faster than output per man-hour and, thus, to keep wages from pushing up the price level.[9]

It might seem that labor unions would lose interest in getting such large wage increases as to push up prices, calculating that the loss of "real wages" through price increases would cancel much

[9] This likelihood is reinforced by the interplay of wages and farm prices; see below, p. 241.

of the wage increase. This sobering influence does, of course, have some effect. But it is much too weak to guarantee that wage increases will be held within the limits of price stability. In the first place, a large proportion of the workers are convinced that employers are able to give large wage increases without increasing prices; and organized workers take no responsibility for the perverseness of employers in raising prices when they don't have to. In the second place, most of the effect of wage increases on the cost of living of the members of one union comes from the price increases on the products of *other* unions. Unless the first union can be sure that scaling down its wage demands will cause all the other unions to scale theirs down in proportion, the first union's members will always gain by increasing their money earnings as much as possible. In the third place, most organized workers share with most of the rest of us the "money illusion." That is, they feel that "a dollar is a dollar," and do not ordinarily bother about the danger that the purchasing power of the dollar may leak away through price increases. Thus, nobody should be surprised to see unions anxious to get more dollars for their members.

Government Price Fixing. Another non-monetary force working on price levels is the fixing of individual prices by government action. People think of this type of price-fixing largely in terms of the wartime Office of Price Administration, which undertook to give or withhold permission for almost all price changes proposed by sellers from 1943 into 1946. But even with the O. P. A. out of the picture, government influence on pricing goes into many fields. The chief sectors to consider are:

1. Prices of large concerns as influenced by "moral suasion."
2. "Public utility" and transportation rates.
3. Wage rates.
4. Resale price maintenance in trade.
5. Farm prices.

1. To begin with, "moral suasion" on the pricing policies of large firms is chiefly one more factor conducing to price rigidity. The hold which government has over these pricing policies lies partly in the simple fact that many managers of "big business" realize that their decisions have widespread economic effects, feel a sense of public responsibility, and quietly consult government

officials about many policy decisions. Business responsibility for the public welfare is reinforced by the existence of the Anti-Trust Laws. A move out of line with apparent public policy—especially a dramatic price increase—is likely to cost a big firm heavily in good will with the public and with government officials. Ordinarily, this sort of government influence is limited to fending off price increases; but on occasion it may be able to bring about desired decreases.[10]

2. Transportation and utility rates are controlled by the fixing of maximum rates by regulatory commissions—both federal and state. The companies in general are legally free to fix lower rates than the maximum (so long as these rates are generally available and not offered only to favored customers), but they rarely do. When rates are cut, it happens on orders from the regulatory commissions, generally based on evidence that existing rates yield more than a fair profit.[11] When rates are raised, it happens on applications from the companies, approved by the commissions on the ground that existing rates yield less than a fair profit.

This system of rate regulation has often yielded rate increases in depressions because of the profit losses resulting from declines in rail traffic, power consumption, and so forth. Rate decreases are more likely to be ordered in times of good and improving business, just when prices in general are rising. On the other hand, it takes so long to get rate changes through the commissions that their pattern of timing is uneven.

The effect of regulation on the trend of rates is debatable. But regulation based on profit showings seems to make it easy for unprofitable utility industries to avoid competitive rate-cutting; rail and water transportation rates might otherwise have fallen sharply during the 1930's.[12] On the other hand, regula-

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[10] The efforts of a few big firms (notably, Ford and International Harvester) to check the rise of the price level early in 1947 by cutting their own prices seem to have been definitely voluntary, but made in consultation with government officials.

[11] If some classes of rates are cut because they are held to be out of line with others, and thus unfair to customers, other classes of rates are raised unless the profit standard calls for lowering the rate level.

[12] Maximum rates fixed by regulatory commissions tend to become effective minimums. In transportation, the companies are forced by the nature of regulation to consult about rates and present a common front toward the commissions and the public; so that the likelihood that one of the companies will start a move toward rate reduction is very small.

tion tends to check expansion and rate-cutting by new and rising utility industries. With taxicabs, conspicuously, local-government regulation systematically holds down the number of cabs and fixes *minimum* fares. There are signs also that regulation has more or less intentionally held back the development of shipment by truck. Broadly speaking, the pattern of regulation tends to give rates long-run as well as short-run rigidity. Increases in the major operating costs of utilities (wage rates and coal prices) often come through rather quickly as rate increases. In lines where productive methods improve rapidly, utility rates will be reduced at intervals. On the whole, however, transportation and utility rates make up a very rigid and rather large component of business costs, pointing toward rigidity of commodity prices.

3. The most direct government influence on wage rates is the setting of legal minimums. This influence is reinforced by the rule that firms selling commodities to the federal government must conform to specified labor standards. Government has other ways of influencing wages which are less direct but probably even more effective.

In the first place, government employs a large proportion of the nation's clerical workers and of some types of administrative and professional workers, and its pay schedules affect the pay that these types of workers (on the whole unorganized) can get from private employers. Government almost never cuts its rates of pay and sometimes gives increases. This influence, then, is toward stabilization of salaries for short periods and an upward trend over long periods.

In the second place, government has a strong influence on the outcome of labor disputes. How this influence is used depends very much on how conservative an administration is in office in Washington and in major state capitals. But it is very rare in recent years for government to take the employer's side when a wage cut is at issue, and not at all rare for government to take the union's side when a wage increase is at issue. This fact underlies the finding above [13] that the wage level may be expected to have an upward trend more or less irrespective of monetary conditions. In the third place, standards of unemployment com-

[13] Pp. 236–237.

pensation, aid to workers in changing their occupation, relief, and so forth, affect the wages for which workers will hold out in individual or collective bargaining.

4. During the interwar period, federal, state, and local governments made laws which encouraged rigidity in merchandising markups—and, on the whole, a widening of these markups. Manufacturers were allowed to fix retail prices for their products and to cut off supplies to dealers who undercut these prices. "Anti-chain-store" laws and similar measures were adopted to discourage types of merchandising likely to narrow wholesale and retail margins. The effect of these laws is to increase the power of manufacturers and dealers to resist price decreases—and to enable some price-makers to push their prices up if they choose, even though monetary conditions may be deflationary.

5. Probably the most important government influence on prices works through farm prices. Here the record is somewhat like that on wages. Government has almost never intentionally pushed farm prices down; although during the war it resisted some increases, and occasionally price-raising measures have broken down in a way that reduced prices. Government has often intervened to raise farm prices, however, or to resist a decrease. In every year since 1933 (with some qualifications for the years when we were actively at war, 1942–1945, and the price-control period of 1945–1946), the government's pressure on farm prices has been upward.

Measures adopted to exert this upward push have been varied. Planting and harvesting of crops likely to have unsatisfactorily low prices have been discouraged in various ways.[14] Government agencies have stood ready to buy farm products at stated prices—or to make loans upon them at high valuations, with loan contracts under which the farm debtor could surrender the commodity

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[14] Spokesmen for organized farmers have pointed out that this program means only doing for agriculture what industry does for itself—namely, restricting sales for the sake of maintaining prices.

I am not concerned here with the question whether it is sound public policy to compensate farmers through public restrictions on farm output for the undoubted damage done them by private restrictions on non-agricultural output and employment. My point is that government intervention to support or raise farm prices—particularly when compounded with the forces which support or raise wages—makes the price level an active rather than a passive part of the monetary situation.

if he found it more profitable to do so than to repay the loan and sell the commodity. When stocks have piled up, government has found ways to keep them from depressing the market—by selling them abroad at reduced prices, by disposing of them under "food stamp plans," by selling human food for livestock feed, and by physical destruction.

Farm price policy and wages interact upon each other. Pressure upon officials to raise farm prices is increased whenever wage rates rise noticeably. On the other hand, raising farm prices pushes up the food elements of the cost of living. Thus, the purchasing power of the wage-earner's dollar is reduced. The result is a drive for higher wage rates, under conditions where public opinion in the cities will force government and employers to favor wage increases. In case of deflation, a drop in either farm prices or wages will ease pressure on government to *raise* the other—but will scarcely produce an effective drive to *lower* the other.

Tax Costs. Another big slice of the costs which go into prices consists of taxes. From this standpoint taxes fall into three broad groups:

1. *Operating costs*—taxes under which the total tax bill varies in proportion to output or to input.
2. *Overhead costs*—taxes which remain the same irrespective of output or profits.
3. *Shares in profits*—taxes which vary with net profits, and which are not properly "costs."

These groups are not absolutely clear-cut, but will serve.

1. Among operating-cost taxes, the most important are retail sales taxes, "excise" taxes (like those represented by the blue stamps on cigarette packages), import duties, and the employment taxes which are hitched to payrolls under Social Security. Changes in such taxes are among the "permanent" changes in operating costs which are passed on immediately to customers in higher prices. If the prices which go into costs are flexible, such taxes may be "shifted backward" (as tax economists say) into a reduction of the prices of materials or the wages of workers. Even with cost rigidity, this outcome is likely in the long run. But in the short run, changes in such taxes are definitely non-monetary influences on price levels for finished goods. The standards of

"fairness" which are applied to farm prices and wages, furthermore, generally do not recognize such taxes—even in the long run—as a reason why finished-goods prices should be higher than would otherwise be necessary relative to farm prices and wage rates.[15]

2. Overhead-cost taxes act on prices through the "plus" in cost-plus pricing. Examples are annual license fees for dealers in particular commodities, and property taxes. Change in such taxes ordinarily affects the "plus" to which the taxpayer feels entitled. It may or may not affect what he is actually able to get. If the tax strikes everybody in a line of business quite evenly (as a license fee for running a bar), it is very likely to be "shifted." If not, it is likely either to fall upon net profits or else to be "capitalized" in the value of some asset which is taxed, as may happen in real estate valuation.

3. Taxes on shares in profits are ordinarily expected not to be "shifted"—that is, not to enter into pricing. The chief taxes in question are the corporation income tax and the individual income tax (insofar as the taxpayers are in business for themselves). Paying such a tax does not, in general, alter profit incentives very much [16] or affect bargaining power in price negotiations. There are exceptions, however. Some firms are in a position where they are free to charge higher prices, and would like to, if they could keep the resulting profits—but where those profits would prove illusory. Raising the price and increasing profits might call down public wrath and lead to an anti-trust prosecution, or might advertise the profits of the business to potential competitors, or

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[15] Note that a *subsidy* applied per unit of a commodity is just the opposite of an operating-cost tax—a tax with a minus sign. Adoption of such subsidies will lower finished-goods prices if shifted "forward," will raise farm prices and wage rates if shifted "backward," and in either case will narrow the spread between material prices and wage rates and prices of finished goods. Dropping of such subsidies (as we saw in 1946) works like imposing operating-cost taxes.

[16] If all such taxes were at flat rates and applied to *average* income of the taxpayer over a long period, the rate of tax would not make much difference in business decisions. If one decision would make a company's income *before* tax $10,000,000 and an alternative decision would make it $9,000,000, the relative merits of the two decisions would be identical for a 10 per cent tax or a 50 per cent tax. The main loose end in this proposition is *leisure;* a 50 per cent tax might make it worth while to earn less (or more) than a 10 per cent tax. In practice, taxes are "progressive" rather than flat-rate, and averaging of income for tax purposes is so imperfect that taxpayers with fluctuating incomes pay much heavier taxes than taxpayers with steady incomes of the same average size.

might lead workers to bring up much more burdensome wage demands. Higher income taxes may reduce such threats and thus encourage higher prices; whereas lower income taxes might intensify the threats and lead to price cuts.

On the whole, it is the operating-cost taxes (sales, excise, and so forth) which are most likely to influence the price level. Increasing such taxes points to higher prices. On the other hand (see Chapter VI, above), such a tax increase will increase the government surplus if government expenditures are constant; and increasing the surplus makes agreeable surprises for sellers of goods less likely and unpleasant surprises more likely. At the same time, higher prices will increase transactions-requirements for cash. Thus, the finding that raising such taxes will raise price levels does not contradict the finding that increasing government revenues is deflationary. Such tax increases lead into a situation where prices are higher but inflationary pressures are weaker (or deflationary pressures stronger) than they would have been at lower prices.

The Special Role of Anticipations. Questions of price expectations have already come up in connection with the demand for money and the effect of experience on future operations. Obviously, they must also come up now that we are looking directly at prices.

On the markets where businessmen regard prices as "found and not made"—markets for securities and "speculative" commodities, in particular—expectations are crucial. Today's price is primarily a reflection of what the dealers think prices will be later, and only very incidentally a regulator of today's flows of commodities to consumption. If people think these prices "abnormally" high, the market is especially liable to a sharp slump, and contrariwise if people think these prices abnormally low.

Where prices are more definitely "administered," expectations about the prices themselves play less of a role. But expectations of the course of costs may be very important. In particular, a forecast of a sharp rise in wage costs may take hold on product prices almost as strongly as a previously unexpected increase which has just happened.

Interaction of "Autonomous" Price-Making Forces and Monetary Forces. This analysis of "autonomous" forces which

influence prices shows that prices cannot merely stand "rigid" when monetary forces change, but can have an independent influence on the situation. In particular, non-monetary forces in price-making are capable of forcing the price level up. How strong this upward push is will depend on government policy in many non-monetary directions—especially labor policy; farm policy; policy as to the types of taxes levied; and government influence on business pricing practices through utility regulation, anti-trust activities, "resale price maintenance" and similar regulation, and "moral suasion." Private policy—especially the policy of labor unions, powerful business groupings, and organized farmers—will affect the outcome both directly and via government policy. The resulting policy questions will be discussed in Part V.

The working of these "autonomous" forces can take hold on the monetary forces themselves. For example, if non-monetary forces are pushing up prices, many people will expect an increase in their money incomes. There may be important net effects on spending. With price increases coming through with a lag, increased spending will mean a higher physical volume of sales than expected. The fact that a rise of costs is in process makes inventory expansion profitable just at the time that increased spending is depleting inventories.[17] A wave of optimism is apt to result. In the monetary field, this optimism is apt to show up in an expansion of bank loans; and, if "bearishness" toward prices becomes less common, speculative demands for cash will shrink. The short-run monetary situation may thus be powerfully influenced by these non-monetary price-making forces.

The working of the "autonomous" forces may be limited by the monetary situation. History suggests that the growth of business activity calls for a roughly corresponding growth of the public's cash. On the record, stoppage of the growth of cash is always linked with a business recession.[18] If the "autonomous" price-

[17] Whether or not business succeeds in increasing inventories in physical size, goods in inventories will be revalued at higher prices, creating paper profits. This revaluation leads to the paradox that efforts to increase wages out of profits create an increase rather than a decrease of profits shown on the books—as observed in 1946. Actually, of course, these paper profits are illusory.

[18] See Part III. In itself, this fact may prove either that growth of cash is necessary to expand business, or that expansion of business is necessary to the growth of cash, or both. In each historical case there were, very likely, influences in both directions. But in the light of the theoretical argument of previous chap-

making forces require us to finance the growth of business at steadily rising price levels, the necessary growth of cash may be increased. Inadequacy of the supply of cash may lead to a "deflation" of production and employment even though it does not "deflate" prices. To analyze this process takes us into the more general problems of inflation and deflation assigned to the second half of this chapter.

B. The Processes of Inflation and Deflation

The Questions. The terms *inflation* and *deflation,* in the older literature, refer to assumedly parallel movements of both prices and the quantity of money. But, like so much else in monetary theory, these terms have been reslanted by the shift of emphasis away from price levels and away from the quantity theory. Definitions in accord with present-day professional usage are:

1. *Inflation:* upward movement of price levels.
2. *Deflation:* downward movement of production and employment, and of such prices as are flexible.

This lack of symmetry in the concepts implies that many prices are "on a ratchet," and can be raised much more readily than they can be lowered.[19]

In analysis, I start with "inflation," beginning with the effect of excess spending power on current account. Next, I bring in the influence of cash balances and liquidity, and proceed to a sketch of the "inflation spiral." A discussion of "suppressed inflation" winds up the inflation side. Deflation and the general role of money in economic fluctuations are very briefly discussed, as they come up for extensive discussion in Part III and Part V.

Inflation from the Payments Standpoint: Excess Spending Power from Current Income. The best starting point for analysis of inflation is the payments approach of Chapter IV. People may try to spend more than the forthcoming output of goods and services will sell for at non-inflationary prices; such an attempt is inflationary.

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ters, it is clear that inadequacy of cash must be taken seriously as a cause of recessions.

[19] Note that the concept of "deflation" comes very close to matching the business-cycle concept of "downswing"; but an "upswing" may be non-inflationary.

It is no accident that almost all serious inflations have happened in wartime or just afterward. Before a war, markets are roughly self-balancing—perhaps with high employment, or perhaps with some unemployment. War mobilization means pulling workers out of their previous work, and either putting them in uniform or setting them to produce munitions, and so forth. There is nothing about this shifting of producers to reduce civilian demand for goods and services; for the people whom the mobilization sets to work for the government are likely to have increased money incomes [20] and thus increased rather than decreased spending power [21] for civilian goods. But instead of doing work that puts goods on the civilian market which will soak up civilian spending power, these workers are now producing things which never come to market.

If the starting-position is one of unemployment—as it was in the United States when serious rearmament started in 1940—there may be a phase of "guns plus butter" when civilian output expands fast enough to match increased spending power without a price rise. Formerly unemployed workers replace those diverted to war work. But as mobilization proceeds, the growth of civilian output is stopped or reversed, while money income keeps on growing.

At this point, unless civilians are shaken out of their "normal" patterns of spending in relation to receipts, inflation sets in—as it did in the United States early in 1941.[22] If consumers go on spending a "normal" proportion of their personal incomes, businessmen carry out a "normal" amount of investment to expand plant and inventory in line with expanding consumption, and government spending keeps on growing fast into the bargain, there

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[20] Many (but by no means all) of the uniformed fighting forces have their money incomes reduced. Most of the added civilian government workers and nearly all of the munitions workers have their money incomes increased.

[21] The term needs emphasis. *Spending power* rather than "purchasing power," because of the threat of price increases. If your wages go up, your power to *spend* clearly increases. Whether your power to *purchase* increases depends on whether the rise of your wages outpaces the rise of prices on the goods you aim to buy. You may easily find yourself spending more to purchase less.

[22] As this date illustrates, inflation may set in before the initial unemployment is all absorbed. This beginning of inflation is interpreted in terms of "bottlenecks": barriers to the expansion of output which cannot be forced until some time has elapsed.

is more spending than the forthcoming output of civilian goods and services will absorb at non-inflationary prices.

War inflation can be prevented or stopped, but only by an appropriate pattern of anti-inflationary policies. Tax increases can reduce the amount of income that is "disposable," and thus drain off excess spending power. "Allocation" of scarce equipment and materials to businessmen and "rationing" of goods to consumers can limit opportunities to spend—especially if supported by price control. Positive incentives to save can be turned on—such as Payroll Savings Plans and "Drives" to sell war bonds. If these policies are lacking (or too weak), inflation breaks through.

Postwar inflations represent slightly different sets of forces. Just after a war, government expenditure is still swollen, and a good part of the labor force is still employed in activities which put no goods on the civilian market. The after-effects of war leave business with abnormally strong incentives to "invest," on account of wartime restrictions which leave a "backlog" of accumulated needs for houses, machinery, factories, stores, and inventories. At the same time, war controls are apt to weaken. This weakening of controls is especially acute in defeated countries (such as Germany after World War I), where the government may be unable to collect even "normal" taxes.

There is nothing in the arithmetical logic of the payments approach to keep this sort of excess-spending-power inflation from taking hold at any time when employment is fairly high. If consumers choose to spend all their disposable incomes, and government bodies choose to spend all their tax revenue, *any* net investment expenditure by business will overbalance the market and give us intended spending in excess of what supplies can absorb without inflation. Actually, consumers always save something in prosperity, governments often spend less than their tax revenues, and business ordinarily does not push investment beyond what business savings, consumer savings, and government surpluses can offset. In peacetime, our economic system seems not to have been very vulnerable to inflation; although it may prove more vulnerable in the future. Further discussion of this question of peacetime vulnerability will come later in this chapter, and in Part V.

Cash Balances and Liquidity in the Inflation Process. This payments-approach account of inflation is only a first approximation. We can improve it by bringing in some of the cash-balances thinking of Chapter VIII.

To begin again with war inflation, war tends to increase the public's stock of cash assets and of non-cash assets which are near-moneys. Modern governments which are spending beyond their tax revenues because of war borrow at banks. This government borrowing results in creation of deposits. Even if bonds are sold to the nonbank public, these bonds become "liquid assets." Into the bargain, banks are encouraged to finance war industries. This expansion of liquid assets may or may not be regarded as a primary cause of the inflation. At the very least, it explains why the inflation is not brought to an end by forced curtailment of private spending, brought about by an inadequate cash supply.

Cash-balances elements count for still more when we come to postwar inflations. At the end of the war, both households and firms are likely to come out with cash balances and other liquid assets which are very large relative to transactions needs. This was conspicuously the case in the United States in 1945. Such high liquidity reinforces the "backlogs of demand" for civilian goods which were inadequately supplied during the war (durable goods, such as houses and machinery, and even semi-durable goods, such as clothing). With so much wealth on hand (in paper form), households and firms are well along toward their savings goals and can afford to ease up on saving. Households can afford to budget expenditures closer to incomes, and to let savings rather than other expenditures give way when some expenditure runs higher than planned. Corporations can afford to pay out bigger dividends. At the same time, both households and firms have an incentive to bring their "portfolios" of assets back toward balance by turning some of their liquid assets into operating assets (houses or business plant or inventory) that will bring in income. Thus, the liquidity position inherited from the war encourages low savings and high investment. This tendency is accentuated if efforts to preserve "cheap money" for the Treasury enhance the ability of banks to lend to business.

Our comparative immunity to peacetime inflations can also be interpreted largely in cash-balance terms. This time the emphasis

is on the *demand* for cash balances. Under peacetime conditions, a rise of prices tends to enhance "bearishness." [23] Willingness of the "bears" to swap other assets for cash checks the price increase directly and also tightens the monetary situation. If the bears refuse to disgorge the cash which they get by sale of assets, the cash supply of the rest of the community tends to run down—an effect which is plainly an anti-inflationary force. Unless the government has to spend much more than it can raise by taxes (which doesn't happen in ordinary peacetime conditions), it is hard to manage a growth of cash supply sufficient to push inflation very far. Here we have a testimonial to the usefulness of deep-seated views about the "normality" of certain prices for durable assets, and the usefulness of skepticism of market prices above "normal."

The Inflation Spiral. Inflation is often described as a "spiral" —with price increases leading to wage increases, and wage increases, in turn, to price increases. Analyzing the spiral helps us both to see where the "administered" prices come into the process, and to locate the brakes which limit the speed of inflation.

Going back to the payments approach, if an excess of spending power leads to a price increase, somebody necessarily gains by the price increase. The income generated by the forthcoming flow of goods is equal to the value of those goods [24] at current prices, so that, when the current prices go up, money income is directly increased. This extra income means added spending power, which, if exercised, would mean more income, and so forth. Then once an inflationary price increase sets in, why doesn't the income-increasing effect of rising prices send prices up sky-high at once?

The answer is that in the process part of the bulge of income is diverted into taxes, and (more important for the argument) part into savings. The people who gain income from price increases directly are farmers, shopkeepers, and employing corporations—in general, receivers of "profits." A large part of any sudden bulge in their incomes is bound to go into savings, for two main

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[23] For a time, however, it may reduce the dispersion of opinions about future asset values—thus reducing the demand for cash and making the boom cumulative up to the point where differences of opinion again become acute.

[24] Including those which government is buying.

reasons: (1) Among the population, these are the groups that have a high "propensity to save" additional income.[25] (2) Not having expected this bulge in receipts, they have no immediate plans for a corresponding bulge in outlays—either for consumption or for investment. Thus, the rise in income is limited. If the underlying cause of inflation is a government deficit to finance armament, income will rise *until the additional saving is enough to offset the deficit.* This finding explains a paradox often noted during the war: in an inflation whose causes are readily measured, it is easier to make an accurate forecast of savings than of most other economic magnitudes. Savings have to rise to match the deficit; how much income must rise before savings will rise this much will vary with circumstances.

What happens next turns on the "administered prices." The natural course of the spiral calls for an increase of wages, farm prices, and so forth, "redistributing" the abnormal profits of the first stage. This redistribution breaks down the temporary balance; for, of course, the wage-earners, and so on, want redistribution in order to spend the proceeds and re-establish their standard of living in face of the price increase. As soon as a higher wage happens, however, price increases can yield a fresh crop of windfall profits—leading to fresh savings and again setting a limit to the process.

Put it like this: There is a limit to inflation so long as the wage level is constant. Shortage of goods relative to wage-earner demands, plus an influx of abnormal demands from non-wage-earners, can raise the wage-earner's cost of living relative to his wage rate, but only by so much. Thus, Germany was fairly successful during World War II in limiting inflation by a wage-freeze. The result was a tremendous bulge in profit incomes, which was "mopped up" partly by taxes and partly by semi-compulsory loans to the government. In the United States, we operated in World War II with wage control which limited the rise of wage rates (although it did not entirely stop the rise), and with an excess profits tax which captured the bulk of a very large bulge in cor-

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[25] During World War II, some farm spokesmen argued (apparently with a straight face) that raising farm prices would be anti-inflationary because farmers were the nation's best savers. The argument has a wry kind of truthfulness about it.

porate profits.[26] This setup, of course, greatly reduced the "inflationary pressure" to be resisted by price control and rationing.

Once the administered prices become involved in inflation, on the other hand, the inflation can gain a momentum independent of the government deficit or other originating cause. A sort of semi-conscious log-rolling among the price-fixers raises farm prices because wages are rising, and wages because farm prices are rising. This process can operate through a price-control mechanism, as we saw during and after World War II. "Log-rolling inflation" is self-financing, since it marks up cost prices but also marks up levels of money income to match.

There are two possible ends to a price spiral. If the underlying force that generates the inflation (typically, a deficit) grows worse, the outcome may be "hyper-inflation." In hyper-inflation, the value of the currency unit goes up in smoke. Prices rise to thousands or millions of times prewar levels. People find assets other than cash to satisfy their "precautionary" demands and "speculative" demands, and economize transactions requirements to the limit. The unit of account itself is deserted; and the only way out is to abolish the existing currency and set up a new one. This outcome is likely to happen in countries that have been badly defeated in war; the leading cases are the German mark and Russian rouble after World War I. The Confederate dollar in the last months of the Civil War had a similar course; so did Chinese currency after World War II.

The other possible end of a price spiral is to reach a price peak anywhere between 50 per cent and 1000 per cent above prewar, and go over into a deflation. This outcome was illustrated in the United States and Great Britain in 1920. Speculation is apt to bring markets to a point where, if they don't go higher, they're bound to go lower. If, meanwhile, the government manages to bring its finances under control, the inflation stops, and the stoppage produces a reversal.

In principle it ought to be possible, although difficult, for policy

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[26] Corporate profits (corrected for inventory gains) were $5.6 billion in 1939, $23.5 billion in 1943, *before* corporate income and excess-profits taxes. Tax liability rose from $1.5 to $14.2 billion. Thus, the rise in tax liability ($12.7 billion) was 71 per cent of the $17.9 billion rise in profits. (Inventory profits did not affect the outcome much for 1943, by the way.) For detailed figures, see *Survey of Current Business,* National Income Supplement (July 1947), pp. 25 and 30–32.

to taper off a moderate wartime or postwar inflation—avoiding a topheavy speculative situation—and achieve stability at a new higher level without a collapse. But it would be hard to find a historical example of such a success.

Suppressed Inflation. I have already mentioned ways of stopping an inflationary price rise, without full correction of the underlying imbalance, through controls of prices and wages. Unless the imbalance is slight, the process also involves rationing and allocation systems to keep the goods flowing at controlled prices to people who have claims to them—and diligent policing to check the growth of "black markets" outside the regular channels of commodity flow with prices above ceilings.

Such a situation is called "suppressed inflation." How much strain it has to stand depends on the size of current deficits (or demands for "investment goods" to serve domestic business or to finance an export balance). How much strain it *can* stand depends on the administrative strength of its price and supply controls, and on the co-operativeness of the population.

Even a successful administration of "suppressed inflation" has drawbacks. Work incentives are weakened because people have such large liquid assets relative to current earnings (or to the cost of living at controlled prices). Any areas that are left uncontrolled (such as amusements) tend to get more than their share of manpower. Price-controlled producers concentrate on the more profitable items and offer consumers poorly balanced assortments. If administrators yield to the temptation to issue just a few more ration coupons than they are sure the available goods will match, consumers find that they have to spend endless hours standing in line. If inventories are held low (again in response to the natural urge to ration as generously as possible), interruptions of supplies through bad weather or strikes throw whole chains of production out of gear.[27]

To get out of a suppressed inflation, we may choose from three methods. One (which we adopted in 1946 in the United States) is to drop controls and let prices rise. A second (pursued by

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[27] For an example, see J. R. Hicks's interpretation of the British production crisis in early 1947 ("The Empty Economy," *Lloyd's Bank Review*, September, 1947). It seems to be a large-scale model of what I called, in Chapter V, the "Principle of Linkage of Risks."

Belgium after World War II) is to correct the current budget situation and "block" the liquid assets left over from previous deficits. The third is to wait for something to turn up. This last alternative may be very good policy if there is reason to expect a falling off of business demand for investment goods after certain urgent investment projects are cleared, or to expect a lucky turn in foreign trade. But if the effect of high liquidity is very strong, it may involve a long and painful wait.

The Deflation Process. "Deflationary pressure" exists when the markets provided by consumption, government, and business investment do not add up to enough to keep the existing volume of goods flowing to market at existing prices. In a sense, it is the opposite of inflationary pressure. But it is most likely to arise from a deficiency of private investment (or—see Part IV—from an "unfavorable balance" in foreign trade), rather than from a government budget surplus.

Inflationary pressure may be expected to improve production and employment if it strikes when there is unemployment, and to raise prices if it runs up against full employment (or against bottlenecks short of full employment). Deflationary pressure—unless it is applied when actual inflation is going on—may be expected to produce unemployment almost at once.

Like inflation, deflation can take the form of a "spiral." If deflation imposes losses on the people whose incomes are "profits," they will presently manage to shift part of the burden. In the past, they have shifted it partly by lowering wages and farm prices, partly by cutting the volume of employment they offered. With wages apparently "on a ratchet," and with Congress much interested in farm-price "supports," we can probably expect much less price deflation in the future.

Historically, the great deflations seem to go back to shortage of cash assets—and banking pressure to reduce the supply. Notably in the great deflation of 1929–1932, deposit retirement via contraction of bank loans and evaporation of deposits via bank failures seem to have been prominent. This deflation will be traced in some detail below (Chapter XII), so that extended discussion is not needed here.

Money in Economic Fluctuations. The monetary mechanism of inflation and deflation is crucial for understanding business

fluctuations (Part III) and policy toward economic stabilization (Part V). I am making no attempt in this book to present a full account of theories of fluctuations—let alone to give a definitive account of the "underlying causes" of fluctuations. But in the theory of the "mechanism" of fluctuations, inflationary and deflationary processes play a key part. And, in policy, many of the most promising devices are intended to work through these processes.

— Part III —

FLUCTUATIONS: EMPLOYMENT AND PRICES

— *Chapter XI* —

KEY FACTS ON FLUCTUATIONS

A. Unemployment and Loss of Potential Output

The Fluctuations Problem. Everybody knows that business has ups and downs. Some years are remembered as times of prosperity, others as years of "hard times" and heavy unemployment. Some years have seen prices soaring, others have been years of price decline.

Controlling fluctuations of business is the key problem of economic policy for the United States. Our way of life is on trial before the world. Mass unemployment is something we cannot afford—either economically or politically. We have to find a workable solution for the unemployment problem, without breaking down the democratic political institutions which safeguard our liberties. Furthermore, we have to find a solution which does not lead into inflation.

The chief object of this book is to outline the fundamentals we must understand to talk sense about employment-price policy. We have examined the monetary structure in Part I, and "monetary theory" in Part II. Now we have reached a point where we can get no further without some facts about fluctuations.

The key facts are presented in this chapter. In this first section, we look at the evidence on the intensity of unemployment and what it has cost the nation in lost output. The second section deals with fluctuations in the major components of output, tying in with price fluctuations; the third brings in the monetary factors that we have so far studied institutionally and theoretically.

Selection of Facts. There is no use trying to talk about the ups and downs of business in a vacuum. Facts are essential. On the other hand, a *complete* description of fluctuations is out of the question. Economists have put many hundreds of man-years into collecting data on fluctuations and more hundreds into analyzing

them. The results are still too fragmentary to be called "complete." Yet they already make up a rather large library of published books and papers—not to mention the huge mass of worksheets at the National Bureau of Economic Research, the United States Department of Commerce, and other centers of research.

The only remedy is to focus attention here on a few key statistical "facts" which themselves are each summaries of a lot of information. I present chiefly broad-gauged measures of national income, physical volume of production, employment, and major groups of prices. I believe that these summary figures carry most of the information about fluctuations which a citizen or a statesman needs in order to understand the broad outlines of the employment-price-policy question.

While facts are essential, however, we must not fool ourselves about what we can do with them. We cannot hope to arrive at an adequate basis for policy judgments (or for personal business decisions) just by poring over charts and tables. The notion that "the facts will tell their own story" and shape themselves into "patterns" which explain everything is just a branch of numerology. It is on the same logical level as astrology, the forecasting of history from measurements of the Great Pyramid, and the invention of "systems to break the bank at Monte Carlo." Statistical measurements are useful only in conjunction with sensible theories. This is why I come to measurement of fluctuations in this book only after a first bout with theory in Part II.

Even in conjunction with sound theorizing, furthermore, we must not look to statistical facts for miracles. What we want of our facts is to "prove" theories on which we can see our way to build policy proposals. Unfortunately, facts cannot really "prove" theories. What they can do is only to *reject* hypotheses with which they are not consistent.[1] Hypotheses which are not rejected "live to fight another day." If they survive a number of such

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[1] This limit to the value of evidence is not a peculiarity of economics, but part of the general logic of "scientific" thinking in all fields. It is sometimes said that an experiment "proves" some general principle. But in such cases the term "proof" is used rather loosely and casually. What is meant is that the experiment —in conjunction with related experiments and with a structure of theories in the light of which we interpret experiments—squares with the general principle, and that this whole complex of knowledge makes the principle "highly probable." This sort of finding is rather different from "proof" as generally understood.

ordeals by fact, and if they tie in logically with other surviving hypotheses, we may begin to develop confidence in their truth.

Less rigorously, living a while with the facts gives us a "feel" of the problem which is essential. We get an impression of what is large and what is small; and we learn that certain families of hypotheses always come a cropper, while other families go over the factual hurdles more easily.

Non-Farm Employment and Output. Most workers are employed in the activities we call loosely "industry and commerce." This group includes manufacturing, mining, construction, trade, transportation, and the whole range of "service trades"—amusements, medicine, beauty parlors, and so forth. Most of these workers are employees; although several million are self-employed.

In studying fluctuations, we do well to leave on one side employment in government and in farming. Neither of these activities throws workers into unemployment when markets for goods weaken: unemployment represents failure to get a job in "industry and commerce." Accordingly, the employment data presented here (Figure 13) are for the commercial and industrial field, excluding farming and government.

Employment in commerce and industry since 1889 is represented on the diagram by two long series. Curve E-1 is an estimate for 1889–1914 by Frickey, Curve E-2 an estimate for 1914–1943 by Kuznets (extended to 1947 with the aid of census data). Both curves, of course, have a rapid upward drift, reflecting the nation's economic growth.

The underlying growth in the number of workers available is best traced by drawing lines across between the peak years, when practically everybody wanting a job was at work. The years 1890 and 1906 are examples; 1913 was a year of mild unemployment, and is used to extend the growth line of Curve E-1. The years 1923, 1929, and early 1947 are used to set the growth line for Curve E-2. Where the curve of actual employment drops below the growth line, part of the labor force is idle. The amount of unemployment may be gauged roughly by the percentage by which the two curves fall apart.[2] The number of unemployed that

[2] Since the graph is "semi-logarithmic," if the same percentage of the potential labor force are employed, the actual curve is always the same vertical distance below the growth curve.

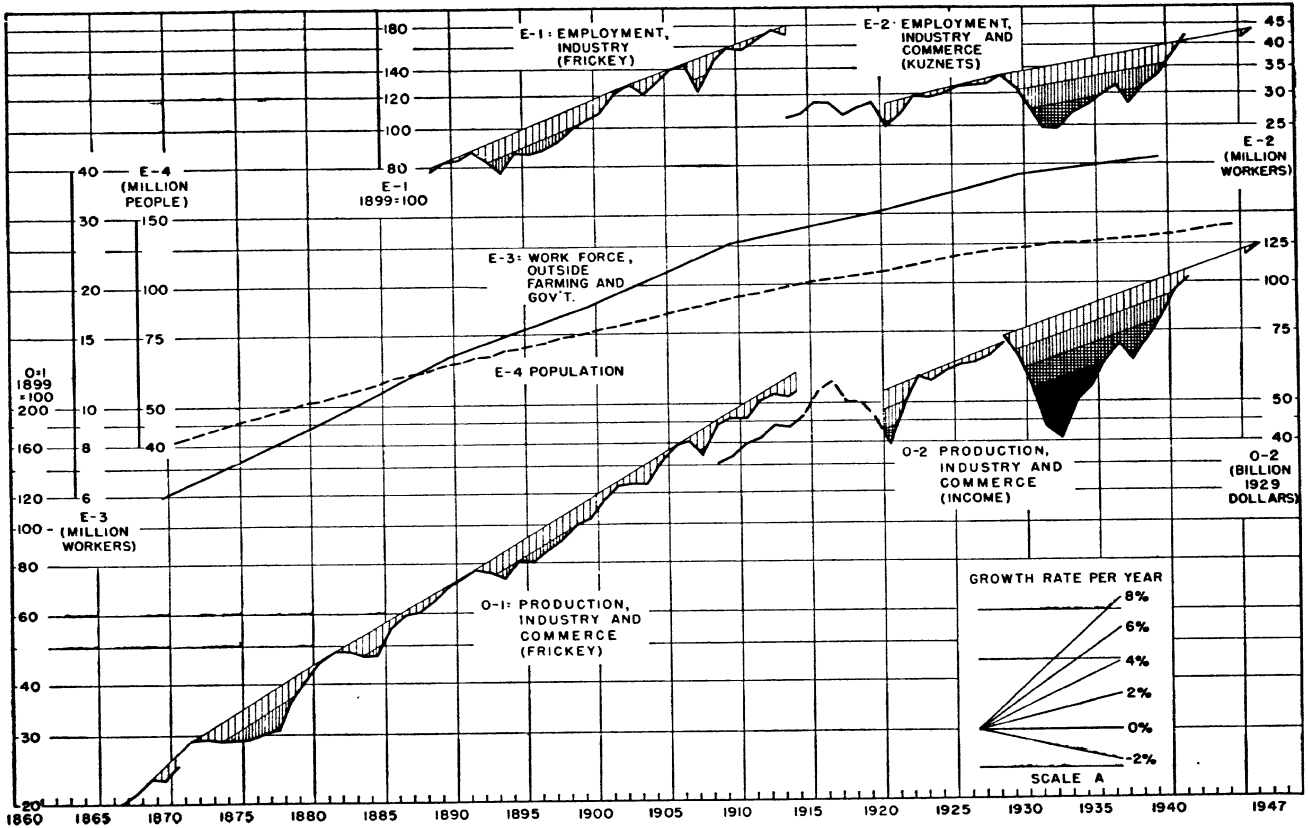


FIG. 13. NON-FARM EMPLOYMENT AND OUTPUT, 1860–1947.

would be found by a Census inquiry might be somewhat higher or lower. Unemployment brings wives and children of jobless workers onto the labor market, so that several members of the family may be found unemployed.[3] On the other hand, some would-be workers are stranded on the farm (or in foreign countries, in the case of would-be immigrants). The fact that successive peaks fall so nearly on a smooth curve (1890, 1892, 1902, 1906–1907, 1910, and 1913 on Curve E-1; 1915, 1920, 1923, 1926, 1929, early 1942, and 1947 on Curve E-2) testifies that a projection of the number of workers available can be made with reasonable accuracy by extending the curve drawn through recent peak levels.

Looking more closely, you will see that Curve E-1 rises faster than Curve E-2—about 3½ per cent a year as against about 1½ per cent. This break in the rate of growth results from the sharp cut in immigration at the time of World War I. Immigration was interrupted late in 1914; and stringent immigration laws went into force early in the 1920's. The same break in trend may be seen in Curve E-3, which is the Census series of "gainfully occupied," excluding those attached to farming and government, and less dramatically in Curve E-4—the Census midyear estimate of population. Curve E-3 outgrows Curve E-4 clear across the diagram because of the diminishing proportion of the total workers who are farmers. The number of farm workers stopped growing about 1910, leaving the whole growth of the number of workers to reinforce "industry and commerce" (except as absorbed into the growing work of government). If it had not been for this stoppage in the growth of the farm labor force, the break in the industrial curves would have been still sharper.

Curve E-2 shows clearly the mass unemployment of the 1930's. Industrial and commercial employment was below 90 per cent of potential all the way from 1931 through 1940.[4] From 1932 through 1936, and again in 1938, employment was below 80 per cent of potential, and for 1932 and 1933 (the two worst years of the Great Depression) below 70 per cent.

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[3] The typical Census standard of unemployment is that a person is "out of work, able to work, and looking for a job." The fact that some of the unemployed would cease to look for a job if *somebody else* found one is not registered.

[4] If we were using figures for periods shorter than a year, we should find employment dropping below 90 per cent of potential before the end of 1930 and below 80 per cent before the end of 1931.

Looking across the diagram, the depression of the 1930's is plainly the worst in the record—but far from the only one. Employment dropped below 90 per cent of potential in the post-World War I slump of 1921, and before the war in the 1908 slump. In the 1890's there was a dragging depression, with industrial and commercial employment steadily below 90 per cent of potential from 1894 through 1899.

Further back dependable yearly statistics of employment do not go. But a good clue to the employment history may be found in *output.* Curve 0-1 traces Frickey's general production index up to 1914; Curve 0-2 is an estimate of national income (excluding agriculture and government) from 1909 onward, in "1929 dollars." During the periods 1890–1914 and 1921–1947, these income curves show much the same characteristics as the industrial-and-commercial employment curves—naturally, since they reflect the product of that employment. Growth lines are drawn through the peaks on the same principle as for the employment curves. The output curves show more "amplitude"—dropping below potential by a somewhat larger percentage, and showing somewhat larger year-to-year percentage changes. Besides, they have more rapid growth-trends, reflecting the rise in output per worker.[5] But they are recognizably a picture of the same phenomenon.

Following the output curve back of 1890, we find two years of serious depression in the 1880's and another major depression (with output below 90 per cent of potential for 5 years, 1874–1879, and below 80 per cent for 2 years, 1877–1878) in the 1870's.

With this evidence before us, it is plain that mass unemployment is not a new thing. It is emphatically not the case that our economic system worked smoothly until 1929 and then suddenly developed "stagnation." On the contrary, if we set a standard of 90 per cent of full-employment industrial output for "working smoothly," there are few long periods of smooth working in the record. Since 1870, the only stretches exceeding 3 years in succession with output over 90 per cent of potential are:

1870–1873,
1880–1883,

[5] The rise in output *per man-hour* has been faster yet; but we lack year-to-year measures of changes in working hours prior to World War I.

1886–1893,
1901–1903,
1909–1913 (arguable, since we lack a full-employment anchor year to the right of 1906),
1923–1929.

Of the 64 peacetime years 1870–1938 (treating the Spanish War as "peace"), these smooth stretches cover only 30. The nearest things to sustained prosperities were 1880–1893 and 1899–1913. But these periods were punctuated by the rather serious recessions of 1884–1885, 1904, and 1908, besides perceptible recessions in 1900 and 1911.

Additional Evidence on Production. The output series given above are backed by a rather imposing mass of other evidence on production which tells the same story. The most important series are shown in Figure 14—on the same graphical system which draws growth lines through the peaks.[6]

Curves 0-1 and 0-2 are the same used to represent output in Figure 13. Curve 0-3 is the Day-Persons index of industrial production—the pioneer effort in this field.[7] Curve 0-4 is an index of bank clearings outside New York City, originating with F. R. Macaulay, "deflated" for price changes. It is not a genuine physical-output index, but behaves enough like one to make the comparison interesting.[8] Curve 0-5 is an index of physical output computed by the late L. P. Ayres.[9] Curve 0-6 is the Federal Re-

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[6] In several cases, the early or late years of a series seem to be seriously incomplete, or else the series breaks off without reaching a full-employment year which will give an anchor. In such cases the growth line is not carried to the end of the series.

Disagreement about the course of events during World War I is so serious that no growth lines are put in between 1914 and 1919.

[7] This index seems to be incomplete at both ends. In 1863–1872 it grows more rapidly than the more modern Frickey index—presumably because it under-represents declining industries. In 1923–1929, it grows more slowly than the more modern Federal Reserve index—presumably because it under-represents new industries.

[8] In particular, it offers good evidence on the timing of peaks and troughs—the more valuable since the source gives monthly figures. Peaks used to draw the growth lines are for the highest consecutive 12 months in 1881–1882, 1890–1891, 1892–1893, and 1906–1907.

[9] This index, which is quarterly in the source, is used in the more detailed analysis of 1870–1903 in Figure 22, below. Peaks used to draw the growth lines are for the highest consecutive 4 quarters in 1872–1873 and 1881–1882; 1892 and 1906 appear as peak years.

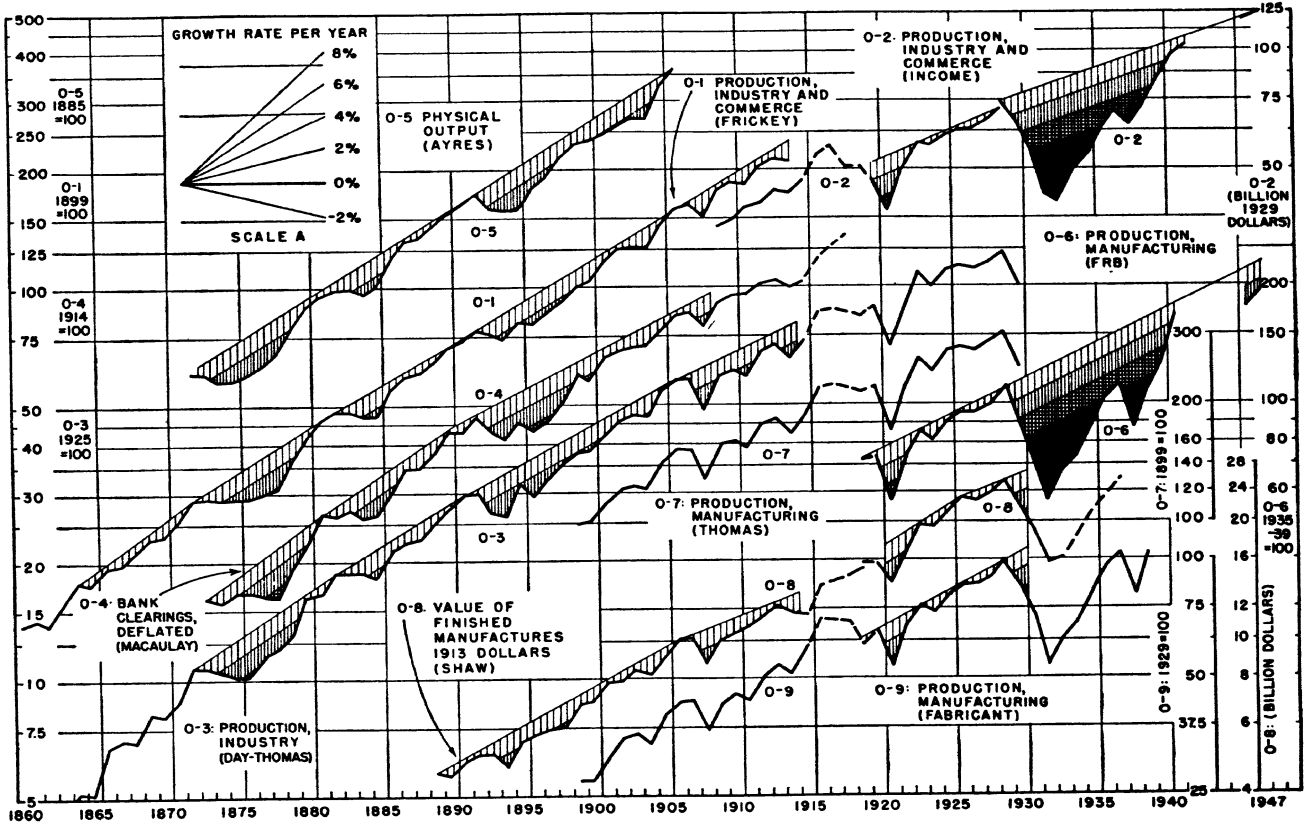


FIG. 14. LOSS OF POTENTIAL NON-FARM OUTPUT, 1860–1947.

serve index of manufacturing production.[10] Curve 0-7 is a backward extension of an older version of the Federal Reserve index by Woodlief Thomas.[11] Curve 0-8 is an estimate of the value of finished commodities (excluding non-manufactured food) in "1913 dollars," worked out at the National Bureau of Economic Research by W. H. Shaw.[12] Another National Bureau index (that of manufacturing output, by Solomon Fabricant) is Curve 0-9.[13] This listing of indexes on production makes up a nearly complete roster of all long series which measure the output of manufacturing or broader classes of nonfarm output.[14]

All these indexes show remarkable agreement on the long-term growth of productive potential. The slopes of the growth curves are all very much alike. Except for the Shaw index, all show very smooth rates of growth. The gradual "retardation" of growth which they all show is about the same as that of population growth (Curve E-4 in Figure 13).

Agreement is also very close as to year-to-year changes. It takes close inspection of the diagram to locate any disagreements on the direction and approximate speed of year-to-year swings, except near the beginning of World War I. The most crucial prewar disagreements are about changes in 1874–1875 (where Curve 0-4 is out of step), 1880–1883 (where the location of the peak is not

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10 Since this index is monthly, it was possible to find an anchor-point for the growth line in the highest 12 months of 1919–1920. The line drawn through this point and that for 1929 runs just above 1923 and slightly above 1947.

11 This index does not provide good primary evidence on growth rates, since it starts between 1906 and the next preceding clear-cut peak (1892), while its 1923–1929 growth rate is too slow because of failure to give adequate weight to growing industries. For the prewar period, however, the curve is quite consistent with a growth rate close to that of Curve 0–1.

12 Besides the annual series for 1889–1933, Shaw offers estimates for the years 1879 and 1869. The 1879 figure falls slightly below the apparent growth line from 1889 to 1906; the 1869 figure, far below.

Of all the series studied which have at least two peaks prewar and postwar, this one lends itself least to analysis by this method. Points for 1891–1892 lie suspiciously low, and so do the years just after 1914; while this is the only index that shows a more rapid growth in output from 1923 to 1926 than from 1926 to 1929.

13 This index, like that of Thomas, starts too late to give a prewar growth rate, although, like the Thomas index, it is consistent with the rates shown by other indexes. For the 1920's, however, it gives a fairly complete and consistent picture, agreeing with the revised Federal Reserve index.

14 The National Industrial Conference Board series for "national income in dollars of constant purchasing power" is rejected because its year-to-year changes are contradicted by evidence on physical output.

unanimous), 1889–1890 (where Curve 0-8 is out of step), 1895–1896, and 1910–1911 (where Curves 0-2 and 0-8 are out of step). As to the years of World War I, testimony differs as to whether output was above or below growth lines projected either from prewar or interwar periods. In the interwar years, the only disagreement of any importance is on the 1926 point.[15]

There is also very good agreement as to the *loss of potential output* in the major and minor depressions covered. All the curves except 0-8 agree in showing output continuously below 90 per cent of potential in 1894–1898; and the predepression peak of this curve looks suspiciously low. The four curves which go back to 1873 also agree in showing output continuously below 90 per cent for several years in the 1870's, and for two years in the 1880's. Comparability of the curves is more doubtful in 1907–1914, and disagreements are not easily interpreted. For the interwar years, the proportion of potential output lost is substantially equal on each curve.

"Cycles" in Perspective. These statistics exhibit the familiar "peaks and valleys" of "business cycles." But "peaks and valleys" are not the best geological metaphor. The curves look more like the profile of a gradually sloping plain eroded away in parts—like the Great Plains of our West.

The evidence suggests strongly that when production is high, it comes up against a rather clear-cut ceiling—but a ceiling which itself rises through time. This limit is evidently the limit of available manpower. Its rise reflects the growth of the working force plus the growth of productivity which comes with improvement of productive methods, education of the workers, and so forth.

There is no "floor" corresponding to this ceiling. Industrial-commercial output can drop to very low percentages of potential, and seems to have dropped below 50 per cent at the bottom of the Great Depression of the 1930's.

The record suggests something seriously wrong with the economic machine. Time after time, we find that, just as produc-

[15] This similarity should not be too surprising, of course, since all the compilers of statistics have to draw on the same fund of data. But there is much room for disagreement in handling figures, and the different series reflect many different methods. Therefore, we may be confident that the common shape of the curves lies in the facts rather than in the processing.

tion got up to capacity levels, something happened to cut off the power. We have not looked at enough of the evidence yet to justify summing up. But one connection can be drawn with the problems discussed in Chapter X. When industrial-commercial output and employment sag, employers in general are having trouble with their sales volume. Having fixed their selling prices, they find that they cannot sell all they are able to produce.[16] A limit is thus set to output, below the physical ceiling set by manpower—a limit of *markets*. The problem of avoiding a slump of output away from potential is, thus, the problem of avoiding a slump in markets.[17]

B. Fluctuations in Prices and in Components of Output

Price Patterns. Most of the discussion which starts here is about different types of output. But as a starting point, it is worth pausing to look briefly at historical price patterns.

The wholesale price index which appeared in an earlier diagram [18] is built up from sub-indexes of groups of prices. A few of the most important of these sub-indexes, from 1890 to date, are graphed in Figure 15.[19] For comparison, the broadest indexes of non-farm output are shown at the bottom of the diagram.

The first thing to observe is that all the major swings of prices are common to all the series. They all show:

1. The drop from 1890 (or 1891) to 1896 (or 1897).
2. A revival on the upswing after 1896 (but note the sharp differences of shape).

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[16] If employers were normally pushing up their prices during the decline of sales, we might want to interpret the record differently. But, as we shall see when we come to prices, periods of declining sales are almost always periods of price cuts rather than price increases.

[17] Obviously, this point of view has much in common with the view known as the "under-consumption theory." But note that it does not commit us to thinking that *consumption* markets are at fault. In fact, weakness of consumption markets seems to be a by-product of weakness of other markets. This matter of interdependence of markets will be discussed below.

[18] See above, pp. 142 and 146–148.

[19] This figure shows only a fraction of the coverage of the index, which is based on prices of nearly 900 commodities. The *Survey of Current Business* publishes 7 major group indexes besides those graphed here, and 33 component sub-groups. Wholesale prices are also classified by "economic classes" (manufactured products, semi-manufactured articles, and raw materials), and by degree of price flexibility as shown by frequency of price changes.

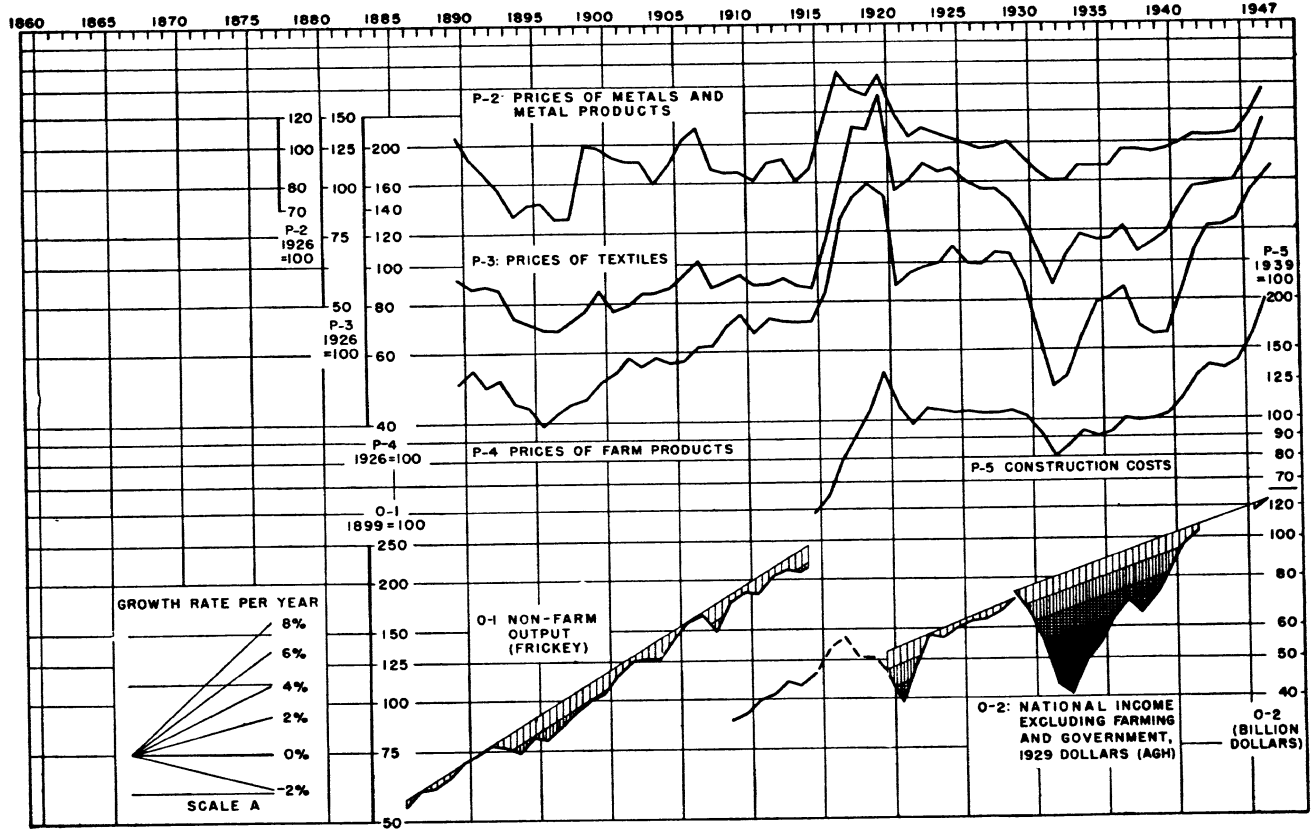


FIG. 15. FLUCTUATIONS IN WHOLESALE PRICES AND CONSTRUCTION COSTS, 1890–1947.

3. The rise during and just after World War I.
4. The sharp postwar drop from 1920 to 1921 (or 1922).
5. The sharp post-1929 drop to 1932.
6. A revival on the upswing beginning 1933.
7. The rise during and just after World War II.

These movements also appear in the index of building costs, 1915 to date (Curve P-5), in the middle of the diagram.[20]

A second central fact is that prices are high or rising, not when output is low (relative to the capacity of the economic system), but when output is high. The downswings of prices come when output is either falling or already at a depressed level. The upswings of prices come when output is either high or rising rapidly.

This proposition that prices move *parallel* with output and not inversely works also for the major sectors of industrial output studied below, although I have not complicated Figures 17 to 21 by including price curves. On the other hand, in agriculture there is inverse movement of prices and output in many cases—a testimonial to the fact that farm output is insensitive to markets, but sensitive to the weather (in both cases, contrary to industrial output).

It would be interesting to go into the variations of pattern shown by the major price groups; but space permits only a few comments. Of the groups shown, metals and metal products (Curve P-2) seem to have had more inflexible prices between the wars than before World War I. This fact (and also the uptrend of construction costs relative to the other groups of prices) probably registers the growing importance of conscious price-making of the sort discussed in Chapter X. The uptrend in prices of textiles (Curve P-3) relative to metal products is an example of the effects of technology on relative prices; production of metal products probably gains in efficiency a good deal more rapidly than does production of textiles, and at least part of the difference comes through in selling prices.

It is tempting to read off the diagram some sort of tendency

[20] This index is the "composite" from Department of Commerce, *Construction and Construction Materials* (Washington, May 1947), p. 25. It reflects changes in both construction wage rates and construction material prices. How successfully it allows for the effect on costs of improving technology—a very difficult task—is doubtful.

of prices to work back to a "normal" level after wartime increases. This appearance is strengthened if we take a longer span of time. Taking 1913 prices as 100, the record works out as follows: [21]

War	*Prewar Prices*	*Peak Prices*	*Immediate Postwar Trough*	*Deepest Trough Before Next Major War*
Napoleonic	97 (1789)	165 (1796)	138 (1798)	135 (1808)
War of 1812	152 (1812)	221 (1814)	148 (1816)	86 (1849)
Civil War	87 (1860)	189 (1865)	119 (1871)	69 (1894)
World War I ...	100 (1913)	221 (1920)	140 (1922)	93 (1932)
World War II ...	110 (1939)	240? (1948?)	? (?)	? (?)

This temptation should be resisted. True, war and postwar price booms ordinarily become top-heavy and lead into price declines. But there is only one case (the War of 1812) where the speculative reaction has quickly carried prices back to prewar levels. The long price declines which took place between wars were ground out by long and grueling depressions—particularly those of the 1870's, 1890's, and 1930's. There is no reason to expect a post-World War II depression of just the right intensity and length to bring prices back to the neighborhood of 1913 or 1939. There is no outside pressure which can compel us to have such a depression; [22] and if we come anywhere near succeeding

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[21] Price series of Bureau of Labor Statistics, as published in U. S. Senate, Committee on Banking and Currency, *Basic Facts on Employment and Production* (79th Congress, 1st Session, Senate Committee Print No. 4, Washington, 1945), p. 17. Statistical materials both for measuring prices and for "weighting" them to make a meaningful index grow more and more scarce as we go back in time. The more remote index figures, consequently, must not be taken too seriously.

[22] In gold-standard days (see Chapter XVI), there was such an outside pressure. Given world conditions as they were at the time, the United States could not have maintained the gold standard without a serious depression in the 1890's, and could not have resumed gold payments at the pre-Civil War gold price in 1879 without a serious depression in the 1870's. The prices of 1872 or 1893 would have led to unbearably heavy gold exports in 1879 or 1899. Whether the gold standard could have been maintained without heavy price deflation in the 1930's is open to argument. In view of our very large share of the world's gold reserves and of the world's economic weight by that time (by both standards, we were something like half of the industrial world), my guess is that the gold standard could have survived a successful policy of resisting the deflation. At least, the prospects of the gold standard would have been no worse than under the policies actually adopted!

It is hard to believe that postwar monetary standards will ever again confront

with the policy of "full employment" to which the nation is committed by the Employment Act of 1946, it is almost out of the question that prices can sag so far. Over the decades, price-making policies and technical advance in production may give us a gradual decline of price levels; but this is not necessary and, in fact, is not likely, in view of the price-making processes analyzed at the end of Part II.

Farm Production. The record of farm production is spread out and compared with nonagricultural production in Figure 16. For most of the period, the figures cover only crop production (Curves O-10, O-11), leaving livestock out of account; but their coverage of crops is fairly good.

The growth of farm output has slowed down much faster than that of nonfarm output. One reason is, of course, the limitation of land available. Crop acreage did not cease to grow with the "closing of the frontier" toward the end of the century; but its growth was checked. Farm population and the number of farm workers fell behind population growth. In fact, the number of farm workers reached a peak about 1910 and has been declining, on the whole, ever since.[23]

At first glance, the fluctuations of farm production may seem to have been of much the same sort as those of nonfarm production. A rather smooth "potential output" curve for crops may be drawn through the peaks. There are several serious drops in output relative to this curve—the deepest and longest coming in the 1930's.

Closer analysis, however, shows that we are looking at something quite different from the industrial curve. (1) The peaks of the crop curve represent the years of most favorable crop-growing weather. Effects of weather on industry are secondary in com-

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the United States with such a policy dilemma. There is one other element in the tendency of prices to revert to prewar levels—the faith of a sector of the business community in the "normality" of such a reversion. This faith makes the economic system somewhat more vulnerable to deflation if prices remain above prewar, since people who hold this opinion may take any price decline as a sign of the reversion and therefore become strongly "bearish." But it is hard to believe that this psychological factor is strong enough to overcome the substantive factors which make for maintenance of a much higher price level after World War II.

[23] A convenient picture of farm population and labor force is given in the diagrams on pp. 86 and 90 of T. W. Schultz, *Agriculture in an Unstable Economy* (New York: McGraw-Hill, 1946).

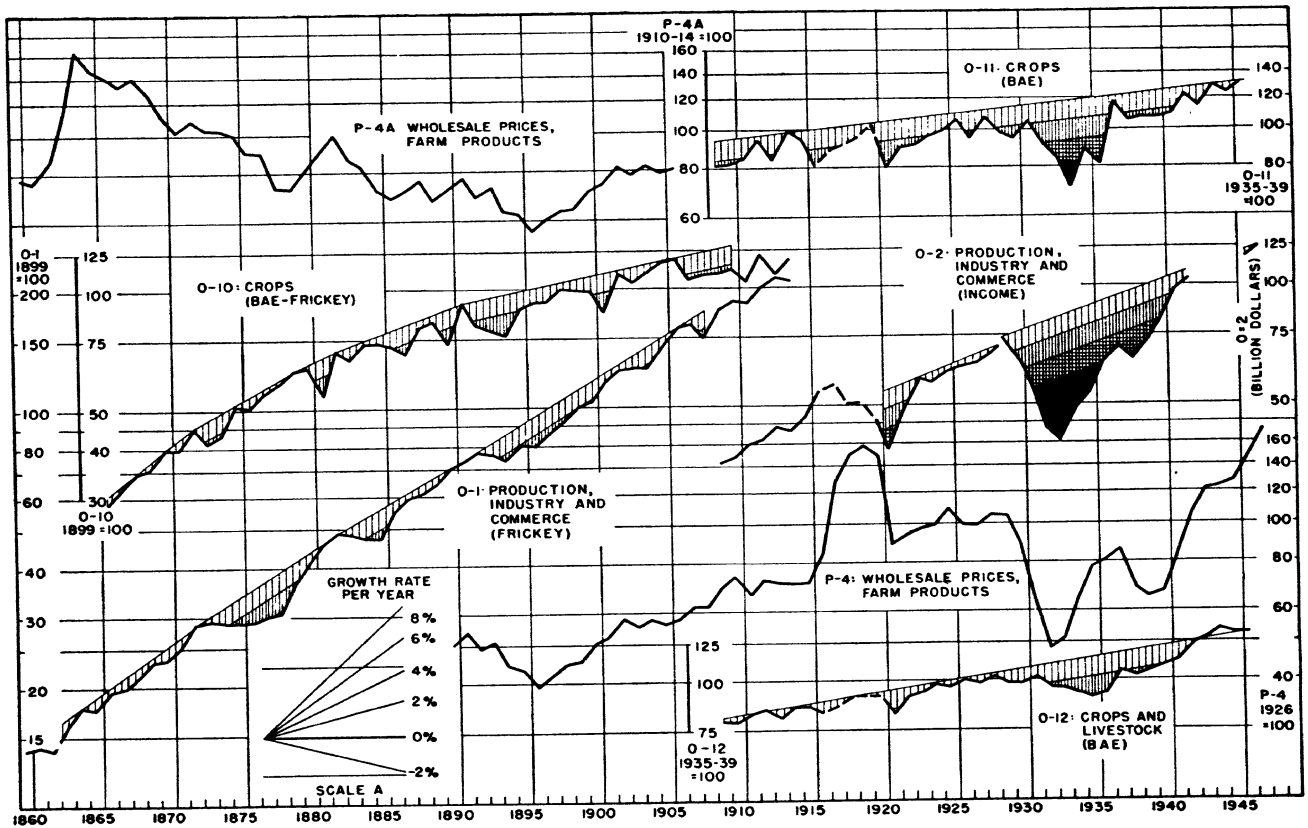


FIG. 16. FARM OUTPUT AND FARM PRICES, 1866–1947.

parison. Hence, the peaks may overstate agricultural potential.[24] (2) The slumps are also clearly linked with bad weather. For instance, in the 1930's the statistics for major crops show acreage *planted* fairly constant, but acreage *harvested* sharply reduced by droughts. (3) Except for the 1930's (when the federal government organized compulsory restrictions), there is no evidence that the slumps reflect cuts in output because producers had poor markets. There is no such clear-cut parallelism of the direction of change of prices and of production as we find for the industrial sector.[25] (4) Agricultural slumps do not synchronize with industrial slumps. The agricultural slump of the 1870's comes before the industrial slump, and agricultural output shows a peak in 1875, a point of deep industrial depression. The bad crop years of the 1880's all come in years of high industrial production (1881, 1887, and 1890). The agricultural slump of the 1890's, like that of the 1870's, was followed by recovery of agricultural output while industrial output was getting worse. Bad crop years from the 1890's to World War I (1907–1911, and 1913) included good industrial years. Farm output dropped in 1921 at the same time as industrial output. In the Great Depression, 1930 was a good crop year even though the industrial depression was well under way. The drop of farm output after 1931 was the joint effect of drought and government restrictions.

Construction. Building construction is also peculiar—but in a very different way from agriculture. Like industry, construction responds to markets, and slumps far below capacity when markets are inadequate to make employment for all its workers at prices that will cover building costs. Peak construction years are always years of good business in general; and construction is almost never in large volume (as farm output often is) when indus-

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[24] Most of the effects of weather on nonfarm activity work through farming—through influences on volume of activity in transportation, and in such processing lines as meat packing; influences on industrial production of goods for farm use; and influences on the nation's foreign trade balance and on inventories. There is a tradition that good crops cause good business. But it is hard to see in Figure 16 any clear evidence that the size of crops has had any strong influence on industrial volume; the relationships just listed were evidently not strong enough to swing the industrial part of the nation.

[25] Check the price curves (Curve P-4A at the top of the diagram up to 1895; Curve P-4 at the bottom, from 1895 onward) against Curves O-10 and O-11. In a number of cases, price rises accompany drops of output—in fact, are caused by drops of output. This occurrence is not common in the industrial field.

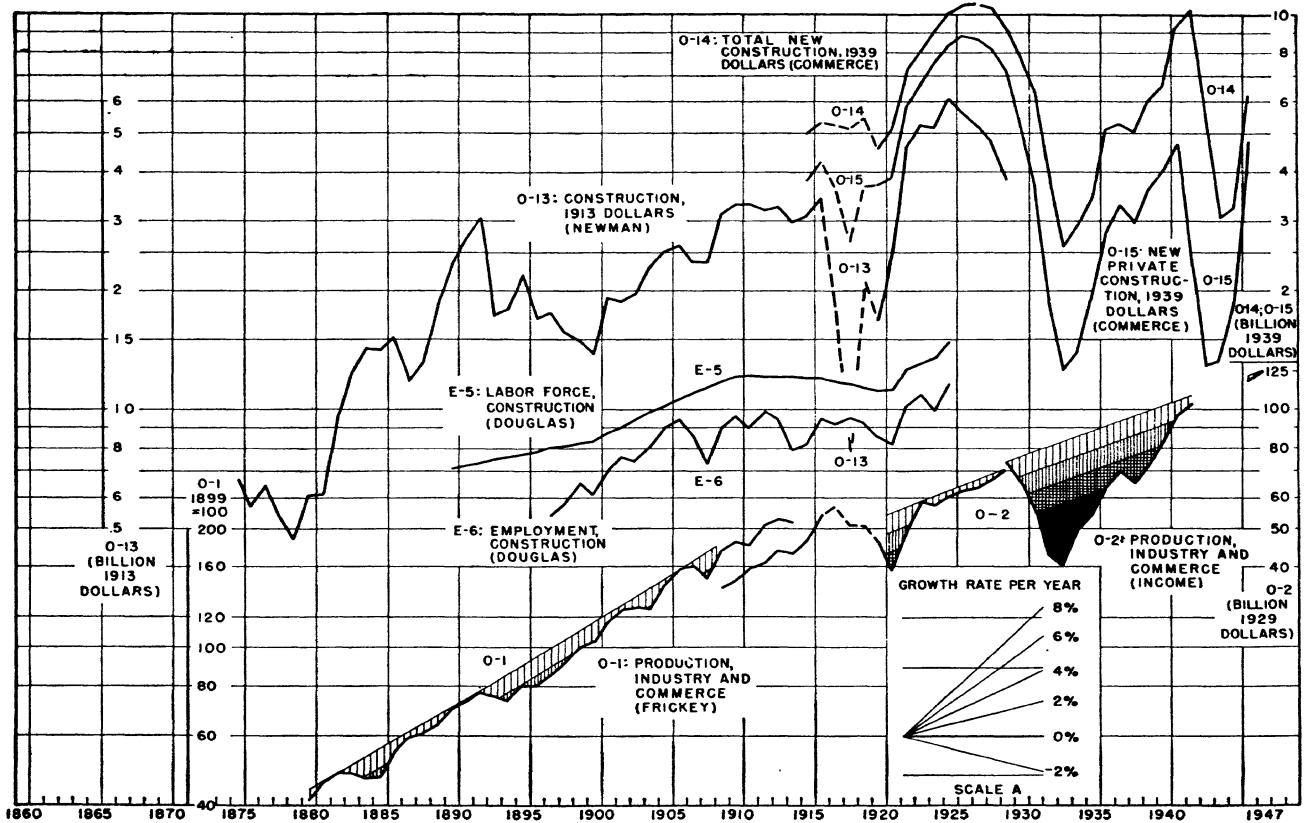


FIG. 17. FLUCTUATIONS IN CONSTRUCTION, 1875–1947.

trial production is in a slump. But construction shows peculiarities in timing, and the interrelations of its peaks are quite different from those of industry.

The available long-term series on construction activity (Newman's series of construction contracts in 1913 dollars, 1875–1930, Curve O-13; and the Department of Commerce series of building activity in 1939 dollars, 1915–1946, Curves O-14 and O-15) are shown in Figure 17. By way of background the diagram also carries the general nonfarm output series from earlier diagrams (Curves O-1 and O-2) and P. H. Douglas's series on the work force and employment in construction (Curves E-5 and E-6).

You will see at once that the peaks of the construction curves do not show any such smooth growth of capacity as do the industrial curves (or, indeed, the farming curve). On the contrary, the major peaks of construction (1892,[26] 1910, 1926, and 1942) are so far apart that construction potential shrinks meanwhile and has to be rebuilt. Specifically, between peak-activity periods, skilled construction workers tend to become over-age (or drift off into other occupations), and new workers to be trained in small numbers. At the same time, contracting organizations tend to fall apart. The labor-force side of this may be seen in Curve E-5 (the Douglas series for the construction labor force), which fails to grow much between 1890 and 1900 during the slump, rises rapidly in the period 1900–1910, shrinks in the period 1910–1920, and rises rapidly again in 1920–1926.

The construction peaks of 1892 and 1906 came in full-employment years with high industrial output. The 1919, 1926, and 1942 peaks also came when industry was going full-blast. But construction downturns do not always match with industrial series. The 1892 and 1906 downturns were common to both construction and industry. Wartime lack of correspondence need not concern us too much: private construction was cut back in both World Wars to make room for government war construction and

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[26] Newman's figures for the early 1890's look suspiciously high, relative to 1909–1913, and are not checked by Douglas's labor-force figures, which go back to the Census data for 1890, 1900, 1910, and 1920. On the other hand (cf. P. H. Douglas, *Real Wages in the United States*. Boston: Houghton Mifflin, 1930, pp. 440–456), the labor-force figures are also somewhat shaky.

Whether or not Newman's peaks are at the right relative height, there was clearly a peak in the early 1890's towering above construction for neighboring years.

to release men for military service. The 1919–1920 and 1942–1944 cutbacks in public construction are also war phenomena. But the downturn of building in 1926 (for private construction, in 1924) does not correspond to the movements of industry.

Another interesting independent movement of construction is its rise from 1920 to 1921. While industrial production was still falling away after the collapse of the 1920 price-boom, construction was already on the rise. As will appear in Chapter XII, this rise of construction against the business trend and the decline against the business trend in the late 1920's are key factors in explaining the history of the interwar period.

Services. A large part of economic activity yields *services* rather than material goods as its products. Sometimes these services are adjuncts to material goods coming from manufacturers or farmers—as are the services of merchandising and freight transportation. Sometimes they are "pure" services, like electric power,[27] medical care, haircuts, amusements, passenger transport, use of house-room.[28] Government also often classifies as a service activity, although I am not treating it as such here.

Except for railway transportation, we lack long-term measures of the physical volume of activity in the service trades. It is believed that these trades have a long-term tendency to grow relative to physical-goods production. In addition, we have reason to think that they fluctuate less—do not fall so far below potential. Like producers of physical industrial products, those who produce services commonly quote prices and see what they can sell. If markets are inadequate, they let production fall below potential. But for several reasons inadequate markets lead to less instability in service output than in industrial output:

1. Much activity in transportation and merchandising is in the handling of farm products, which have characteristically come forward in large physical volume even in depressions.[29]

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[27] The line between "services" and "goods" falls statistically between electricity and cooking gas; although for some purposes gas is thrown in with electricity, which it strongly resembles economically.

[28] What we pay rent for is *room-years*—which are related to houses much as passenger-miles are related to railways. Both rent and the price of railway tickets constitute payment for services.

[29] Another way to put this is that the price-flexibility of farm products has had to offset the price-rigidity of those who transport and market farm products. The

2. Much of the housing service is provided by owner-occupied homes which do not go out of use in a slump (although vacancies in rental housing do occur).

3. Many of the "consumption services" included are thought of by consumers as so essential that they have a low income-elasticity —for example, electric lighting.

Not very much is known about the timing of changes in service activity. But it is doubtful that changes in services often call the turn for an upswing or downswing of business.

Mining. For mining, we have a long sweep of production statistics, which is shown (with industrial output for comparison) in Figure 18. Throughout, the record is dominated by coal production (Curve O-18). Total mineral production as measured by Day and Persons, 1860–1914, and by the Federal Reserve, 1919–1947 is traced by Curves O-16 and O-17.

As the diagram shows, the general character of the mining record is much like that of industry as a whole. The peaks trace out a rather smooth growth curve of productive potential. Mining's years of near-capacity output over most of the period move the same as for manufacture.

There is a striking difference in behavior, however, during the interwar period. Coal production reached a peak in 1923. This level was not reached again during the interwar period: substitution of petroleum and improvements in the efficiency of coal-using operations cut down the use of coal even within the prosperous 1920's. But the pressure of wartime production and early postwar coal exports brought production back into line with earlier trends, showing that the capacity indicated by the 1923 peak was still there—and that mineral capacity as a whole had enjoyed normal growth while actual output was depressed.

The fact that mineral production (particularly coal production) can thus be interpreted in terms of its own capacity series,

number of cents per pound paid to turn hogs into pork, ship pork to market, and sell it to the housewife does not go down much in a slump. Thus, hog prices reflect almost the whole dollars-and-cents price drop at retail. Since the "spread" of processors, transporters, and merchants makes the farmer's share only a fraction of the housewife's dollar in prosperity, the drop is a much larger proportion of the farmer's share than of the housewife's price. On the other hand, on the upswing of farm prices, the farmer gains by a larger percentage than the housewife loses.

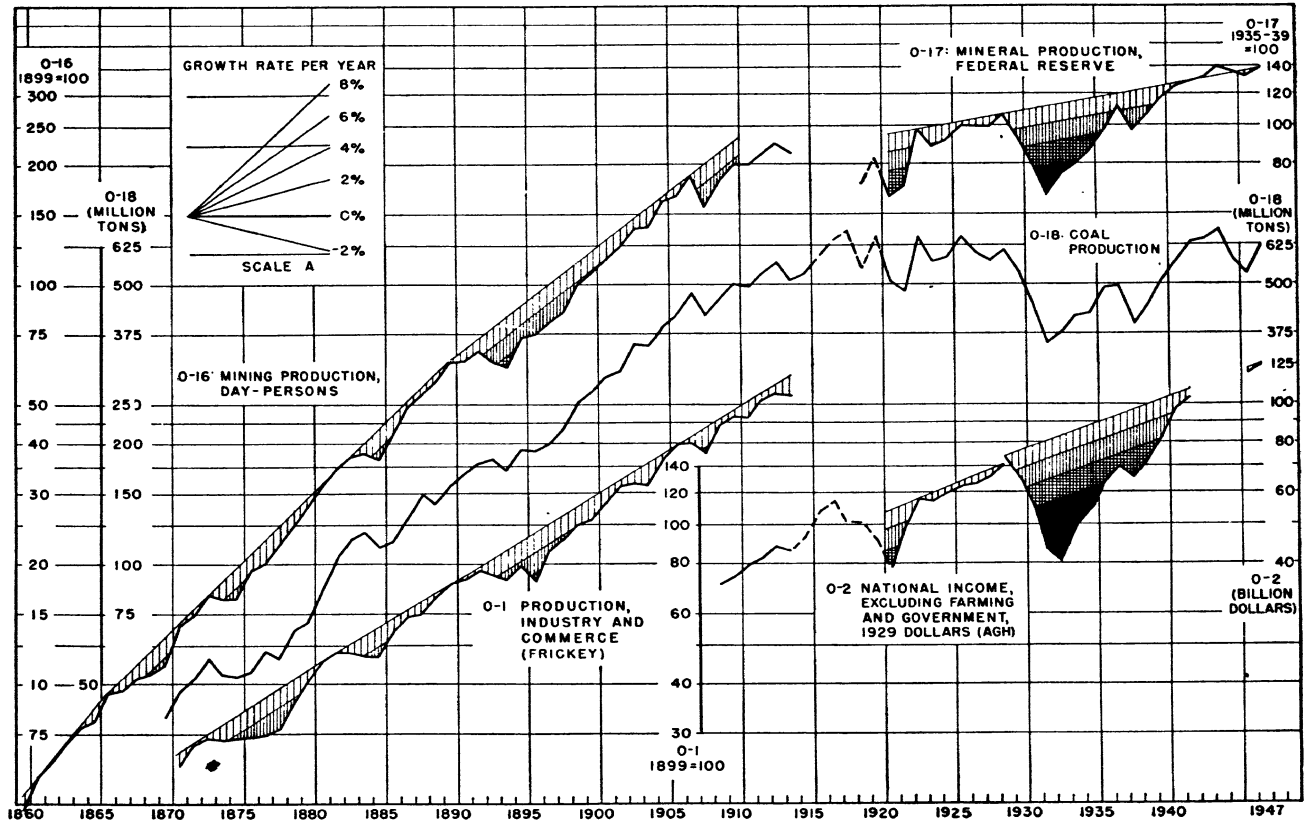


FIG. 18. FLUCTUATIONS IN MINERAL PRODUCTION, 1870–1947.

continuing its growth of capacity over a 15-year slump, is bad news. It is a monument to the difficulty of shifting the labor force out of occupations where it is less needed, even over long periods. Heavy unemployment in coal mining (taking the form chiefly of a small number of days worked per week) was chronic even before World War I.[30] But community ties, much genuine liking for the work, fairly good pay when at work, and hopes of improvement in employment have somehow held a solid nucleus of coal miners, and even dissuaded miners' sons from moving into other work.

The question of mineral capacity is one of the clearest points of conflict between military and civilian considerations in the United States. Our possession of a large force of coal miners added greatly to our military strength in World Wars I and II (and, incidentally, helped greatly in tiding Europe over its postwar coal troubles in 1946–1948). If we are to be able to make a similar long, hard pull in future military emergencies, we need a similar reserve of energy-producing power. On the other hand, to keep this reserve in the form of unemployed or partly unemployed coal miners means a great deal of hardship, injustice, and waste of manpower. Ideally, public policy would presumably find some other form for this reserve.[31] But until this is done, proposals to improve economic welfare by guiding workers out of coal mining must be scrutinized for possible military danger.

Manufactures—Durable and Non-Durable. Quarterly figures for manufacturing production (durable, non-durable, and combined) are compared with the broader production series in Figures 19 and 20, covering the period 1899–1947.

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[30] Reckoning a 309-day year as corresponding to full employment, P. H. Douglas (*Real Wages in the United States.* Boston: Houghton Mifflin, 1930, p. 455) calculates percentages of available man-days unemployed at from 22 per cent to 37 per cent during the period 1899–1913, which (as noted above) is about the nearest thing in the records to sustained prosperity. The 22 per cent figure is for 1913. Other years of good business show 29 per cent (1901), 31 per cent (1906), and 23 per cent (1916). Only in wartime did the proportion drop below 20 per cent —a fact which implies an average working year of 247 days at a time when the six-day week was almost universal.

[31] Rapid progress in developing atomic energy may solve this problem for us—and, incidentally, intensify the problem of finding other uses for the part of the labor force attached to coal mining.

Another possible way to develop a reserve of energy would be to have substantial "strip-mining" operations prepared in suitable parts of the coal fields, but hold down the scale of actual operations until a crucial need for coal appeared.

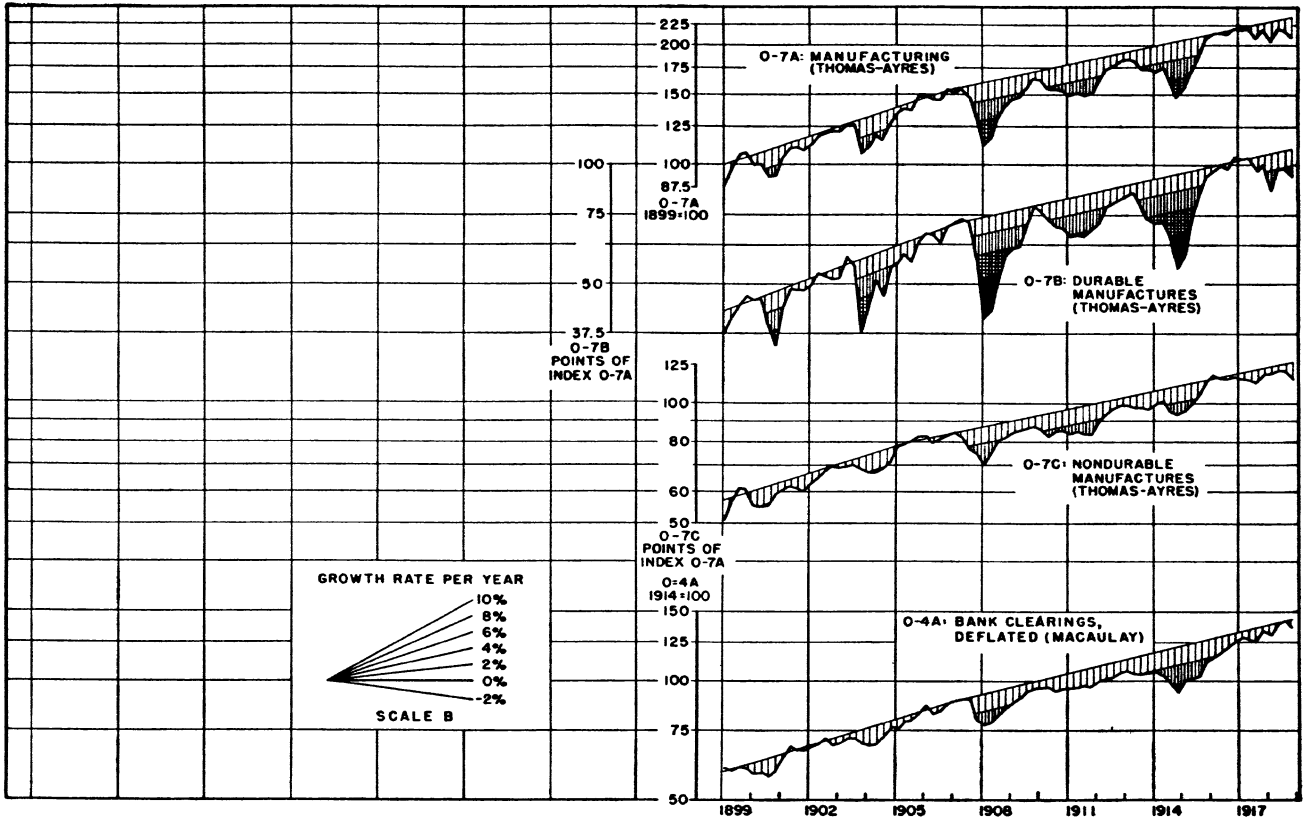


FIG. 19. MANUFACTURES, DURABLE AND NON-DURABLE (THOMAS-AYRES), 1899–1918.

You will see at a glance that both of the component series have the general characteristic of a smooth growth curve through the "peaks" with a break reflecting the changed labor-force situation at World War I. Both series show the same high-production years and the same years of production well below potential.

The biggest difference is that the non-durable curve stays much closer to the potential-output line. For example, the slumps of 1900–1901, 1903–1904, and 1927–1928 fail to carry the non-durable curve below the 90 per-cent-of-potential line, while in each case the low point of the durable curve is below 80 per cent. As a rough approximation, the low points of the durable curve fall about twice as far below potential as the corresponding non-durable points.

In timing, the two components are very similar. Both high points and low points come fairly close together. If anything, the non-durable goods seem to have registered downturns rather sooner than durables. If we take seasonally adjusted monthly figures and allow for the growth trend shown by our "potential" line, non-durables turned down 3 months ahead of durables in 1899, 1 month ahead in 1901, 6 months ahead in 1903, 4 months ahead in 1907, 3 months behind in 1910, 7 months ahead in 1920, 3 months ahead in 1923, a month ahead in 1929, and 4 months ahead in 1937. The picture in 1912–1913 is ambiguous.[82] In 1927 non-durables reached a peak at mid-year—at a time when durables had been moving downward for 18 months and were over 15 per cent below potential—a unique item in the record, since all the other low points in the durable curve are clearly matched among the non-durables. This difference of timing must not be taken too seriously as a guide to the state of business, however. Not only are there some exceptions to the "lead" of the non-durables, but in almost all cases the non-durable downturn was too slight to be clearly recognizable until some time afterward. Wherever we find non-durable output falling rapidly enough to be clearly visible at the time, we find durables falling at the same time. The record shows a few rather rapid declines of durable

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[82] Non-durables sagged very slightly from late 1912 to mid-1913, came back to potential level, and then sagged again at the end of 1913; durables showed a sharp downturn just at the middle of 1913.

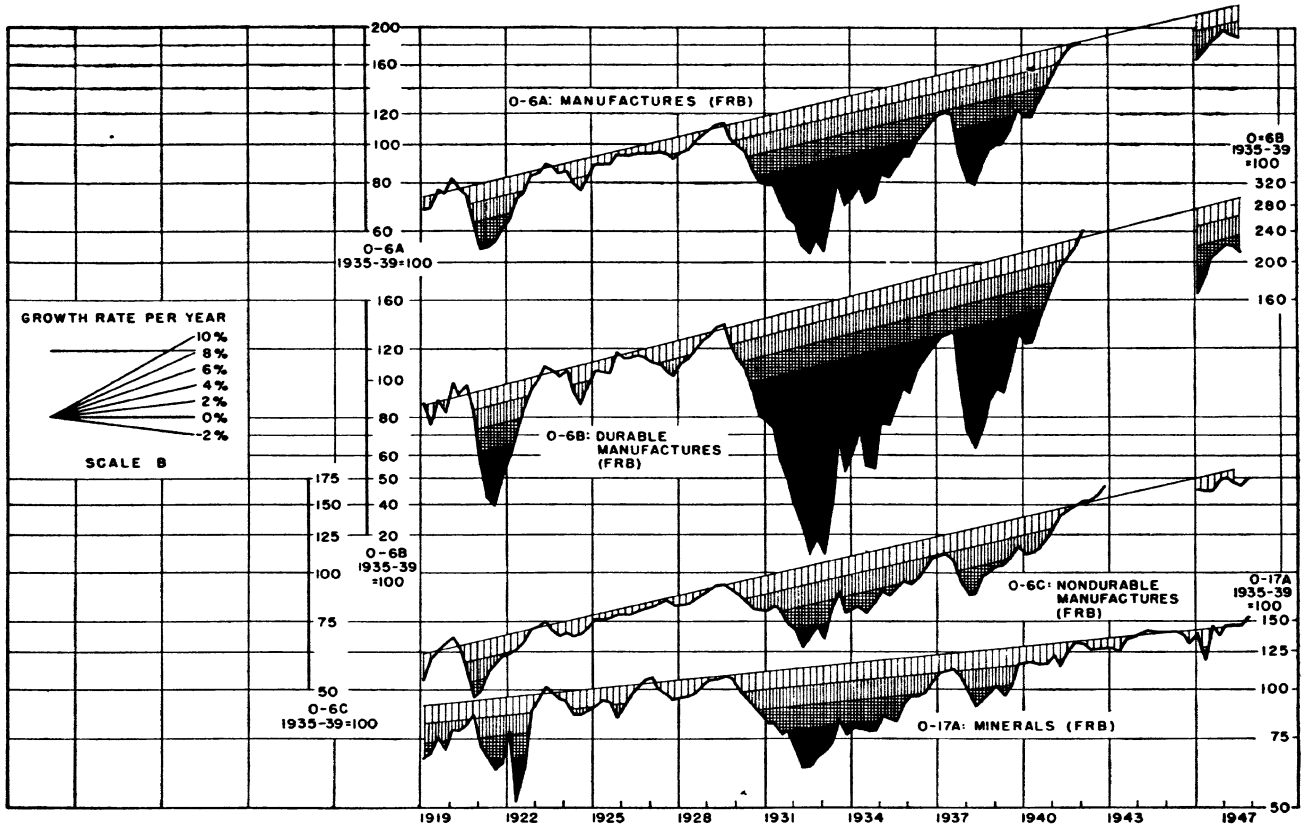


FIG. 20. MANUFACTURES, DURABLE AND NON-DURABLE, AND MINERALS, QUARTERLY, 1919–1947.

production, however—1900, 1903, 1904, 1913, 1926, 1927, and 1934—which the non-durable curve fails to match.

The greater stability of non-durable goods production is due chiefly to two facts:

1. Purchases of durable goods are commonly postponable. Just because they are durable, these goods yield services over a long stretch of time. A would-be buyer can generally make his old durables serve a little longer if a slump in his income (or in his optimism about the future) makes him hesitate to buy as he had planned. Furthermore, if business activity falls off, the user of such goods often can use a smaller flow of services,[33] and can postpone adding to his stock of durable goods.

2. Non-durable goods production is partly made up of manufactured food and other products relying on the flow of materials from the farm; as I remarked in connection with transportation, this influence is a stabilizing one.

The evidence presented in Figure 20 casts an interesting sidelight on the hypothesis of a steady growth in "potential" which underlies much of the discussion in this chapter. The lines used to trace "potential output" in the diagram are based upon the record of 1923 and 1929, to make them comparable with the potential-lines of Figures 13–19, which are based only on annual data. But they come very close to the peak levels of 1919–1920.[34] In the war period, the lines cross "potential" late in 1941. When we remember that unemployment had not quite gone at this time, although melting fast, *and* that manufacturing was using rather more than its normal share of the workers employed, the diagram roughly confirms the potential-output estimate obtained by extrapolation from 1923–1929. Figures for 1947 are about 5 per cent below "potential" for non-durables and about 15 per cent below for total manufacturing.[35] When we remember that out-

[33] Example: the owner of a fleet of taxicabs is called on for less cab-miles in a business slump, and thus has no immediate need to replace cabs which wear out.

[34] As may be seen by close inspection of the diagram, the first two quarters of 1919 and the last two of 1920 were seriously depressed, so that this peak is not represented in the annual data.

[35] If potential for 1947 is estimated by extrapolating a line from the *four best successive calendar quarters* in 1919–1920 and in 1928–1929, the fit is still better. Non-durables for 1947 would come out at 99.5 per cent of potential on this basis, and total manufactures at 90 per cent. Durables would come out at 78 per cent, compared with 74 per cent on the basis used in Figure 20.

put per man-hour in 1947 failed to show the expected gain over 1946, and that durable-goods manufactures were well below the targets manufacturers had set, the hypothesis of a rather steady growth extending over both the Great Depression and World War II fares surprisingly well. The same is true for minerals.[36]

Past and Future Instability in Construction and Durables. Of all the components of output examined above, construction and the manufacture of durable goods—which includes machinery, ships, railway equipment, and so forth—showed the greatest instability, with minerals close behind. If the nation's policy were somehow to smooth out the curve of actual production close to the potential line, it would obviously be necessary either to smooth out these curves or to get *offsetting fluctuations* in non-durable goods production and the various service industries by transferring manpower from construction, durables and minerals.

On the record, we must not hope too much for short-run transfers of workers across these occupational boundaries. The fact that such smooth potential curves can be traced for durable manufactures and for minerals testifies (along with more direct evidence from studies of labor markets) that even in the long run these branches of work hold their labor force. Construction is more capable of changing its share of the labor force—but not very much within a year or two. We may reasonably hope to cut down the tendency of non-durables to swing *parallel* with durables. If we could avoid this parallelism, we should also cut down fluctuations in durables somewhat, by removing the part of the fluctuation of demand for durables which arises from the effect on consumer incomes of unemployment among workers in non-durable goods and service trades. But if we are to get very far with offsetting fluctuations against each other, it must be *within* the durable-goods and construction fields.

Looking at subgroups within these fields, the fact that we have had such large fluctuations in the past makes some fluctuations in the future unavoidable.[37] The reason is that the size and com-

[36] As I mentioned on p. 277, mineral production lacked a clear 1929 peak. But a 1923–1947 line for minerals just passes through the level of late 1941, passes about 5 per cent above 1929, and comes very close to 1926 and 1919.

[37] By this I mean (1) that we can't avoid having fluctuations in certain items so long as individual business firms can accept or reject opportunities to buy equipment, buildings, and so forth, according to their own business judgment; and (2) that if we could avoid fluctuations in these items somehow by influencing busi-

position of our existing stock of houses, factories, passenger automobiles, trucks, railway equipment, industrial machinery, and so forth, reflect past fluctuations in production and almost require future fluctuations. Both the Great Depression of the 1930's and the war years, for example, were lean times in the building of apartment houses. But if we build heavily in the next few years, we shall presently have a lot of relatively new buildings, with much less need of more new ones. On the other hand, war construction has left us with a huge stock of fairly good ocean freighters. If it makes sense to build more in the United States in the next few years, it is only to keep the ship-building industry alive as a military reserve. But along in the 1960's, the time will come when these ships are so seriously worn and so far obsolete that we must either accept a rapid downswing in the *operation* of American ships or a rapid upswing in their *construction.* In a nutshell, the problem is that when we have a stock of items of uneven age and fairly even service life, it is an arithmetical impossibility to stabilize simultaneously the *stock* and the *rate of inflow* of newly produced goods into stock; for the *rate of outflow* is bound to be irregular.

Fortunately, while there are large groups of goods (such as ships and passenger automobiles) with fairly uniform service lives, there are others (such as houses) where both the service life and the quality can be improved by repairs and alterations. Therefore, as a long-run matter, we can expect the fluctuations in demand resulting from the peculiar age-grouping of the existing stock to grow milder *if* we can avoid major slumps for a couple of decades. Similarly, even though there are groups of goods *within which* service life is fairly standardized, it varies among groups.

This problem of fluctuations in the demand for durables which "echo" past fluctuations in output, then, is a problem that we may outlive. But it is bound to be serious in the first 10 or 20 years after a set of sharp fluctuations such as those of the Great Depression and World War II. And if we cannot absorb cutbacks (now in one line of durable production and construction, now in an-

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ness (and supposing the *means* of influencing business to be entirely unobjectionable in itself), it would in many cases be bad social policy to do so. A temporary postwar bulge in the building of houses and automobiles, for instance, is manifestly desirable despite the problems it may create when later cutbacks come.

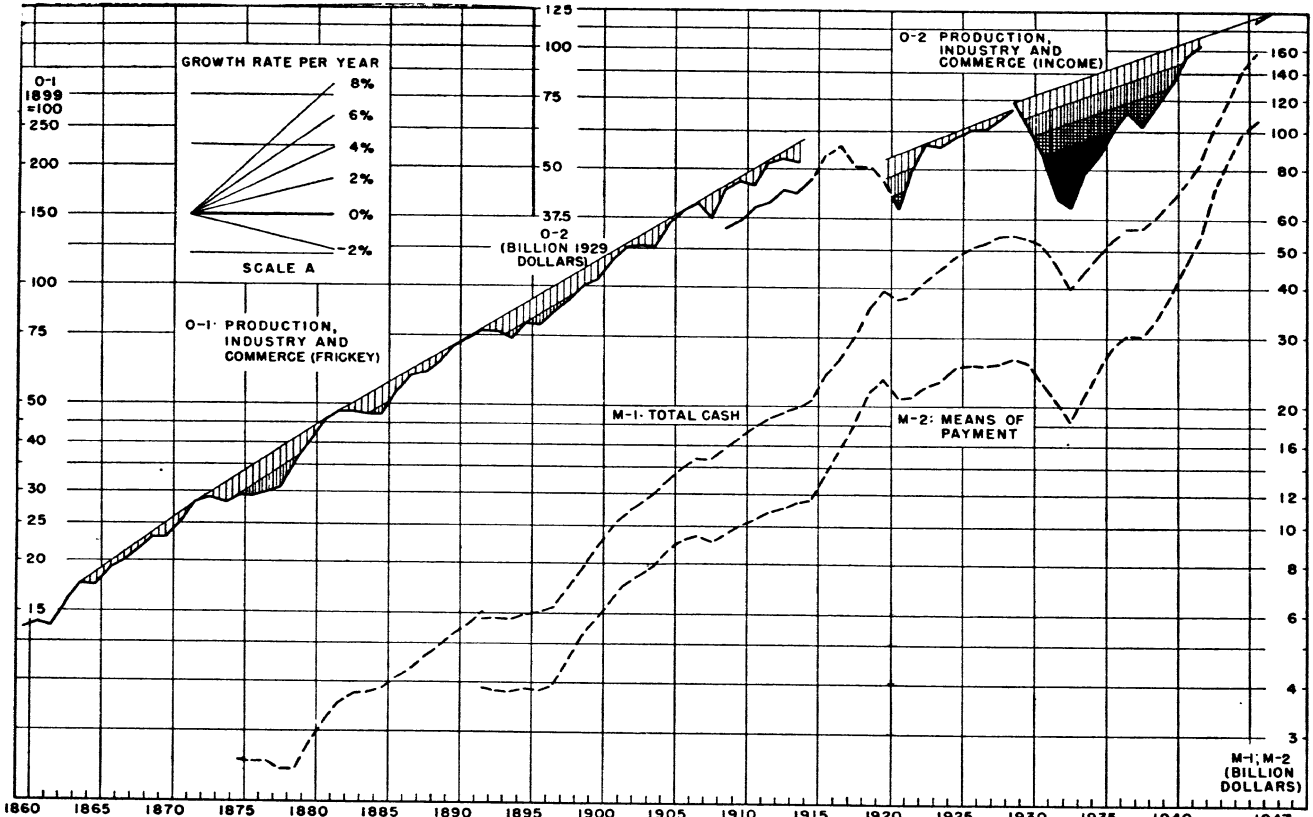


FIG. 21. OUTPUT AND CASH, 1875–1947.

other) without having a serious general slump in activity, the new fluctuations will build a fresh set of future problems into our productive outfit. For the visible future, the issue is whether we can somehow keep our economy on a basis where the fall of one line of durable activity will be fairly rapidly offset by the rise of another.

C. Money in Business Fluctuations

Questions of Fact. Now that we have looked at the patterns of fluctuation in output and prices, it is time we came back to money. According to the monetary theory of Part II, we ought to find money influential in these fluctuations. Does this expectation square with the facts?

In going to the facts, it helps to have a fairly definite checklist of questions. I propose to ask:

1. At downturns and in downswings, is there evidence that the nonbank public is short of cash? That the stock of cash is shrinking?
2. In recoveries, is there evidence that growth of the stock of cash is helpful?
3. Is steady growth of cash needed for steady prosperity?
4. Over upswings and downswings, is the *magnitude* of swings in output and prices of the same general size as that of swings in the stock of cash?
5. Does growth of cash lead into inflation?
6. Is there a definite and stable proportion of income which will be saved at prosperity levels and which has to be "offset" by investment and government deficit if prosperity is to be maintained?

Annual Data. For a quick over-all view, we may look at the annual figures of nonagricultural output used earlier in this chapter, in comparison with annual figures for the cash supply. (Cash was compared with prices in Figure 2 back in Chapter IV and output with prices in Figure 15 earlier in this chapter, so that this comparison closes a logical triangle.)

These data are spread out in Figure 21. The output curves

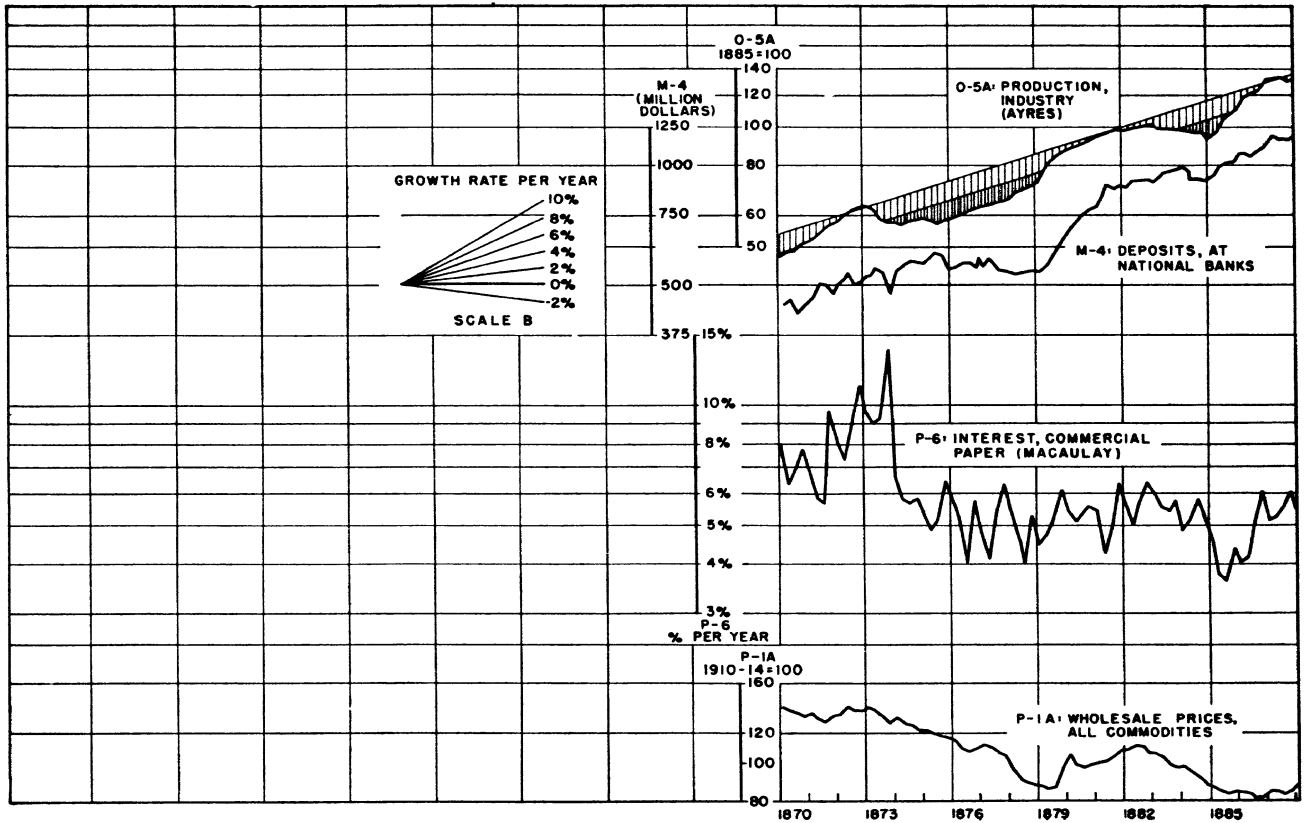


FIG. 22. CASH, OUTPUT, PRICES, AND INTEREST, 1870–1887.

are the most comprehensive nonfarm output series (O-1, Frickey's production index, 1860–1914; O-2, deflated national income excluding farming and government, 1909–1947) The stock-of-money curves are for the total stock of "cash" including time deposits (M-1) and for the stock of "means of payment" including only coin and paper money plus checking deposits (M-2).

You will see at a glance that the diagram is consistent with an answer of "yes" to at least the first four questions posed above. Every major slump in output is marked by a dent in the cash-supply curves. The sharpest downswings of output (the 1870's, 1890's, and 1930's, 1908, and 1921) have corresponding downswings in cash; milder downswings in the 1880's, 1904, 1914, 1924, 1927, and 1938 are marked by perceptible checks in the growth of cash.

Recoveries from the great depressions (1879–1881, 1897–1902, 1933–1936, and 1938–1941) are marked by very rapid growth of cash. Again the milder recovery periods show up in the rate of growth of cash. During and just after both World Wars, there was rapid growth of cash when output was already full. The price data (not shown on this diagram) show these as periods of inflation.

These figures are too rough to say much about the *direction* of causal forces, however. They could be interpreted also on the hypothesis that business activity alters the demand for cash and the banking system responds by changing the supply. To get further inside the problem, we must go inside the individual years of the record and bring in certain supplementary evidence. This is done below in three separate stages—for the period covering the slumps of the 1870's and 1890's; for the 1899–1913 period, noted above as our nearest approach to a sustained prosperity; and for the interwar period.

Cash, Output, Prices, and Interest, 1870–1903. Data for the period 1870–1903 are spread out in two diagrams—Figure 22 for 1870–1887, and Figure 23 for 1880–1903. In both diagrams, cash (Curve M-4) is represented by the public's deposits at national banks (adjusted to eliminate duplication for items in collection) at "call dates" which came five times a year. Prices are represented by quarterly averages of the wholesale price index (Curve P-1a), as extended backward and interpolated within years by

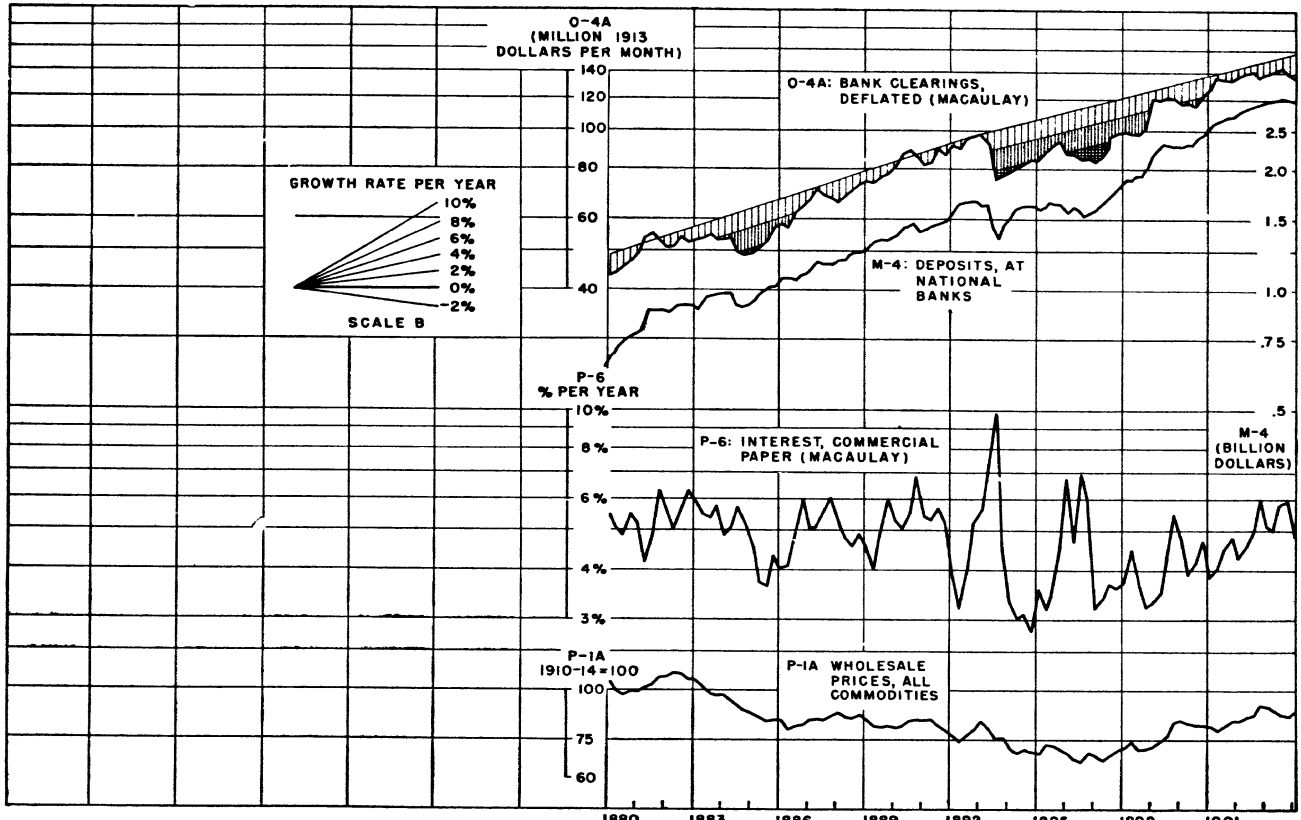


FIG. 23. CASH, OUTPUT, PRICES, AND INTEREST, 1880–1903.

Warren and Pearson. The fine tracery of Curve P-6 traces the course of interest rates, represented by quarterly averages of New York open-market rates on "prime commercial paper." Output is represented by a quarterly index of production by L. P. Ayres (Curve O-5A), 1870–1887, and by quarterly averages of deflated bank clearings (Curve O-4A).[38]

As might be expected, the picture leaves some room for differences of interpretation; but, on the whole, it supports the view that money was an important causal factor. In Figure 22, there is no dramatic downturn of cash until the "panic" of late 1873—some months later than the downturn of output and wholesale prices. But the *growth* of cash had been sharply arrested some time earlier. Interest rates ranging from 9 per cent to 13 per cent during the months containing the downturn are evidence that the cash situation did not merely result from voluntary liquidation of loans by customers who were more liquid than they thought necessary. At the upturn of 1879, cash and output rose together beginning early in the year, with prices coming along behind. The downturn of 1881 is visible in output and prices before it shows up in cash; but again the growth of cash was arrested before the downturn of output and prices. Interest rates at this time (5 per cent to 6¼ per cent in quarterly average figures) were moderate, and suggest that banking pressure was not a primary cause of the downturn, however.

The second part of the period looks still more as if money had been a moving force. The downturn of 1881 we have just examined. The upturn of 1884 (in output only—prices continued to sag) was matched by a rise in cash. In the early part of the upswing, interest rates were low and falling, which looks particularly as if banking were taking the initiative. The peak of 1890, the mild slump afterward, the upswing of 1891–1892 and the 1892 downturn are all faithfully mirrored in the curves for cash stock and for interest. The partial recovery of 1894–1895, and

[38] The bank clearings index cannot be carried across the depression of the 1870's because it begins only in 1875; but Curve O-5A has a time-shape in this period which is well confirmed by comparison of annual series (Figure 14). Curve O-5A has drawbacks for the second period because it shows 1902 as a "submerged peak" with output below 90 per cent of potential as gauged by output of 1892 and 1906—in contradiction with the other annual output series in Figure 14 and the employment series in Figure 13. Curve O-4A, however, has yearly averages (Curve O-4 in Figure 14) which match well with other evidence for 1880–1903.

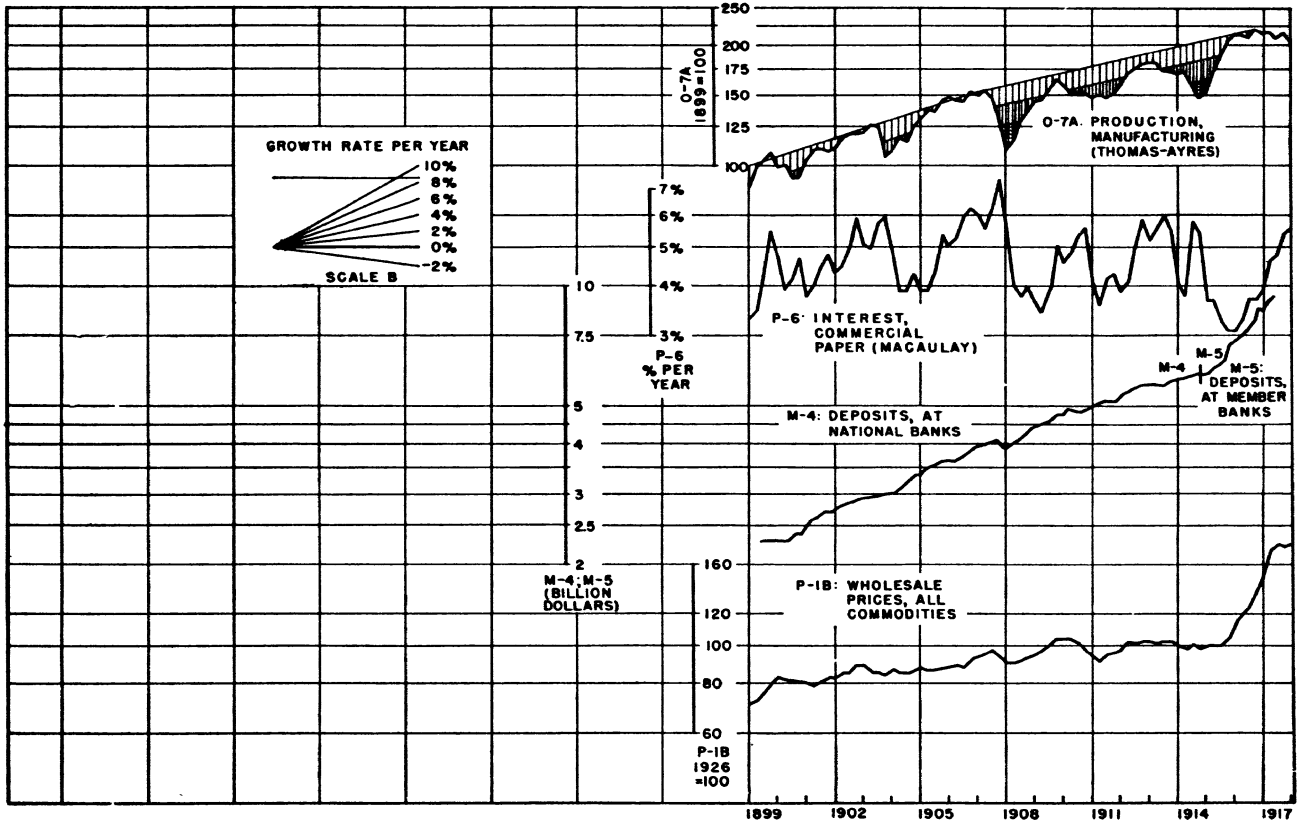


FIG. 24. CASH, OUTPUT, PRICES, AND INTEREST, 1899–1917.

the renewed downswing afterward also appear. At the beginning of the 1897 upturn, cash had a clear lead, and interest was low in the early part of the upswing. The very slight sagging of 1899–1900 seems to have affected output and prices before it appeared in the curves for cash and interest—another case where money may not have been the moving force—but in this stretch of years this case is the only noticeable discrepancy.

Looking across the diagrams, the only downswing (1881) where money may not have been very influential either at the turn or soon after led into a comparatively mild depression. The hypothesis that money was a major influence seems plausible on the record for the downswings into the great depressions of the 1870's and 1890's, and for all the well-marked upswings.[39] Taking the period as a whole, failure of cash to grow in line with potential output corresponded to a sagging off of prices and a sagging of output below potential. Rapid expansion of cash corresponded to price rises and to growth of output. Even the minor movements of cash have a rough correspondence with those of output. The minor movements of prices are more or less independent of cash and output—probably because of irregular fluctuations in farm output and the crop outlook.

Cash, Output, Prices, and Interest, 1899–1917. Roughly the same materials are shown for 1899–1917 in Figure 24. Output in this case is measured by a backward extension of the Federal Reserve index of manufacturing production (Curve O-7A).[40] Be-

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[39] The upswing of 1879 is especially interesting. It is hard to attribute it to the economics of foreign countries, where the business situation was mixed. It was not due to crops: 1878 crops had been large and prices low, and the upswing started too early in the year for crop prospects for 1879 to be a factor. The only clear-cut factor that can be called in to explain the sharp upswing is the sharp cash expansion.

Going behind this growth of cash, the decisive event is apparently the "resumption of gold payments" by the United States Treasury in January 1879. This action produced a tremendous easing of bank credit. Down to this time, the downtown banks in New York had held reserves considerably above the legal 25 per cent requirement and interest rates had risen sharply whenever their reserves fell as low as 30 per cent. Suddenly in 1879, these banks proved willing to let their reserves drop to 25 per cent without pushing up interest. This lowering of reserves was the source of the lending power that launched the 1879 recovery. My impression is that the change in bank attitudes rested on the availability of their London funds as "secondary reserves," now that gold from London would bring a dependable price.

[40] This index, for 1899–1930, by Woodlief Thomas, was published in *Federal Reserve Bulletin*, January 1931, p. 46. A monthly interpolation of the index was

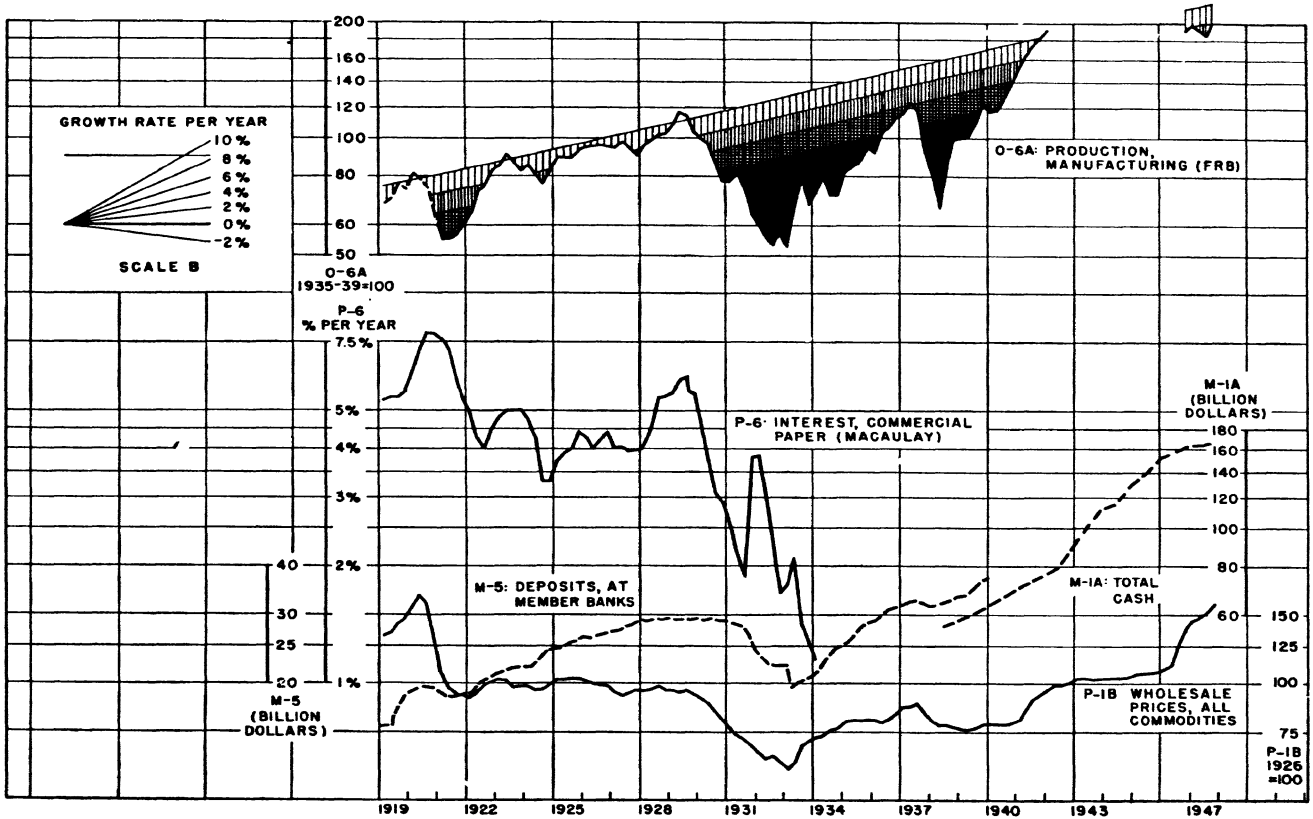


FIG. 25. CASH, OUTPUT, PRICES, AND INTEREST, 1919–1947.

ginning with the end of 1914, deposit figures are for all member banks (Curve M-5) instead of for national banks only (Curve M-4).[41]

The fluctuations of the output curve can be seen in the cash curve, but the downturns do not show up very strongly. In monetary terms, the demand for cash rather than the stock must have changed at most of these turning points. In the downswing of 1907–1908 and in all the upswings (1900, 1904, 1908, 1912, and 1914–1915), the stock of cash moves more in accord with expectation. But the cash-supply curve on the whole is very smooth. Incidentally, so is the price curve. Despite some oscillations and a noticeable upward drift, this period is the nearest thing to a prolonged period of steady prices (as well as to a prolonged prosperity in terms of output and employment) in our record. In late 1915, with output comparatively full, appears the start of the World War I inflation. Both cash and prices start to shoot up very rapidly—and roughly in proportion.[42]

Cash, Output, Prices, and Interest, 1919–1947. The record for 1919–1947 appears in Figure 25. Output is represented here by the Federal Reserve's index of manufacturing production (Curve O-6A).[43] Cash is represented by adjusted deposits at member banks (Curve M-5) for 1919–1939 and total cash (Curve M-1A) for 1936–1947. The interest curve breaks off at 1933, having apparently lost its symptomatic importance thereafter.[44]

The larger movements of output and of cash match very well. The 1919–1920 upturn and slump, the 1921 upturn, the 1938

worked out by L. P. Ayres and published in his *Turning Points in Business Cycles* (New York: Macmillan, 1939), p. 203 (used here by permission of the publisher). Monthly figures reduced to quarterly averages.

[41] Federal Reserve Board, *Banking and Monetary Statistics* (Washington, 1943), p. 73. A little of the growth shown represents the addition of state banks to the system; but data on the number of banks and their common stock outstanding show that this process was very gradual until after June 1917.

[42] European buying in this country had both a direct impact on prices and a credit-expanding effect through gold imports which went into bank reserves. Thus, cash expansion and price rise had a common outside cause. But without the action of the deposit-creation multiplier on the added reserves, it is hard to believe that the price rise could have gone very far.

The flattening of the price curve in 1917 represents the effect (at least on price quotations!) of wartime price control.

[43] *Federal Reserve Bulletin.* Monthly figures are reduced to quarterly averages.

[44] The Federal Reserve "easy money" policy in 1933–1941 and also through the war took the form of setting low open-market interest rates and holding them steady. For years the commercial paper rate stood at ¾ of 1 per cent.

downturn, and the 1933–1937 and 1938–1941 upswings are all common to output and cash. At the upturns of 1921 and 1933, output starts up before cash. The downturn of 1929 (a prize exhibit for those who emphasize money) shows a check to the growth of cash and a stiffening of interest rates a full year ahead.

The milder fluctuations of the 1920's show up in the cash series only as fluctuations of the rate of growth. In this fact and in the smoothness of the price curve, the period is something like that of 1899–1913. There is a significant difference in the interest pattern, however. The interest curve is less jagged than in earlier periods. In addition, except for the years 1921–1922 and 1931, it tends to move parallel to the output curve, whereas in the periods 1870–1899 and 1899–1913 it moved inversely. That is, in the 1920's fluctuations of interest rates ("managed" by the Federal Reserve) tend to smooth out business fluctuations, whereas before World War I they tended to accentuate business fluctuations.

In World War II, as in World War I, there was a phase of rapid price advance, matched by a rapid growth of cash which continued after output had come up to full-employment levels. The price-control plateau in the price index (1943–1945) was clearly marked; after V-J Day, however, prices made up for lost time.

Chapter XII offers a more detailed analysis of this period; hence, further discussion can be adjourned.

"Offsets to Savings." Another hypothesis that can be tested from the record is that prosperity requires "offsets" to absorb the saving of a good proportion of a full-employment national income.

Simply as a yes-or-no proposition, this is clear-cut. According to Kuznets,[45] corporations "saved" part of their net income in every year of prosperity covered by his studies going back to 1914, and so did individuals. Negative net savings appear in a few depression years. The Department of Commerce income figures from 1929 to date tell the same story.[46]

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[45] Simon Kuznets, *National Income and Its Composition* (New York: National Bureau of Economic Research, 1941), p. 276. *National Product in Wartime* (New York: National Bureau of Economic Research, 1945), p. 115. Individual net savings appear as negative only for 1934; individual plus corporate net savings, only for 1931, 1932, 1933, and 1934.

[46] *Survey of Current Business,* National Income Supplement (July 1947), p. 20. "Personal saving" is shown as positive except for the period 1932–1934, and the combination of personal saving and undistributed corporate profits (including inventory revaluation adjustments) as positive except for the period 1931–1934.

When it comes to stable uniformities in the *proportion* which necessary offsets must bear to income, the evidence is far from clear-cut. Department of Commerce figures show net savings of individuals and corporations (and hence corresponding "offsets") to be about 8 percent of national income in the prosperity years 1929 and 1946. During 1930–1940, the highest ratio was 7 percent (1936). But income was then about 4/5 of potential,[47] so that offsets were only about 5 percent of a full-employment income. If we could take these figures at face value, we might infer that prosperity needs offsets exceeding 7 percent of full-employment income. But the figures are decisively affected by arbitrariness in estimating "capital consumption" and perhaps by statistical errors. If we take offsets gross (*i.e.*, the sum of gross private investment plus government deficit on income and product transactions) and compare with gross national product, we find offsets as large a percentage of full-employment gross product in 1936 as in 1946.[48] Pending better statistics, it is prudent to assume we lack an adequate basis for forecasting the volume of "offsets" needed to support full employment.[48a]

How Crucial Is Money? Going back to the questions from which I started this section, this review of the evidence tells heavily in favor of money as an influential factor in fluctuations.

1. Most major downturns have come when the stock of cash began to shrink (or, at least, ceased to grow as called for by rising productive capacity). Most major downswings have shown a decline in the stock of money—with interest rates high enough, at least early in the decline, to contradict the notion that the public was retiring excess cash by paying off bank loans.

2. Most recoveries from depression have been accompanied by

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47 Total national income (including agriculture and government) is here treated like "industrial national income" above. Department of Commerce figures (*Survey of Current Business*, National Income Supplement, July 1947, and continuation, July 1948 are deflated to 1929 dollars by the same indexes used on pp. 544–545. 1929 and 1946 are taken as full-employment years, and potential for intermediate years estimated by assuming a uniform percentage rate of growth. Each year's potential full-employment income is then "reflated" back to current dollars. The only year showing both serious unemployment and a high savings ratio (1941, with a ratio of 10%) was a year of very rapid business improvement.

48 Gross national product is treated in the same way, with the same deflator. Gross offsets work out at about 15% of full-employment GNP in 1929 and again in 1941, at about 12½% in 1936 and again in 1946.

48a This is a question on which there are two opinions, and articles in professional journals arguing that there is a stable and measurable need for offset are frequent. A notable example is M. Ezekiel, "Saving, Consumption and Investment," *American Economic Review*, March and June 1942.

a growth in the stock of cash going far beyond the normal rate of growth, with such timing as to suggest that cash was very influential.

3. The two periods of fairly steady prosperity have also been periods of steady growth in cash.

4. Very rapid growth of cash when production was close to potential has led to price inflation.

5. In major disturbances (major depressions and inflations), the swing in the stock of cash is of the same general size as swings in output and/or prices. This relationship shows up in the diagrams in the rough parallelism of the curves, with slopes showing changes in per-cent-per-year. But within the periods which approximated stable prosperity (1899–1913 and 1923–1929), output fluctuations are of greater amplitude than fluctuations in the stock of cash.[49]

6. The hypothesis of a simple and stable savings relationship telling the necessary amount of "offsets to saving," however, does not seem consistent with the rather inadequate collection of facts that we have to test it.

The fact that the first five hypotheses stand up under inspection is not conclusive, of course. They are not the only hypotheses which could survive confrontation with the facts. Some of the other hypotheses that we might adopt might lead to noticeably different policy inferences.

One alternative hypothesis would be that monetary influences on business activity and prices act through granting of loans to business rather than through changing the public's stock of cash. Down into the 1930's, the curve of bank loans outstanding has so many of the same characteristics as the curve of deposits that the story of the three periods analyzed above could be told almost as convincingly in terms of loans as of deposits. On closer analysis, however, this hypothesis is not so very different from that of an influence through the stock of cash.[50] As I pointed out in discussing the "creation of deposits,' we must suppose that when loans

[49] We must not infer that monetary policy is helpless at such times. On the contrary (see Chapter XII, below), the feeling was at the time that changing the direction of monetary pressure had a strong effect on business activity.

[50] "Monetary theories of the business cycle" often slip back and forth from one way of talking to the other.

and deposits are expanding, there is also an expansion of unused lines of credit. If we analyze the problem closely, we must find that "easy money" increases the public's liquidity (1) by increasing unused lines of credit which potential borrowers treat as money substitutes, and (2) by setting up a flow of payments from actual borrowers to their suppliers which increases the cash of the suppliers. Whether we focus attention on the flow of payments, the expansion of lines of credit, or the expansion of cash, the other aspects must be read between the lines.

Without going into details about other possible interpretations, it is plain that there may be many. Professional opinion among economists is skeptical of the influence of money. This skepticism may be partly a matter of intellectual fashion: while we are busy correcting an overemphasis (in this case, overemphasis on the rigidity of the "velocity of circulation"), we easily slip into the opposite error. But this professional opinion must also be taken seriously as evidence of the "feel" of the way our present-day economy works.

The upshot is that it looks as though the stock of cash is an important influence in fluctuations, but we cannot be very sure. This finding has a considerable importance for policy—which you may read between the lines in the next chapter and on the surface of the policy discussion in Part V. It is not prudent to plan policies which rely heavily on the stock of cash as an influence on the public's behavior; policy should be designed to work whether or not this influence is very strong. But at the same time, it is not prudent to plan policies which will have a dangerous backwash if the stock-of-money influence turns out to be intense.

* * *

Note on Alternative Points of View and Supplementary Readings

For a general account of theories of the business cycle, the standard reference is G. von Haberler, *Prosperity and Depression* (new revised and enlarged edition: Geneva, League of Nations, 1939). The student may be interested to verify the astounding fact that many theories describe the boom as growing out of a full-employment "equilibrium" rather than out of a depression—probably a by-product of the tradition that an adequate theory must be capable of explaining how a cycle could arise in a previously stable economic system.

For a set of diagrams (containing much information, not very re-

vealingly arranged), see *Federal Reserve Charts on Bank Credit, Money Rates, and Business,* published in monthly editions since June 1947 by the Federal Reserve Board.

At the textbook level, an extensive account including description, theories, and stabilization policy is offered by J. A. Estey, *Business Cycles* (New York: Prentice-Hall, 1941).

At the level of monographs and treatises, the most authoritative and up-to-date are probably:

A. F. Burns and W. C. Mitchell, *Measuring Business Cycles* (New York: National Bureau of Economic Research, 1946).

E. Frickey, *Economic Fluctuations in the United States* (Cambridge, Mass.: Harvard University Press, 1942).

J. A. Schumpeter, *Business Cycles* (2 vols., New York: McGraw-Hill, 1939).

A number of authoritative articles by various economists are reprinted by the American Economic Association in *Readings in Business Cycle Theory* (Philadelphia: Blakiston, 1944).

— *Chapter XII* —

A REVIEW OF THE INTERWAR ANNALS

Why Review the Annals? This chapter is a brief review of the economic history of the United States between the two World Wars, interpreting events in the light of the monetary theory of Part II and of the general evidence on fluctuations just examined. Each major episode appears roughly in historical order.

There are several reasons for such a review:

1. It is useful to have a clear notion of what an economist means when he calls up a date to illustrate a type of situation. The years 1920, 1923, 1929, and 1932 have personalities, as it were, with which you need to be acquainted if you want to follow an argument about recent economic events—just as you need some acquaintance with the personalities of F. D. Roosevelt and Herbert Hoover to keep track of a political argument.

2. The review gives you a chance to check whether the sort of theory I have been talking can be used to talk sense about actuality. This check is not very strict, since there is room here only for a very brief and incomplete sketch; and without worrying about my intellectual honesty, you had still better assume that the details I mention are selected in a way that will make my theories look respectable. But you can get a fairly reliable notion whether the facts have to be strained to fit, or whether the theory is reasonably realistic.

3. Despite the break imposed by World War II, the interwar period is still what our postwar economy grew out of; and for years in the future its study will be necessary if we want to have any idea how deep-seated various lines of development are.

Post-Armistice Boom, 1919–1920. For a few weeks after the Armistice of November 1918, employment and production were

disturbed. Munitions production was cut off in full swing (except that for reasons good and bad the wartime ship-building program was extended several months). There were some delays involved in planning peacetime operations, finding markets, and so forth. For three or four months, some prices declined.

By the spring of 1919, however, business was on the upgrade. Industrial production shot up; construction contracts mounted; department store sales expanded. Both war workers and demobilized soldiers and sailors quickly found jobs. In the last months of 1919 and the first months of 1920, we had full employment.

This upswing had a strongly inflationary flavor. Consumer-goods prices rose steadily until the middle of 1920, and the HCL (high-cost-of-living) was a household word. Almost all classes of prices reached peaks more than double 1913 levels; and food and clothing in June 1920 were a third above early 1919 levels. Business buyers had trouble getting supplies and found they had to place each order at higher prices than the last. With prices rising, buyers tried to buy ahead and build up inventories rather than wait and buy later at higher prices. This led to "pyramiding" of orders by asking suppliers for more than the buyer meant to take, in hopes of getting a fraction of what was ordered. Statistics of department store stocks (the only major inventory series clearly visible at the time) show a sharp rise late in 1919 and early in 1920.

On the financial side, the United States Treasury apparently ran a heavy cash deficit in the first half of 1919 and a small one in the second half, developing a surplus of receipts over expenditures early in 1920. Banks started to expand loans early in 1919, and continued until late in 1920. The public's cash assets (coin and paper money outside banks plus bank deposits) rose from $34.6 billion in mid-1919 to $39.6 billion in mid-1920, or by 14 per cent in a year. Terms of lending were stiffened late in 1919, by Federal Reserve action; interest rates were high and rising from then until late in 1920.

The boom evidently rested on a combination of factors. The Federal cash deficit and Federal Reserve easy-money policy to aid war financing had created a wartime inflationary pressure which continued for nearly a year after the Armistice, although these factors were working *against* inflation by early 1920. European

countries were buying heavily here throughout 1919 and 1920 (paying largely with the proceeds of loans from our government, which thus continued to help inflation after they ceased to figure as government outlays): the excess of commodity exports exceeded $200 million in almost every month down to the middle of 1920, and totaled $4 billion for 1919 (this amount compares with a national income of rather under $70 billion). Construction took hold rapidly, and so did automobile sales. Inventory expansion absorbed a considerable share of output.

More broadly, the boom was supported by "backlogs of demand" at home and abroad, by an inflationary financial situation (expansion of bank loans replacing the Treasury deficit as a source of fresh cash for the public), and by a general sense of psychological release from war tension.

The Slump of 1920–1921. The boom broke during 1920. The main explanations of the downturn and succeeding downswing seem to be (1) the top-heavy speculative situation of commodities—with inventories as large as they were only because of expectations of rising prices, and with an underlying sense that prices were bound to come down; (2) monetary deflation, taking hold through bank loans and security prices.

The top-heaviness of the boom was enough in itself to guarantee some sort of setback. As I have just pointed out, buying ahead of requirements was good business for firms which expected to have to pay more if they waited. But presently prices were carried up to a point where they were generally felt to be abnormally high. A representative view of the position was probably roughly like this: "Yes, I know our inventories are rather large; we paid too much for them, and we are charging too much for the goods we are selling. This can't go on forever. But we think that for a few months ahead people will go on paying extravagant prices; and if we refused to do business this way, we'd simply be throwing away profits that are there for the taking." In a nutshell, people were willing to buy goods and hold goods at prices they thought were excessive because they counted on finding other people who were enough more foolish to take over the overpriced goods at still higher prices. When the representative owner of goods counts on finding a "sucker" to give him his profit, collapse becomes inevitable; eventually the holders will find that they them-

selves are worse "suckers" than anybody else in sight. When they reach this realization, their attempts to unload will break prices.[1]

The monetary deflation resulted from deliberate policy action of the Federal Reserve authorities. During World War I, there had been a great credit expansion and a general rise of prices. The credit expansion rested on the lowering of commercial bank reserve requirements when the Federal Reserve Act went into force, gold imports in 1915–1917 with which the Allied countries paid for part of their war purchases, and the Federal Reserve wartime policy of expanding "Federal Reserve Credit" (that is, the sum of Reserve holdings of rediscounts, acceptances, and government securities) as much as was needed to keep Treasury securities at good prices. By the end of the war, member banks had rediscounts which exceeded their reserve balances, so that owned reserves were below zero and the banks were operating entirely with *borrowed* reserves.[2] Once the Treasury's debt operations seemed under control, the Federal Reserve set about raising interest rates. At all the Federal Reserve Banks, rediscount rates were raised at least twice between October 1919 and June 1920. From 4 per cent or 4½ per cent in October 1919, the rate had risen at all the Federal Reserve Banks to 6 per cent by February 1920, and at four of the more important ones went on to 7 per cent in June. No reductions were made before the spring of 1921. Similarly, Federal Reserve buying rates on acceptances were increased in late 1919 and during 1920, and did not start down until June 1921. In response, commercial banks raised the rates charged to

[1] This sort of top-heaviness characterizes the genuine "boom," as distinct from "prosperity" on which a "boom" is superimposed. The famous Florida land boom of the early 1920's, the Stock Exchange boom of the late 1920's, and various suburban real estate booms, have been like this. Commonly "boom" psychology does not affect all classes of assets at once. Thus, in 1919–1920 there was a boom in commodities and farm real estate; but stock exchange dealers did not share the excitement, and the stock market began to fall late in 1919.

[2] Member banks started off in June 1917 (when the use of reserve balances as sole legal reserves became effective) with $1.05 billion of reserve balances and $0.20 billion of rediscounts—thus, with $0.85 billion of owned reserves. But they had to get new reserve funds to meet a drain of paper money into circulation; the circulation figure rose from $3.78 billion in June 1917 to $4.95 billion in December 1918 and $5.41 billion in October 1920. In addition, the growth of the public's deposits built up reserve requirements. The need for larger reserves forced a growth of rediscounts to a peak (October 1920) of $2.81 billion; at this stage, reserve balances were $1.82 billion, so that owned reserves were *minus* $0.99 billion.

customers on loans, reaching a peak of about 7 per cent in the winter of 1920–1921; rates on open-market commercial paper rose from a range of 5⅛ to 5⅜ per cent during most of 1919 to 8⅛ per cent for July–November 1920. Yields on every type of bond rose (that is, prices fell) with about the same time-table. Most bonds were already selling below par value in 1919 and went down still further in 1920; thus, United States Government bonds ("Liberty Bonds"), which averaged 92 per cent of par in 1919, were down to 82.6 per cent in August 1920.

The Federal Reserve Banks did not appreciably change their holdings of government securities during this high-interest period. Federal Reserve acceptance holdings dropped several hundred million dollars—purchases by some commercial banks thus intensifying the shortage of reserves for others. Commercial banks substantially stopped loan expansion in the middle of 1920, and began a rapid loan contraction in the autumn.

It is hard to make out a case for monetary deflation as *the cause* of the *downturn*. Loans actually continued to expand slightly for several months past the middle of 1920—presumably because of loans to firms in distress. High interest rates and the associated decline in bond prices presumably reduced the availability of both bonds and unused lines of credit as money substitutes, and thus tended to increase the demand for cash assets. But the downturn in business happened too soon to be the result of wholesale refusal of new loans and calling of old ones. On the other hand, once the credit contraction was started, it was fairly sharp. Loans of member banks fell continuously from a high of $19.9 billion in November 1920 to a low of $17.1 billion in March 1922 —a drop of about 15 per cent. The public's stock of cash assets apparently dropped about 5 per cent—almost entirely between November 1920 and June 1921.[3] This deflation doubtless contributed to the speed and depth of the *downswing*.

The timing of the downturn is a fascinating study. The National Bureau of Economic Research has set its "reference date" for the downturn just at the beginning of 1920. By hindsight, one can see signs of the breakup of the boom even before the start of the year. Residential building contracts showed a clear down-

[3] After this date, the effects of gold inflow roughly offset those of loan contraction.

turn in the middle of 1919, and other building contracts at the turn of the year. Stock exchange prices (of stocks as well as bonds) began to subside late in 1919. In production, non-durable manufactures reached their high point at the start of 1920, sagged off very slightly during the spring, and began to fall rapidly in June. Durable manufactures, however, were almost as active in the third (June–September) quarter of 1920 as in the first quarter, and a slump in them was not clearly visible until late autumn. Department store sales reached a peak in May 1920, and held near peak levels through the summer.

As the Federal Reserve said in its *Annual Report* for 1920,[4] "It was not until the spring of 1920 that it became generally recognized that reaction had set in, and that the country was passing through the most acute stage of transition from wartime delirium to the more normal conditions of peace." What put the seal on public recognition of the slump was the clear-cut break in prices.[5] Wholesale prices of various groups of commodities reached their peaks in April or May of 1920, and broke decisively. Retail prices turned down sharply in June. This meant a clean reversal of the speculative inventory situation. All efforts to build up inventories stopped; instead, business was trying to cut down inventories. At the same time, the dollar value of our exports was sharply cut (chiefly by price declines).[6] Thus, the inventory and foreign-trade positions shifted suddenly from forces sustaining ac-

[4] Page 1. This report went to press in February 1921.

[5] A comment of the Federal Reserve Board on prices in the report just cited (page 8) makes fascinating reading in the aftermath of World War II: "The equilibrium of prices could have been maintained only through an increased or at least sustained buying power, as well as disposition to buy on the part of the public, which was not existent. Consequently, it became evident after the first quarter of the year that the buying or consumptive power was not sufficient in volume to absorb the greater quantities of goods which were being steadily produced and offered to the public. The practical question accordingly arose whether reductions in prices would not be necessary in order to move the current output of manufactured goods. In some lines an effort was made to solve the problem through a voluntary restriction of production, but it soon became evident that such measures were inadequate, and accordingly substantial reductions in prices of some articles which had reached a high level were announced by producers."

[6] The account of merchandise exports and imports in 1920–1921 ran as shown at the bottom of the next page (in billions of current dollars).

The sharp fall in the export balance in the summer of 1920 was followed by a collapse of imports which restored a large export surplus for a few months; but by this time the downswing had gathered momentum (otherwise, imports could not have fallen so sharply).

tivity to forces pulling it down; and the gradual retreat of production turned into a rout.

The downswing carried output of non-durable manufactures down by December 1920 to two-thirds the peak level of early 1920. Non-durable manufacture began to improve early in 1921; but durable manufactures kept on declining until, in the summer of 1921, they fell below half the highest levels reached in 1920. Wholesale prices fell to a 1921 trough not much over half the 1920 peak level (although a third above prewar prices). Consumers' prices fell to a 1922 trough about one-fifth below the 1920 peak (although more than 50 per cent above prewar).

Recovery to Full Employment, 1921–1923. The National Bureau "reference date" for the beginning of the upswing after the slump comes in the late summer of 1921. But, as with the preceding downswing, there was a wide scatter in the dates at which the major elements of activity began to move. Roughly, the sequence in physical activity was the same as in the downswing. Construction paced the rise. Residential construction came first, improving from the first month of 1921. Other construction began to gain two months later. Non-durable manufactures began to rise about the same time as construction. Durable manufactures did not turn up until late in the summer—about the time of the "reference date." Mining, which had been last to fall, holding up until the end of 1920, was also last to recover. What may have been the start of an upswing at the very end of 1921 was interrupted by the coal strike of 1922; not until late in 1922 were there strong gains in mineral output.

The strain on the banks (and, through the banks, upon business) eased steadily in 1921–1922. Gold began to come in from abroad late in 1920, and during 1921 there was a rise of more than $700 million in the gold stock. At the same time, money in circulation dropped—by over $900 million during 1921. Chiefly

Month	*Jan.*	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*
Exports	.7	.6	.8	.7	.8	.6	.6	.6
Imports	.4	.4	.5	.5	.4	.6	.5	.5
Excess exports	.2	.2	.3	.2	.3	.1	.1	.1
Month	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Apr.*
Exports	.6	.8	.7	.7	.7	.5	.4	.3
Imports	.5	.4	.3	.3	.2	.2	.3	.2
Excess exports	.2	.4	.4	.4	.4	.4	.2	.1

with the reserve funds from these two sources, member banks were able to pay off most of their rediscounts. By the end of 1921, rediscounts were down to $1.14 billion (leaving member banks with $0.61 billion of owned reserves out of their $1.75 billion of reserve balances). By the middle of 1922, rediscounts were down to $0.46 billion, reserve balances were up to $1.82 billion, and owned reserves stood at $1.36 billion. In the spring of 1921, furthermore, the Federal Reserve Banks began lowering rediscount rates; their rates were at 4 per cent and 4½ per cent by the summer of 1922. Acceptance rates also came down. In response, open-market money rates in New York began to drop gradually early in 1921; later in the year, this drop grew faster and was paralleled by a drop in rates charged on customers' loans. Bond yields showed similar changes. Interest rates in 1922 were well below 1919, and, in many sectors, below prewar prosperity levels. The shrinkage of bank loans continued until early 1922; but after the middle of 1921, pressure on customers to repay was apparently not very heavy.

The upturn in physical volume took place before prices ended their decline. Of all the price series of importance, only one was rising before production started up—the rent series, which had the unique record of rising throughout the 1920–1921 decline of business.[7] Farm prices began to rise in the summer of 1921—just about at the "reference date" of the upturn. But wholesale prices of industrial commodities did not begin a sustained rise until March 1922; while consumers' prices kept on declining until the summer of 1922—a full year after the "reference date."

Once the upswing in output was under way, it took hold vigorously. From two-thirds of potential in mid-1921, industrial production came back to about 95 per cent of potential in 15 months—a gain of nearly 2 per cent per month. Practically all lines of activity were close to full-employment levels by the end of 1922, despite the setback of the coal strike. There was also a fairly sharp upswing of commodity prices (bringing wholesale prices up about 10 per cent and retail prices about 5 per cent from 1922 lows to 1923 highs); and the stock market rose (from its low point in August 1921 to the March 1923 peak) by a good 60 per cent. At

[7] Rents had risen much less than most prices during the war—largely owing to rent controls of state governments which were relaxed in 1920–1921.

the time, these price developments caused some worry; in perspective, they look like healthy correctives to part of the price distortions of the 1920–1921 recession.

Several favorable factors seem to have helped this recovery. Most important was the strong demand for housing and other buildings—evidenced by the buoyancy of rents. Although construction had been high before the war, it had fallen behind in 1917–1918, and a backlog of demand had piled up. Another powerful factor was the automobile, which had been thoroughly "sold" to the American public by this time, but had had its production checked by the war. There was also a backlog of demand for producers' durable equipment—machinery, trucks, and so forth.

At the time, a great deal of stress was placed upon "confidence." Whatever Europeans thought, most Americans had a strong conviction of victory in World War I (except that we then called it *the* World War), and we felt that our way of life had proved itself and was gaining well-deserved imitators. The success of the Federal Reserve in steering us through the 1920 crash without "suspension of cash payments" and wholesale bankruptcies gave ground for belief in the soundness of our monetary and business setup; business and the "man in the street" did not imbibe any very deep doubts about our system from the 1920–1921 experience. The election of November 1920 was a triumph of political conservatism—doubtless helped by the fact that the conservatives were in opposition rather than in office when prices fell and unemployment climbed. The new administration's slogan of "back to normalcy" suited the times. There is no telling how heavily we should weight these factors in a balanced explanation of the upswing. But, to put it mildly, there were no barriers on the side of "confidence" which would keep other favorable factors from working. And in view of the extent to which the profitability of construction depends on returns in the distant future, "confidence" must be regarded as part of the basis for the rise in construction which paced the recovery.

The "New Era": 1923–1929. With 1923, the country entered on a stretch of fairly continuous high employment—often called at the time the "new era" or (with pleasing alliteration) a "plateau of permanent prosperity." Analysts of "business" cycles

recognize in this period three distinct "peaks" (in 1923, 1926, and 1929) and two "troughs" (in 1924 and 1927). But in the seven-year stretch, industrial production was above 90 per cent of potential in 62 of the 84 months, and never got below 80 per cent. The 1924 and 1927 recessions were too brief and too shallow to be spoken of in the same breath with the 1920–1922 depression—let alone that of the 1930's.

Developments in the United States from the Armistice until 1923 had a good deal in common with developments in Europe. The post-Armistice boom of 1919–1920 was an international affair, and so was the 1920–1922 depression, although the time-table differed somewhat from country to country. On the next upswing, a number of European countries became involved in inflation. The price flurry of 1923 suggested that we might be headed the same way; [8] and, to be on the safe side, the Federal Reserve put on the brakes by tightening up on credit. Acceptance buying-rates were raised by stages, beginning in September 1922. Early in 1923, the three Federal Reserve Banks (including New York) which had a 4 per cent rediscount rate were leveled up to the 4½ per cent rate of the other nine. Federal Reserve holdings of government securities were reduced, and in October 1923 member bank borrowings were up to $0.87 billion and owned reserves down to $0.97 billion. Interest rates charged to borrowers by banks stiffened in response; and so did bond yields. The pressure was much less severe than that of 1920–1921, and did not last so long; but it continued until (in the middle of 1924) a decline of both prices and business activity was clearly visible.

The 1923 downturn (generally attributed to Federal Reserve pressure) was well-marked in the production of durable manufactures, non-durable manufactures, and minerals. But it did not

[8] It is a little hard, by hindsight, to share these fears of 1923. The Continental inflations were in countries where governments were spending heavily and could not or would not raise enough revenue to cover the bulk of expenditures—and where "confidence" was badly shaken. In Great Britain, which had more or less paralleled our 1919–1922 experience, the recovery did not come back to a full-employment level, and signs of "chronic unemployment" were visible in 1923. In view of the "hand-to-mouth buying" practices adopted by much of American business after 1920, we were not in great danger of a top-heavy inventory boom. Still, the 1922–1923 price flurry was quite rapid, and included sharp increases in prices which one might expect to be "rigid." Thus, there was matter of concern.

show up in construction; on the contrary, construction reached new high levels in the first half of 1924. Many people in the country scarcely noticed the recession. Despite price declines, it barely appears in the curve of dollar sales at department stores. Recovery took hold quickly and strongly; industrial output remained below 90 per cent of potential only nine months (April–November, 1924). The 1924 recession, in the end, was not much more than a ripple on the economic stream.

The years 1925 and 1926 were years of solid prosperity. Industrial production grew in line with the normal growth of potential, and held steadily above 90 per cent of potential. Farm prices rose rather sharply in 1925, but other prices were reasonably steady. Rents, however, ended their long rise, and crested over about the beginning of 1925.

With the edge taken off the housing shortage, 1925 proved to be the peak year for residential construction, and there was a slight fall in this part of construction by 1926. But total construction reached its postwar peak in 1926, thanks to rises in most other forms of construction. Construction, durable manufactures, and minerals all flagged somewhat in 1927, durables dropping briefly below 80 per cent of potential in the autumn of 1927.[9] Industrial production as a whole (including both branches of manufacturing plus minerals) was below 90 per cent of potential for less than a year, and by a narrow margin. By the latter part of 1928, manufacturing both of durables and of non-durables was back close to full-employment levels, which held through most of 1929. Construction, however, fell off from 1927 to 1928 and again (more sharply) from 1928 to 1929; and minerals in 1928–1929 did not quite reach potential levels.

Toward the end of the 1920's, policy attention was focused on the stock market. From a low point of about 70 (1935–1939 = 100) late in 1923, stock prices climbed almost uninterruptedly at a rate of over 1 per cent a month to a peak of nearly 250 late in 1929. On the whole, the Federal Reserve had maintained an easy-money policy from the middle of 1924 to the middle of 1928. Although discount rates sometimes ran as high as 4½ per cent,

[9] This slump was widely attributed to the shutdown of the Ford plant at the time when Model T was dropped and Model A introduced; but the effect seems too large relative to the alleged cause.

the member banks, broadly speaking, were not heavily in debt; setbacks in the growth of bank loans and of the public's cash assets were rare, and not severe. This easy-money policy was especially marked in the last half of 1927; many commentators said that this policy was designed chiefly to help European countries which were trying to get back on the gold standard. The 1927 episode is widely blamed (without adequate ground, it seems to me) as the decisive factor in building the stock-market boom to a top-heavy stage. In any event, the stock market did reach such a stage, and by 1929 was visibly upheld only by the "find-a-worse-sucker" psychology, and was ripe for a crash. Meanwhile, the Federal Reserve had taken alarm,[10] and, beginning early in 1928, had raised acceptance buying-rates and rediscount rates to the highest levels since 1921. Rediscount was 6 per cent at the Federal Reserve Bank of New York, 5 per cent at other Federal Reserve Banks. Government securities and acceptances at Reserve Banks were worked down from about $0.9 billion when the drive started early in 1928 to about $0.2 billion in the summer of 1929. Member banks were thus thrown in debt, and in July 1929 they had rediscounts of $1.1 billion—putting their owned reserves not much above 50 per cent of their $2.3 billion of reserve balances. Interest rates charged by banks (especially on stock exchange call loans, which the Federal Reserve was trying to pinch) were higher than they had been for years.

The 1929 crash will be examined presently. Meanwhile, what was the basis of the "new era" prosperity? The answer is much the same combination of factors which we saw launching that prosperity in the revival of 1922–1923—(1) the backlog of construction demand; (2) the automobile (with associated highway construction, and so forth); (3) "confidence." Looking at the period as a whole, we should add: (4) an export balance in foreign trade, financed by American buying of foreign securities to the tune of about $1 billion annually, and, at periods when this buying flagged, financed by gold imports; (5) "consumer durables," financed (like automobiles) in good part by "consumer credit." In Keynesian terms, these factors generated a large volume of investment.

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[10] The White House and Treasury, however, continued to put out cheerful pronouncements—often timed to offset pessimistic Federal Reserve utterances.

Looking back, it is hard to see how we Americans were so complacent about the "permanence" of our "plateau." It was easy to see that we could work through the construction backlog; and we had ample warning in the successive downturns of various major components of construction in 1925, 1926, and 1927—and especially in the falling off of total construction late in 1928. The terms on which we were making foreign loans implied that foreign borrowing-power might run out. An important element of this borrowing-power was the German municipalities, whose prewar debts had been wiped out by the inflation of the early 1920's and which were diligently borrowing up to their debt limits; and Latin American credit was also bound to be limited. "Saturation" of the market for automobiles was a recurrent fear throughout the 1920's. The risk that several of these factors might let us down at once surely should have been visible; and early in 1929 we should have been able to see that this was happening. By hindsight, we have serious complaints against the policy of the 1920's—not that it failed to prevent the unavoidable weakening of these props of the "new era," but that it had nothing in reserve with which to support prosperity when they weakened.

Crisis and Recession: 1929–1931. The National Bureau's "reference date" for the 1929 downturn comes late in the spring. Non-durable manufactures started to decline at this time, and durable manufactures at midyear. Construction, as noted above, was already on the downgrade in 1928, and, on the whole, declining in 1929. Commodity prices (except for food, which increased for several months in the middle of the year) were declining mildly throughout 1929.

The stock exchange crash of September, which was the great dramatic event of 1929, thus came when business volume and commodity prices were already on the downgrade. By November, the average level of stock prices was down to 160 (1935–1939 = 100) as compared with an average of 238 for September. Presumably because of the psychological change brought about by the crash, the drop in output speeded up in the autumn.

The year 1930 was one of worsening depression. At the start of the year, industrial output was already below 90 per cent of potential; by the year's end, it was only about 65 per cent. Stock exchange prices rebounded early in the year, but turned down

again in April. All classes of commodity prices fell rapidly. Unemployment became a matter of grave public concern. (This was the period when the unemployed were encouraged to sell apples on the streets—an episode often referred to recently.) Discontent over the downswing had much to do with the Democratic victory in the 1930 congressional elections—which left us with a Republican president and Senate but a Democratic House of Representatives.

Early in 1931, things looked better. For several months production of durable and non-durable manufactures rose slightly, and so did the output of minerals. The decline of farm prices stopped briefly. Many analysts felt that the country was ripe for recovery. This was the stage at which President Hoover made his much-ridiculed but rather reasonable guess that "prosperity is just around the corner." These hopes of recovery were soon dashed. Presently I shall go on to discuss the renewal of the downswing; but first I must review the economic policy of the period.

In 1928–1929, as mentioned above, the Federal Reserve had a "tight money" policy, with interest rates high and commercial banks heavily in debt. While through most of the "new era" there was a fairly smooth growth in bank assets and in the public's cash assets, this growth was stopped in 1929. The public's cash holdings fell during the first half of the year. Business loans grew a little (funds being supplied by reduction of investments and some new bank capital). But, on the whole, there was a monetary stringency.

Late in 1929, after the market crash, the Federal Reserve turned to an "easy money" policy. Rediscount rates were lowered several times; the New York Federal Reserve Bank, for instance cut its rate from 6 per cent to 5 per cent on November 1, 1929, to 4½ per cent on November 15, to 4 per cent on February 7, 1930, to 3½ per cent on March 14, to 3 per cent on May 2, to 2½ per cent on June 20, to 2 per cent on December 24, and finally to 1½ per cent on May 8, 1931. The Federal Reserve also expanded its holdings of government securities and acceptances, and lowered member bank borrowings to about $200 million in the spring of 1930. Despite this easing of their position, commercial banks

continued to contract credit. Their rates charged to customers fell much less than rediscount rates—the published average dropping from just over 6 per cent late in 1929 to about 4¼ per cent early in 1931. (Furthermore, this drop apparently registered largely the refusal of credit to high-rate borrowers, rather than the reduction of rates charged to particular customers.) At all commercial banks combined, loans dropped from $36.0 billion at the end of 1929 to $32.0 billion at the end of 1930 and $29.2 billion in June 1931. The public's cash assets dropped from $55.4 billion at the end of 1928 to $54.5 billion at the end of 1929, to $53.2 billion at the end of 1930, to $52.5 billion in the middle of 1931.[11]

Aside from money and banking, the government had a policy of maintaining "confidence." The election of a Republican president and Congress in 1928, assuring maintenance of the conservative policies in force since 1920, should have been very good for confidence, according to most views. After the stock market crash, as well as before, there were frequent official testimonials to the "soundness" of the American economic system. The President urged businessmen not to cut wages, and to hold up the volume of construction.[12] A special effort was made to stabilize farm prices. A Federal Farm Board, set up in 1929, was armed with a "revolving fund" of $0.5 billion, to finance agricultural co-operatives and specially created "stabilization co-operatives" in holding farm products off the market. The slump was so severe that prices went down despite this withdrawal of goods from the market, and the goods were disposed of later on, largely by gifts of wheat and cotton to the Red Cross for relief in China. The Treasury's policy was conservative. As throughout the "new era," there was an excess of Treasury cash income over cash outgo through the middle of 1930. Thereafter, an increase in outlays

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11 The fall in the public's cash assets was, thus, only $2.0 billion from the end of 1929 to the middle of 1931, against a $6.8 billion fall in commercial bank loans. The discrepancy is accounted for by: (1) a growth of $2.2 billion in commercial bank investments; (2) a growth of $1.0 billion in mutual savings bank earning assets; (3) heavy writeoffs of loans deemed uncollectible—especially at closed banks; and (4) a shrinkage of $0.3 billion in bank capital funds.

12 It is noteworthy that several branches of public utility construction (particularly railway activities) reached their interwar peak in 1930.

and the effect of depression in reducing revenues combined to produce a deficit.[13]

Prolonged Panic—1931–1933. The signs of recovery which appeared early in 1931 soon faded out. Possibly the United States was ripe for recovery (the matter is debatable). But, in the rest of the world, things were going from bad to worse. Great Britain and Germany (as well as several other countries) had suffered during the 1920's from chronic unemployment. But having a chronic depression did not prevent a further decline. "Confidence" had never fully recovered after World War I. The loss of markets in this country as depression deepened, accentuated by our sharp tariff increases in 1930 and the stoppage of our foreign lending, both increased unemployment and led to a sharp financial crisis.

In the late spring of 1931, this financial crisis began to take shape in Austria. The Kredit-Anstalt (the chief bank of Vienna) fell into difficulties. This occurrence led to fears about German banks which had loans in Austria. In the summer of 1931, the "Stand-Still Agreement" stopped the transfer of funds out of Germany.[14] The crisis now spread to London. British banks had lent money to Germans, while non-Britishers had large funds on deposit in London. A "run" on London resulted, as these foreigners (including Americans) tried to get their funds home before the British ceased to pay at par.

Just at this time (and probably in good part as a reflection of the European crisis), American finance took a turn for the worse. Although we had a serious depression at this time, "confidence"

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[13] Quarterly figures are given as follows (on a cash basis) by H. H. Villard in *Deficit Spending and the National Income* (New York: Farrar & Rinehart, 1941), p. 285:

Date	*Expenditure*	*Receipts*	*Difference*
1929:			
July–Sept.	$782	980	–199
Oct.–Dec.	802	939	–137
1930:			
Jan.–Mar.	820	924	–104
Apr.–June	893	989	–96
July–Sept.	1056	843	213
Oct.–Dec.	1068	831	237
1931:			
Jan.–Mar.	1048	705	343
Apr.–June	1162	652	510

[14] This agreement was the first of the large-scale "blocking" operations, referred to in the Introduction (page 8), which restricted certain funds to stated uses.

was not seriously shaken. The surest sign of panic—a conversion of bank deposits into paper money for safety—had barely appeared. Down to the very end of 1930, coin and paper money in circulation were lower each month than in the same month a year before. A wave of bank failures just at the end of 1930 scared the public only slightly, and in the first months of 1931 the circulation was $4.3 to $4.4 billion—up about $0.1 billion from 1930. Confidence was also shown by the fact that prices of municipal and corporation bonds in May 1931 were at record high levels. But in June 1931 we had another serious wave of bank failures; money circulation started to climb rapidly; and bond prices began to sag.

Britain "went off the gold standard" in September 1931, and allowed the dollar price of the pound sterling to drop from about $4.85 to below $4.00. The next financial center to come under pressure was New York. In October, 1931, large sums were transferred abroad (especially by foreign central banks), and our gold reserves fell by over $400 million. The remaining $4.0 billion was only $0.3 billion short of the highest pre-1931 figure on record. But our bankers and financiers were badly shaken.

At this point the Federal Reserve policy of easy money was reversed. The New York Federal Reserve Bank jumped its rediscount rate from 1½ per cent to 2½ per cent on October 9, and to 3½ per cent on October 16. Acceptance rates also were raised. Open-market operations did not offset the effects of gold losses and of the public's withdrawal of coin and paper money from the banks; and rediscounts were allowed to shoot up from about $250 million to $1025 million between early September and the end of 1931, bringing the owned reserves of member banks down from $2.1 to $1.3 billion. Commercial bank credit was tightened. In the last three months of 1931 and the first six of 1932, bank loans were shrinking by more than $0.5 billion per month. From the middle of 1931 to the middle of 1932, the public's cash assets fell from $52.4 to $45.0 billion. Prices of bonds sagged: corporate issues dropped from an average of 95.6 per cent of par in May 1931 and 94.5 per cent in September to 88 per cent in December 1931 and 82.7 per cent in June 1932. Corporate stocks fell from 128 (1935–1939 = 100) in March 1931 to 86 in September, to 61 in December 1931, to 36 in June 1932. Loans secured by stocks "froze" in bankers' hands, as did business

loans.[15] Hundreds of banks closed every month in late 1931, with large masses of deposits.[16]

This stretch of history is unedifying. The candid way to describe it is to say that our financial leaders (including the Federal Reserve authorities) yielded to panic. Official explanations do not make the matter look any better. In their 1931 report, the Federal Reserve Board remarked drily that "after the middle of September, in view of the outflow of gold from the country and of currency into hoarding, the Federal Reserve Banks increased their rates on discounts and acceptances." [17] The Treasury called for drastic cuts in government spending, and for tax increases to yield $1.1 billion per year. Congress granted these requests—putting $650 million of the added revenue in the form of excise and stamp taxes on commodities and services.[18]

While contributing to deflation through central bank policy and taxation, the government early in 1932 did begin to try to combat the depression—or at least to mitigate its effects. Congress passed an act to establish the Reconstruction Finance Corporation, and the Glass-Steagall Act, designed to free the hands of the Federal Reserve.

The RFC and the shift in banking policy were an effort to stem the panic on what commentators at the time called the "trickle-down" system. The RFC was empowered to lend to distressed banks and to railways, in order to keep trouble from spreading from these weak spots. The release of the Federal Reserve from

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[15] Metaphors are tricky. In physics, pressure liquefies solids; in banking, pressure freezes what is liquid.

[16] Perhaps $1 billion of the $7½ billion of shrinkage in cash assets of the non-bank public for the 12 months ending June 1932 was due to tying up of deposits in suspended banks. About $1.6 billion was on deposit in banks which suspended; but part of this amount was released by the reopening of the banks or the sale of their assets to surviving banks.

[17] *Annual Report,* 1931, p. 6. This report was drafted with the aid of a good deal of hindsight, bearing the date of June 6, 1932. Comments made in the 1932 *Annual Report* (pp. 16–19) imply regret at having kept the member banks short of owned reserves, but offer retrospective excuses in terms of restrictive rules applying to the Federal Reserve Banks themselves. For an analysis of this period which produces strong evidence that the Federal Reserve authorities were disastrously slow in sizing up the damage their deflationary policy was doing, see H. H. Villard, "The Federal Reserve System's Monetary Policy in 1931 and 1932," *Journal of Political Economy,* December, 1937.

[18] The argument for tax increases was the preservation of "unimpaired credit of the Federal Government." See Secretary of the Treasury, *Annual Report,* 1932, p. 256.

artificial "collateral" rules which tied up gold [19] was intended to ease the general position of bankers. In both cases, the immediate beneficiaries were, on the whole, in the "big business" class; benefits to ordinary mortals were expected to arise indirectly through the unfreezing of credit. In the summer of 1932, however, $500 million of federal funds was made available for unemployment relief—distributed by RFC through loans (later canceled) to the states.

The Federal Reserve Bank of New York cut its rediscount rate from 3½ to 3 per cent the very day (February 26) that the Glass-Steagall Act changing the gold rules was accepted by Congress.[20] A further cut to 2½ per cent was made in June, when the Chicago Bank also cut to 2½ per cent. All the other Federal Reserve Banks, however, held their rates at 3½ per cent throughout 1932 and early 1933.[21] Acceptance rates were cut in several stages, reaching 1 per cent (for 60- to 90-day bills) in June. During March, the Federal Reserve began gradually to build up its holdings of government securities; but not until April did the increase grow rapid. The RFC, meanwhile, had started operations at the end of January, and by June had loaned $420 million to banks and $139 million to railways. Bank failures slowed down in the spring, coin and paper money returned from hoarding to some extent, and by May bank rediscounts were down below $500 million. Interest rates dropped somewhat; bond prices recov-

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[19] See above, pp. 112–113. The Federal Reserve was required by law to post "collateral" for Federal Reserve Notes—up to 60 per cent in acceptances or rediscounts, not less than 40 per cent in gold, but using enough gold to make up any deficiency of "paper." With the huge rise of note circulation in 1931–1932, this requirement tied up most of the Reserve's gold, even though rediscounts were so heavy that commercial banks were deflating credit at a great rate. Open-market purchases of government bonds to give the banks more owned reserves would have reduced rediscounts and thus have required substitution of gold for rediscounts as collateral. Fears of this strictly artificial gold stringency doubtless explained the slowness of the Federal Reserve authorities in starting such open-market purchases. On the other hand, as Villard points out in the article just cited, this explanation offers no justification whatever for failure to increase Federal Reserve holdings of acceptances, or for the two-month lag in taking advantage of the new law to start open-market purchases.

[20] The official enactment date is February 27—the date of President Hoover's signature.

[21] Two of the Reserve Banks (Richmond and Dallas) had raised to 4 per cent instead of 3½ per cent in October 1931, and came back into line at 3½ per cent in January 1932.

ered a little. But stock prices kept on sagging, and the liquidation of bank loans was not stopped.

In the middle of 1932, business volume began to revive after its long decline. Mining began to expand in June, non-durable manufacturing in July, and durable manufacturing in August. At the middle of the year, wage-and-salary payments began to expand (despite continued cutting of wage rates); and department store sales improved a little. A spurt of bank failures in June and early July was stopped—although at the cost of seriously crippling the rescue operations of RFC.[22] Commodity prices recovered slightly. Stock prices rose from a June average of 36 (1935–1939 = 100) to 62 in September.

Before long, however, a fresh decline set in. The contraction of bank loans had never stopped. Commodity prices were on the downgrade again in September, non-durable manufacturing turned down in November, and durable manufacturing in December. The outcome of the election was a shock to conservatives, and the renewed "loss of confidence" may explain the fresh wave of hoarding and bank failures which set in in December. Certainly the political hiatus between the election of President Roosevelt and a new Congress in November and their taking office in March explains the helplessness of government to stem the panic. In the early weeks of 1933, coin and paper money in circulation rose from $5.7 to $7.5 billion and rediscounts at the Federal Reserve Banks went up from $0.3 to $1.4 billion. Persistent runs threatened to carry down sound banks as well as weak ones; and in several states governors took the responsibility of declaring "bank holidays." Five states had all their banks closed at the end of February; 17 other states followed in the first three days of March; and one of the first acts of the new administration was to make the bank holiday universal.

At the moment when the new President and Congress took office, the country was almost paralyzed. Industrial production was

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[22] The most conspicuous bank in trouble at this time was the Central Republic Bank of Chicago, of which the head of RFC (General Dawes) was an officer on leave. Given the responsibilities and policies of RFC, I have never been able to see that RFC had any alternative but to grant the Central Republic the loan which averted its failure. But there was a great outcry that General Dawes in his official capacity was rescuing himself in his personal capacity; and thereafter RFC's lending policy was more timid.

down to about 40 per cent of potential (having been continuously below 50 per cent for a solid year). Unemployment was upward of 15 million, and many of those employed were on short hours. Construction was almost at a standstill. Stock prices (although above the 1932 low) were about one-fifth of 1929 levels. Farm prices were below 40 per cent of 1929. Commodity prices other than those of farm products and foods were less than 80 per cent of 1929. Factory wages per hour were also below 80 per cent of 1929. Personal income was flowing at a rate about 60 per cent of 1929—or in purchasing power (correcting by the cost-of-living index), about 75 per cent.

Partial Recovery under the "First New Deal," 1933–1935. Beginning in March 1933 there was a rapid upturn. Most of the banks were reopened—with a tacit guarantee of their safety by the government, backed up presently by the establishment of the Federal Deposit Insurance Corporation. Bank loans and investments expanded, creating fresh deposits. The home loan and farm loan agencies described in Chapter II were set to work, and RFC activity was intensified.

The new administration and Congress set about a recovery program (the "first New Deal") which centered about the National Recovery Administration and the Agricultural Adjustment Administration. NRA operated chiefly through "codes" in various industries which aimed to spread employment through reducing hours of work, to stop "chiselers" from price-cutting forms of competition, and to raise prices and wages. These codes were reached by agreements among firms in the various industries, subject to approval by NRA; on inspection, many of them proved to be designed chiefly to benefit profits and to tighten up price-raising and price-maintaining arrangements.[23] Pending the adoption of industrial codes, business was made subject to a "blanket code" which raised wages, shortened hours, and checked "chiseling" on prices. In the farm field, the "triple A" also aimed to raise prices, relying largely on the restriction of acreage for major crops.

[23] It is no mere coincidence that this experiment with "self-government in industry" as the core of economic policy came at the time when Fascist Italy and Nazi Germany were moving toward economic control through a "corporative state"—that is, a structure of comprehensive business cartels, subject to government supervision and regulation.

Manufacturing output jumped in the spring of 1933, and until 1935 seesawed back and forth between the mid-1933 level and a few points lower. (Employment held its gains, however, thanks to work-spreading.) Prices jumped and then continued to rise more smoothly. Cash expansion was about in line with the price rise. This brisk rise in output, followed by a setback, traces to the inventory boom which naturally came from NRA. Merchants had cut down their inventories during the slump, and needed more stock to handle even a partial revival of sales. In addition, NRA guaranteed against a further cut in prices—and guaranteed also a sharp rise of money costs, effective in the middle of 1933. Thus, for a few months there were very strong incentives to expand inventories. The resulting spurt in output was bound to be reversed.[24]

The new administration came in pledged to "economy." Government salaries were cut, and, despite generous grants of funds to state and local governments to finance relief, the "net income-increasing expenditures" of all government bodies combined were lower through most of 1933 than they had been in 1932.[25] The government had a public works program; but it was late in 1934 before these public works began to operate on a large enough scale to offset reductions of state and local construction. For a few months early in 1934, there was an emergency work-relief program (the short-lived "CWA").

In the international field, the administration refused at the London Conference in the summer of 1933 to commit this country to a definite program of international co-operation; late in 1933, we "devalued the dollar" by raising our official price of gold from $20.67 to $35.00 per ounce.

In terms of policy toward fluctuations, the "first New Deal" was a program of price-boosting and monetary expansion. This combination, in the end, did not work. Activity came back to a less acute depression level; and, thanks to fuller employment at shorter hours and to more generous relief, actual suffering from

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[24] Despite this spurt, by the way, the net change in physical inventory was downward for 1933 as a whole.

[25] See H. H. Villard, *Deficit Spending and the National Income* (New York: Farrar and Rinehart, 1941), p. 323. "Net income-increasing expenditures" means roughly the excess of cash outgo over cash income. Villard's monthly series (1929–1939) covers state and local governments as well as the federal government.

the depression was much mitigated. But the level of activity was not high enough to revive private investment: almost every firm still had excess capacity. From the monetary standpoint, the cost-raising campaign largely nullified monetary expansion. The gain in cash balances was roughly offset by the increased needs for cash when business was being done at higher prices.

Upswing, 1935–1937. In 1935, conditions changed and a definite upswing set in. On the fiscal side, the rise of public works expenditures, new work relief programs, and so forth, was roughly offset by the increase of tax yields at higher income levels, and the "income-increasing expenditure" on which some people relied for recovery was lower through most of 1935 than in 1934. The system of "codes" collapsed, to everybody's relief, through an adverse court decision. While monetary expansion continued, the price advance was checked. Gross private business investment doubled—running above $6 billion in 1935, as against less than $3 billion in 1934.

The upswing continued into 1936. The government continued to run a heavy deficit, and the cash supply kept on advancing. In the summer of 1936, well over a billion dollars of cash bonus was distributed to veterans. While output was well below capacity, there began to be a feel of prosperity for at least part of the people. There was a great deal more building, and all the investment accounts showed a gain.

Early in 1937, for the first time since 1929, it was possible to worry about inflation. Looking back from the postwar period, 1936 and 1937 appear as seriously depressed. But, at the time, people had grown acclimated to depression. Although unemployment continued heavy, businessmen, politicians, and economists were able to persuade themselves that reasonable prosperity had been regained. Industrial production was back to 1929 levels. Even stock prices were not too discouraging. By late 1936, they were over 80 per cent of the 1928 average—about as high relative to 1928 (if not to boom levels of 1929) as commodity prices were—and still rising. Meanwhile, commodity prices had started to rise fairly rapidly, including commodities which normally have "sticky prices." Behind this commodity rise was a sharp rise of wages, which, in turn, represented the organizing drives of the great new industrial unions—notably the steel workers. Threatening

users of commodities both with interruptions of supply through strikes and with higher labor costs, this organizing drive helped to motivate a very rapid increase of business inventories in 1936–1937.

This turn of events produced a turn in policy. Ever since 1933, the federal government had been trying hard to stimulate business (even though its price-raising moves may have absorbed expansive pressure instead of letting it reach through to help expand physical volume). In 1936–1937, this expansive policy was tapered off and in some fields reversed. Relief expenditures were cut down, and pressure for public works relaxed.[26] Reserve requirements for commercial banks were raised, and excess reserves were cut down from a peak of $3 billion at the beginning of 1936 to about $0.8 billion in the middle of 1937. Banks reduced their holdings of securities, and the growth of loans was slowed down in 1937 and reversed at mid-year. For the first time since 1933, the public's cash assets were reduced slightly.

The 1937–1938 Recession. The object of policy in 1937 was to taper off the expansion. But what happened was a sharp recession. This recession was dramatized by a stock-market collapse. From their peak in March, stock prices sagged a bit, recovered nearly to the previous peak in the summer, and then in August began an uninterrupted slide down to about 57 per cent of the March peak at the end of the year. In March 1938 there was another drop, carrying stock prices down to 49 per cent of the March 1937 peak.

Like 1929, 1937 experienced a sagging off of physical volume

[26] The actual history of outlays for public construction (according to *Survey of Current Business,* National Income Supplement, July 1947, p. 23) was as follows (in millions of current dollars):

Year	*Federal*	*State and Local*	*Total*
1932	333	1,445	1,778
1933	334	884	1,218
1934	404	1,131	1,535
1935	467	974	1,441
1936	502	1,592	2,094
1937	529	1,410	1,939
1938	476	1,488	1,964
1939	537	1,809	2,346

These figures testify to the slow-acting character of public works. The momentum of the pre-1937 expansion carried into 1937, when it was public policy to cut down; efforts at expansion in 1938 bore fruit in 1939.

earlier in the year than the dramatic stock-market break. Department store sales and output of non-durable manufactures reached peaks in May and sagged off during the summer. In September, durable manufactures suddenly dropped, the drop of non-durables grew more rapid, and there was a rapid drop all over the economy in employment and payrolls. Consumers cut down their spending, and food prices fell sharply during the autumn. Department stores and others practically stopped placing new orders for a time, and the business outlook became very dark.

Early in 1938, payrolls were down to two-thirds of summer-1937 levels; output of durable manufactures, to just above half; and output of non-durable manufactures, to about three-fourths. The need for an expansive public policy was as clear as it had been in the depths of the depression.

In April, 1938, the Federal Reserve lowered reserve requirements for member banks enough to add about $1 billion to excess reserves. Meanwhile, gold inflow had added about $0.4 billion. This action stopped the shrinkage of bank loans and investments, and permitted an expansion (with renewed creation of deposits) beginning in the summer of 1938. Work relief was expanded again, from early 1938 on; by the second half of the year, the government's "net income-increasing expenditures" were up to about $300 million monthly.

Business activity responded. Non-durable manufacturing output and department store sales began to show substantial monthly gains, beginning with June 1938, and durable manufactures followed a month or two later. Factory employment, payrolls, and personal income payments, in general, showed a marked upturn in the summer. By the end of 1938, although activity was still well below early-1937 levels, things were definitely on the mend.

Continued Recovery and the War Boom, 1939–1941. By the time that recovery was well under way in 1938, Hitler's diplomatic victory at Munich (September 1938) made a European war overwhelmingly likely. Consequently, the economic recovery of 1939–1941 had an element of war activity from the first.

During 1939, the government continued to push expansion with easy money and a large "net income-increasing expenditure." The expansion of the cash supply went on at about the 1933–1936 rate. By the end of 1939, manufacturing output was back to 1937

peak levels, and, after a brief setback early in 1940, it pushed on until at the end of 1941 it was approaching a full-employment level. Unemployment by that time was down below 4 million.[27]

Through 1940, prices had hardly budged from the levels reached after the 1937 recession. But late in 1940, wage rates began to rise. By the beginning of 1941, food prices were on the upgrade, and by late spring the whole price level was in motion. From February to December 1941, the cost of living rose by just under 1 per cent per month. Underlying this movement was the spending of European governments—reinforced by Lend-Lease, from early 1941—and American rearmament. Gold imports expanded bank reserves; and the combined spending of the governments (plus growth in bank loans) expanded the public's cash, so that there was no cash shortage to damp the expansion or the price inflation.[28]

War Prosperity, 1942–1945: Suppressed Inflation. After the Pearl Harbor attack brought us actively into the war in December 1941, there was another change in policy. The public and the government were concerned about inflation, and price control was introduced to check it. "Selective price control," on a more or less informal basis, had already been at work in 1941—chiefly on metal products. In April 1942, the Office of Price Administration issued "General Max"—an order requiring each seller of goods to "charge no more than the prices which he charged during the base period, March 1–31, 1942." [29] Most foods were exempt from control under a provision in the enabling act which barred food price ceilings that would hold farm prices below 110 per cent of parity.[30] Prices of clothing, rents, and wholesale prices of com-

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[27] Unemployment comparable with 1923 and 1929 would have been about 2 million rather than 4 million. But since war preparations centered on manufacturing, this part of output reached full-employment levels earlier than employment. See page 283.

[28] For the record of monetary expansion during this period, see Tables 9–12 (pp. 66, 67, 110, and 138, above) and the discussion accompanying those tables.

[29] *Federal Reserve Bulletin*, May 1942, p. 446.

[30] "Parity" (a concept developed and applied to farm legislation during the 1930's) means a ratio equal to the average of 1910–1914 between an index number of prices received by farmers and an index number of prices paid by farmers. From values far below parity in the 1930's, the ratio rose until it crossed the parity line in 1941; from 1942 onward through the war and early postwar period, it ranged about from 115 to 120 per cent of parity.

modities other than farm products leveled off at once; but food prices kept on rising into 1943.

More broadly, the leveling off of prices represented a general *stabilization compromise* among the major interest-groups in the economy. The trade unions accepted a no-strike agreement and a "wage freeze" (subject to exceptions), in consideration of a "price freeze" on rents and clothing and on most foods from 1943 onward. Business accepted price control, allocations, and an excess-profits tax with effective rates about 80 per cent, in consideration of the labor concessions. Farm groups (eventually) accepted control of food prices, in consideration of favorable farm prices; where necessary, subsidies on food were used to close the gap. Consumer rationing of food served to secure reasonably fair sharing of supplies, which were ample by prewar standards but too low to match high wartime levels of personal income.

Monetary policy was expansionary on the whole, except for limits on consumer credit (largely ineffective, since the goods normally bought on credit were in short supply). Fiscal policy included unprecedentedly high tax rates—eased for the taxpayer and Treasury both by the collection of taxes on wages and salaries through "withholding at the source of income." Exemptions were pushed down until most income-receivers were taxable. Heavy increases in excise duties were also voted. But these tax increases were far from keeping pace with the mounting war expenditures of the government. Government debt and the public's cash assets kept on climbing.[31]

With the Treasury cash deficit reaching more than $50 billion a year at the peak of the war effort in 1943 and 1944, there was a large "inflationary gap." Incomes earned by producing war goods as well as civilian goods came to a market on which only the civilian goods were available for sale; and taxes did not whittle the income down anywhere near to the amount for which the civilian goods would sell at non-inflationary prices.[32] To balance the account, there had to be an abnormally high proportion of income saved. This saving was achieved partly by positive inducements to save—payroll savings plans for war bond purchase, and "bond drives." In part, it was achieved by the reduction un-

[31] See Tables 9–12, and the accompanying discussion.

[32] Cf. the discussion of the inflation process above, pp. 245–252.

der war conditions of normal sources of "negative savings" (spending of workers temporarily unemployed, college expenses for youths, retirement of the elderly, foreign travel for the prosperous, and long vacations). In good part, it was achieved by the sheer absence of chances to buy the goods that were wanted—because they were rationed, because they were not in the shops, or because shopping was too difficult.[33]

During most of the war, employment was full. In fact, there were several million "abnormal" members of the labor force—chiefly young wives and other young women who were thrown out of their normal place in society while millions of young men were in uniform. Unemployment was kept down to a few hundred thousand. This unexpected windfall of labor power enabled the United States to mobilize armed forces of upward of 12 million, supply them and furnish large supplies for our allies, and also avoid any serious setback in domestic consumption.[34] Total output was beyond any previous estimates of capacity. On the other hand, the "sellers' market" permitted a markdown of quality; goods which ordinarily would have proved unsalable found ready buyers. Accordingly, the measurement of physical output during the war is difficult; and the size of the productive capacity for peacetime purposes which war experience demonstrated is open to argument.[35]

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[33] The fact that saving could be induced in this way reflected the public's general expectation that goods would be available later at the sort of prices they were used to. This expectation played a large part in the success of price control in the face of an "inflationary gap" much larger than economists and OPA officials thought was safe. On this see George Katona, *War Without Inflation* (New York: Columbia University Press, 1942) and *Price Control and Business* (Bloomington, Indiana: Principia Press, 1945).

Perhaps the best brief analysis of the war economy from this standpoint is J. K. Galbraith, "The Disequilibrium System," *American Economic Review,* June 1947, pp. 287–302.

[34] Economists kept predicting that growth of war production and the armed forces would cause a decline in non-durable goods production for civilian use—besides the decline in durables which resulted from putting automobile factories, electrical supply factories, and so forth, into war work. But actually the physical volume of consumption (except for durables) seems to have kept on growing until 1945. This growth helps explain the unexpectedly thorough success of wartime price control. People were called upon to save more while consuming more, too. If they had been called upon to save still more and consume less, their resistance might have broken down the controls.

[35] One cynical economist says that what the war demonstrated was "our capacity to produce unparalleled quantities of junk." Anybody who has watched the disintegration of cardboard toys and wooden bread-boxes which the statistics rated

Demobilization and Postwar Inflation: 1945–1947. During the war, it was expected that the demobilization process would involve serious transitional unemployment. This forecast was based on three arguments: (1) Such a spell of transitional unemployment happened in the winter of 1918–1919, although the shock was less than was expected to be felt after V-J Day. (2) The government early in 1945 was buying nearly half of a $200 billion national product, and was expected to cut its buying down by a good half very quickly after victory; how could business take such a shrinkage of markets in its stride? [36] (3) Millions of men were expected to be discharged from the armed forces within a few months after victory, and more millions to be laid off from war plants—how could they be absorbed into peacetime employment without delay for retooling, and so forth? Anxiety was so great that some government officials were reported to contemplate holding soldiers and sailors in uniform so as to keep from overloading the labor market. It took an official denial from the White House of any such intention to clear the air.

The actual outcome was very different. Although the armed forces were not greatly reduced before V-J Day, cutbacks in war production had reduced manufacturing employment to approximate peacetime levels, contrary to expectation. Layoffs at the termination of war contracts were only around 2 million—a fraction of what had been expected. Manufacturers were confident that they would soon need the workers, and apparently hesitated to part with them for fear that they could not hire them back when needed. In view of the excess profits tax, the financial risk of holding onto workers too long was slight.[37] The census figure

as equivalent to prewar metal products, or who has noticed how often wartime shoes had to go to the cobbler's, can sense the way in which the figures exaggerated our productive achievements.

[36] For a while there was hope of a tapering-off period after the European war terminated. But the stiff Nazi resistance delayed V-E Day until within a few months of V-J Day.

[37] If an employer found that he had no use for the workers he retained and thus took a loss on their wages (reducing his profits or even making his total operations unprofitable), he would reduce his profits subject to excess profits tax by the amount of the wages—or else acquire an "unused excess-profits-tax credit" which would entitle him to a tax refund. The tax reduction, at current rates, was over 80 per cent of any loss incurred. On the other hand, if failure to hold together an adequate work force crippled operations after the war, the loss was likely to be chiefly the corporation's own money. Thus, the calculation on keeping workers came out "heads we win, tails we don't lose."

for actual unemployment never rose above 3 million during the demobilization period of 1945–1946.

Output fell quite sharply for a while, as plants were rearranged and "pipelines" filled with goods for civilian production. But non-durable manufactures were expanding by the end of 1945, and durables by March 1946. Outside the field of manufactures and minerals, activity was scarcely checked at all.

Although the employment and output situations were better than expected, prices and distribution were behaving badly. The repeal of the excess profits tax, effective at the end of 1945, marked the breakup of the stabilization compromise. If business could "cut a melon," organized labor—released from the no-strike pledge —did not intend to be left out. And if organized labor could have its wages increased, organized farmers intended to obtain corresponding price increases. At the outset, price control was maintained. But food rationing was dropped in the autumn of 1945—on the strength of a temporary gain in food supplies achieved by draining the military "pipelines."

Price control soon ran into difficulties. Patriotic incentives to comply with inconvenient regulations weakened. Manufacturers concentrated on the lines where price control allowed them the best profits, and supplies were "unbalanced." Broadcloth shirts (selling supposedly for $3.00, and costing 20 cents to launder) were out of stock at the haberdasher's; the consumer had the privilege of buying $8.00 "sport shirts" which would cost 50 cents to dry-clean. Builders could get some sorts of hardware, but nails were scarce; and so it went.

Businessmen had no intention of accepting cost increases from higher wages and farm prices without boosting their prices. Moderate advocates of price control felt that, to make the control go on working, employers would have to be allowed to pass cost increases through to their customers.[38] OPA officials felt that, once the price level was allowed to "get in motion," the game of control was up. In the end, it looks as if both were right: effective price control was probably out of the question in the climate of the moment.

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[38] For an example of this line of reasoning, see M. G. deChazeau, A. G. Hart, and others, *Jobs and Markets* (Committee for Economic Development Research Study· New York: McGraw-Hill, 1946), Chapter IV.

The legal powers of OPA were timed to expire June 30, 1946. In the shadow of the oncoming congressional election, it was perhaps politically inevitable that Congress would enact an extension only at the last minute—and on terms which went as far toward decontrol as there was any chance that President Truman would accept. In the event, the act passed late in June was vetoed, and there was a hiatus of several weeks before a weakened renewal act was passed and signed. There was plainly a strong likelihood that the resuscitated OPA would not live long. Farmers, gambling on a termination of controls, held off selling their livestock in hopes of better prices. The resulting meat shortage made termination of the key food controls a political necessity a few weeks before election, and thus justified the farmers' price gamble.

During the hiatus of the summer, and again on termination of price controls, there was a sharp rise of prices. In good part, this was merely alignment of quoted prices with "black-market prices," which had risen to importance in the spring (and even more during the attempted revival of price control in the early fall). Late in the year, merchants and some manufacturers made determined efforts to roll back certain key prices, and it looked possible that the price peak might have been reached. But price increases picked up momentum again in 1947. The wage increases of early 1946 were followed by a smaller "second round" in early 1947. The catastrophically bad winter in Europe (plus delayed damage from wartime disorganization of European society) led to a very heavy export surplus throughout 1947—financed partly by American loans, partly by gold shipments—and foreshadowing the need for the Marshall Plan, which was first broached in June 1947. In addition, the United States was hit by bad crop weather, and a serious corn crop failure (leaving farmers with too little feed to maintain an adequate flow of meat to market over the next crop year) paved the way for a sharp rise of food prices and a "third round" of wage increases.

In this postwar inflation, monetary policy played an important but not a very dignified part. The wartime accumulation of cash assets helped greatly toward inflation. In particular, it led consumers to spend an abnormally high proportion of their "disposable income" in 1946–1947, where reluctance to lower the annual rate of saving might have been a useful brake on inflation.

Similarly, the wartime accumulation enabled many business firms to embark on plant expansion without serious financial limitations. At the same time, it proved that many consumers and many business firms needed credit to support their spending, and there was a rapid expansion of bank loans. With bank reserves "open-ended," [89] this expansion could not be checked. But the authorities were reluctant to end this situation either by raising interest rates enough to make short-term government securities no longer equivalent to reserves, or by raising reserve requirements enough to take up the slack. When Chairman Eccles of the Federal Reserve Board finally made a definite request for higher reserve requirements, late in 1947, he received practically no support.

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Note on Alternative Points of View and Supplementary Readings

For a general view of economic fluctuations in the United States and other countries over a long period, see W. L. Thorp, *Business Annals* (New York: National Bureau of Economic Research, 1926), and the introduction to this book by W. C. Mitchell.

For the interwar period here and abroad, see J. A. Schumpeter, *Business Cycles* (2 vols., New York: McGraw-Hill, 1939), Chapters XIV and XV (pp. 692 ff.). A brief and lively account of the interwar annals of the United States is given in J. A. Schumpeter and A. Smithies, "The American Economy in the Inter-War Period," *American Economic Review,* Papers and Proceedings, May 1946, pp. 1–27. See also K. R. Bopp, "Three Decades of Federal Reserve Policy" in *Federal Reserve Policy* (Washington: Federal Reserve Board, Postwar Economic Studies, 1947), pp. 1–29.

On the key issue of the deflation after 1929, see Lionel Robbins, *The Great Depression* (New York: Macmillan, 1935), and H. H. Villard, "The Federal Reserve System's Monetary Policy in 1931 and 1932," *Journal of Political Economy,* December 1937.

A fascinating mathematical analysis of interwar American developments is offered by J. Tinbergen, *Business Cycles in the United States of America, 1919–1932* (Geneva: League of Nations, 1939). This study is being followed up by work at the Cowles Commission for Economic Research (University of Chicago). To my mind, these mathematical studies are inconclusive; but they are very suggestive of

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[89] Cf. the discussion above, pp. 104–106 and 115–116.

possibilities for an interpretation of the annals which would put less stress both on policy and on shifts in the public's attitudes than I have done.

On the working of the war economy in the United States, see J. K. Galbraith, "The Disequilibrium System," *American Economic Review,* June 1947, pp. 287–302.

— *Chapter XIII* —

GENERAL INTERPRETATION OF FLUCTUATIONS

Job of the Chapter. Should we make up our minds that business fluctuations are just part of the environment we live in—like the weather, or like the deep commitment of our society to keep on with scientific discovery and invention even though we risk destruction? Or should we think of fluctuations as an evil to be combated?

Some sort of answer to these questions can be found in the last two chapters. I stand with those who think fluctuations are an evil to be combated. But I think *tendencies toward fluctuations* are very deep-rooted in our way of life, and that *fluctuations in components of economic activity* are not only unavoidable but desirable. The question is how to get fluctuations in one component to offset the fluctuations in another.

It is hard to carry on a discussion of this kind, where so much is necessarily between the lines, without seeming to say things you do not mean. In this chapter, I am concerned largely with avoiding misunderstanding, by disclaiming some things I might be understood to say; although I try also to draw a few positive inferences that might not otherwise fall into focus. I am not attempting a systematic summary of knowledge on fluctuations—because (1) this would call for a whole book; (2) I don't know a lot of the answers; (3) by good luck, the policy problems toward which we are heading do not require a complete summary.

"Incentives" versus "Markets." The interpretation of the record offered in the last two chapters rests largely on the adequacy of "markets" for the products of industry. This view may seem to be in conflict with the widely held view that prosperity depends on adequate "incentives" for business.

This apparent conflict is a fraud. For one thing, the "markets"

point of view is not so different from the "incentives" point of view as it looks. In strict logic, markets are part of the incentive structure. Broadly speaking, prosperity requires *both* adequacy of markets *and* adequacy of other types of incentives. The appearance of conflict arises largely because politicians and journalists often talk as if taking care of certain other incentive considerations (tax rates, "government competition with business," and various types of government regulation) would make it unnecessary to worry about markets. A certain emphasis on the market side is needed to offset this bias in the discussion. The apparent conflict is sharpened by a tendency of those concerned about other incentives to *oppose* concern with markets.[1] It is quite proper to worry lest emphasis on markets overshadow other incentive problems. But actually the benefits of other incentives are largely lost if markets are too weak.

It should need no argument that the "market" idea is an "incentive" idea. The strongest incentive for any firm to step up its output and employment is to have orders from customers which it can fill only in this way. The whole setup of American business, with its emphasis on sales and sales promotion, is evidence for this interpretation. It is true that the effects of strengthening markets may show up in increased prices rather than increased output. But the facts (1) that the sales organization of every business is always hungry for orders, and (2) that the producing and purchasing organizations take pride in seeing that orders are filled, speak strongly for the view that "markets" are a powerful production incentive. Furthermore, if this incentive falls below a certain level, other incentives fail. Take the area where other "incentives" have most importance. What affects the decision to install a new plant? Increased freedom from regulation, tax allowances, restoration of a "climate" that will strengthen the

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[1] Unfortunately, to the extent that businessmen are persuaded that measures to stabilize markets are bad medicine, such measures do come to have adverse psychological effects on investment decisions. Thus, a big propaganda fuss about what I have called the "apparent conflict" tends to give the conflict some reality. If the "market" considerations were really of secondary importance, it might be worth soft-pedaling them to avoid this effect. But all the evidence shows that they are of primary importance. To keep them out of sight for this reason would amount to yielding to blackmail. The proper solution for the propaganda-created conflict is to convince businessmen (by argument and by favorable experience) that the conflict is a fraud.

businessman's pride in his work, and better terms of financing—all will be unavailing if markets are so weak that the businessman can't sell the output of the plant he already has.

Looking at the other side of the picture, it is plain that incentives other than markets cannot safely be neglected. In the production of consumption goods and of goods to be sold to government, the notion that output is pulled along by suction from the buyer's end of the pipeline is a useful part of the truth.[2] When it comes to investment, however, the initiative is clearly with business. Investment is always aimed at the production of future output, so that markets are an essential ingredient of investment incentives. But confidence in future markets is not mechanically determined by present markets. Influences on current markets via consumer spending power, government purchases, and so forth, may be very favorable to investment, and lack of other "incentives" may still hold investment down.

It is not the business of this book—primarily concerned with money and banking—to go into many parts of the incentive field. I cannot avoid some discussion of the effects of *levels* of taxation; but the differential effect of different *types* of taxation has to be left for the greater part to public finance books. This means leaving much of the strict incentive effect of business taxes in the background. For it can never be too much stressed that an incentive structure favoring large production and investment is not achieved simply by leaving large profits (after taxes) in business hands. Fat profits may even get in the way of activity.[3] The incentives which count are those *at the margin:* the object of policy in designing an incentive system is to make it more profitable (or

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[2] But even here we must not overlook the fact that the drive of businessmen to get their ideas embodied in goods has its ways of influencing the buyer's suction—notably, through advertising.

[3] If comfortable profits can be made too easily, there may be no spur for initiative. Perhaps the best incentive combination for production and investment is one where the existing situation is unprofitable but where profits can be restored by expanding output and modernizing plant. This point is an example of what theorists call the "income effect" (as distinct from the "substitution effect") of the terms on which profits can be gained.

On the other hand, ample profits have one favorable effect on investment which policy must take into account. They permit large "business savings," which, in turn, increase business borrowing-power. Thus, ample profits mitigate the handicaps to investment imposed by "capital rationing."

less unprofitable) to produce more than less, and not to make any particular level of production profitable.

Taxation is not the only incentive field which I have to leave on one side. Patterns of labor relations; steps that can be taken to give businessmen more sense of helping to frame stabilization policies and of responsibility to help ensure their success; setting the boundaries of public enterprise—all these are major problems in relation to incentives which I can touch on only incidentally.

Anyone who suspects a bias in this book toward overemphasis on "markets" relative to other "incentives" should allow for these exclusions from the field. It happens that "markets" questions lie almost entirely in the jurisdiction of the student of money—the analysis of the payments approach is the best that the profession of economics has to offer on this side. On the other hand, the extensions and amendments of the payments approach that come when we combine it with the cash-balances approach [4] are all on the "incentive side." This effect may be seen, in particular, in the argument on investment above.

The Price Issue. Closely related to the problem just discussed is the price issue. Much discussion of "markets" takes for granted that prices will not take an inflationary course unless stimulation of "markets" is continued *above* the level needed to reach full employment. This is a risky assumption, as may be seen from the analysis of price-making in Chapter X.

One reason for the conservative hostility to "markets" arguments to which I referred above is a shrewd suspicion on the part of the conservatives that those concerned with markets are committing a "fallacy of identification." It is unhealthily easy, in "markets" analysis, to assume that expanding consumer-or-government demand for the products of industry is *the same thing* as expanding employment. But, as John Stuart Mill emphasized a hundred years ago,[5] "demand for commodities is not demand for labor." Markets for output are translated into employment by the decisions of businessmen to produce for those markets and to hire workers for the purpose.

If markets expand but businessmen do not take corresponding

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[4] Chapter VIII.

[5] *Principles of Political Economy*, 1848 (Ashley edition, New York, 1926, pp. 79 ff.).

decisions to expand output and employment, the effects of increased demand are short-circuited. The result is a mixture of shortages, price increases, and increased saving.

Insofar as businessmen leave both production and prices unaltered, we get shortages in the sense experienced during and after World War II: some buyers who want the goods, and will pay the quoted price, are frustrated because their dealers have none in stock. To some extent, businessmen who fail to expand output will take the benefit of stronger markets in price increases; and, of course, part of the spending power of the frustrated buyers "spills over" into areas where goods are available "at a price." Thus, part of the strength of the market goes to waste in price increases.

Besides this, we get some involuntary saving. Some of the frustrated buyers will hang onto cash in order to buy when goods are again available (or when their turn comes under an allocation system). On the markets where prices rise, some buyers will hope for a reversal. In theoretical terms, what happens is an increase in "speculative demand for cash balances" and a flow of saving devoted to filling this demand.[6]

Just as with the incentive problem, this line of thought soon leads into questions we cannot handle within the field of money and banking. In this case, the problem leads over into "price economics" (the domain of "economic theory" in the narrow sense), and into the politics and sociology of the organizations which make prices—not only business firms, but trade unions, trade associations, "pressure groups," government offices, and legislatures. I have tried to handle some of these problems in Chapter X, and more will come up in Part V. But my account of them is frankly inadequate—and could not be otherwise without bringing most of economics and a large slice of the other social sciences into this book.

Alleged Advantages of Depressions. Some people think de-

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[6] In "hyper-inflation," on the other hand—when most people come to feel that the end of the price rise is out of sight—people try to scale down cash held both for transactions and for precautionary purposes to a minimum. (In such a situation, other assets come to be superior for precautionary purposes.) Unless there is a substantial minority which is "bearish" enough to hope for a quick reversal, the aggregate commodity value of the public's cash assets may shrink very low. See page 251.

pressions are a good thing. I don't. Depressions have some incidental good effects ("it's an ill wind that blows nobody good"), but not enough to pay for the damage they do. Anyhow, there is probably no danger of our entirely eliminating depressions. With good luck and good management, we should be able to keep depressions reasonably mild and brief and still enjoy such real advantages as they offer.

What are these incidental good effects? The main ones claimed seem to be: (1) general moral toning up; (2) selecting efficient processes, firms, and business leaders for carrying on production; (3) invention; (4) breaking down monopolistic combinations and price rigidities; (5) preserving industrial discipline and efficiency.

It is a venerable doctrine in Christian morality that we should be grateful for the "trials" of this life because they are good for our characters and give us a chance to show our fortitude. Most of us feel that our lives would have been poorer if some of the hardships had been left out. But quite apart from business fluctuations, the world in our lifetime is likely to offer enough "trials" to keep up our moral fiber. And even from a moralistic standpoint, "trials" can be overdone.[7] People who are capable of fine things may be strained past the breaking-point (either by the hardships of a depression or by the temptations of a boom); and the wake of business fluctuations is full of moral wreckage.

As to (2), the selection of efficiency over inefficiency, it is true that the "weeding out" of inefficient firms and the overhauling of methods and leadership in surviving firms does tend to happen in depression. The hothouse climate of an inflationary boom can keep inefficiency alive where depression will kill it. On the other hand, it is not only weeds which are nipped by the frost of depression; many promising enterprises are killed because they happen to be at a tender stage. Survival depends on the luck of not being at a vulnerable phase of growth—for example, on not being just in the midst of developing a new market, or near the date when a large debt must be paid or renewed—when a slump strikes. The inefficient may survive depression if they happen to have good financial backing.

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[7] Overemphasis on the value of "trials" comes into conflict with the plea in the Lord's Prayer to "lead us not into temptation."

As to (3), invention, necessity is proverbially its mother; and hard times undoubtedly do galvanize people into finding new and effective ways to do things. But there are offsetting losses. One of the great wastes of depression is the diversion of businessmen's planning efforts. Whenever a serious slump hits, business plans for further development go into the wastebasket (or have to be set aside until they are out of date); planning energies in each firm have to go into improvising stopgaps to protect the firm against the slump. The benefits of forward-looking engineering and production management are frittered away.

As to (4), breaking down monopolistic combinations and price rigidities, depressions doubtless do make a contribution. But depressions also build up the fears which drive businessmen and workers into defensive price-making combinations. Furthermore, they create a climate in which such combinations can command political support from people who do not benefit—even, frequently, from people who can expect to suffer from higher prices —on the ground that the groups involved are entitled to set up defenses against future depressions.

As to (5), preserving industrial discipline and efficiency, the situation is parallel. In a depression, fear of losing a job may stimulate a worker to work hard and try to stay on good terms with the foreman. On the other hand, fear that jobs may be scarce is the motive behind collective labor action of the sort we call "slowdown" and "featherbedding." The disciplinary value of fear that the worker may be fired for inefficiency may even be weakened by depression; for a trade union has stronger incentives to defend every worker threatened with discharge, if the members feel insecure.

What should be emphasized is that the economic values of depression do not depend on *general* depression. No policies proposed for economic stabilization promise to prevent depressions in *individual industries* which become overexpanded relative to other lines, or which are suddenly hit by powerful cost-reducing inventions in competing industries. Such individual-industry depressions can yield society all the gains discussed above. Their effectiveness does not gain, however, by having all industries depressed at the same time. Contrariwise, the toning-up effect of depression on any one industry is at its best if other industries

are prosperous. In this case, the workers, managers, buildings, and so forth, released by the collapse of an inefficient firm can find uses in other industries. But such a collapse in a general depression may leave these productive resources with no place to go. Many an inefficient firm has been patched up to perpetuate its inefficiency, at sweat-shop wages, because it failed when surrounding industries were depressed rather than when they were prosperous.

Self-Generation of Fluctuations. Another way of looking at the "silver lining" of depressions is the suggestion that we have to suffer through them as the price of the ensuing prosperity—with an implication that any attempt to tinker with the depression may somehow spoil it and keep the ensuing prosperity from happening.

At its crudest, this argument is an inversion of the old fallacy of "post hoc ergo propter hoc." Depressions come before prosperities, and therefore in some sense must cause them. We should not be too much impressed with this sequence. If a depression is followed by depression rather than by prosperity, then our recording apparatus simply says "Long depression, isn't it?"—and long depressions do happen. All that we are strictly entitled to infer from observing alternating depressions and prosperities is that both do happen; for they can't both happen at once.

On a more sophisticated level, it is argued that depressions make up for the deficiencies of past prosperities. In prosperity, something happens—some sort of "imbalance" develops—that makes it impossible for prosperity to continue; hence, the downswing. If this "imbalance" can be "corrected" in the depression, the conditions for prosperity can be restored, and we can get an upswing.

Now there are some kinds of "imbalance" that occur in prosperity and can be "corrected" in depression. For example, we do sometimes get "overbuilt" in some cities during a boom. If in an ensuing depression construction is low, we may gradually develop a nation-wide housing shortage (due to population growth, fire losses of houses, and so forth), which will make it easier to be prosperous later. But, on the whole, I think that we get upswings *in spite of* depression events rather than *because of them*—except as depression shifts public policy.

One of the most convincing explanations of why prosperities peter out is that prices "get out of balance." For example, if building costs acquire upward momentum during an expansion of building and keep on rising after building starts to shrink, the construction industry may "price itself out of the market." A reduction in building costs suggests itself as the natural remedy.[8] A depression is a way to reduce building costs, all right. Unfortunately, however, a general depression does not reduce building costs *relative* to other prices; for the prices which make up building costs are among the most rigid. Thus, a general depression cuts other prices (including rental values of existing buildings) more rapidly than building costs, and the "imbalance" becomes worse instead of better. If the depression can be fairly closely confined to building, prospects are better; it is letting the depression spread from building to general business that does the mischief. The policy implication is plainly that, if "imbalance" of prices is interfering with prosperity, it probably takes mild stimulation of other industries to give us the benefit of corrective price declines in the industry which is "overpriced."

A similar argument applies where a downswing is set off by business decisions to reduce excessive inventories. The natural and healthy reaction of a firm which finds its inventories too big is to hold a "clearance sale" and slow down purchases. But if everybody is doing this at once, we get a general recession. In a general recession these processes for adjusting inventories are at work, all right. But, unfortunately, each firm's efforts reduce the general level of income and thus interfere with the sales of other firms. Furthermore, the fall of activity and sales reduces the *denominator* of the inventory/sales fraction, by which business judges the adequacy of inventories. Thus, the process may fail to improve the excessive inventory ratio which set off the slump—and may even make it worse.

We get the same answer again if the starting "imbalance" is an

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[8] In such a situation, a temporary slump in private construction may become unavoidable; for, if building costs are falling at all rapidly, builders may refuse to put up new structures which will compete with structures built later at lower costs. Unless it is possible simultaneously to increase public construction and cut building costs (two processes likely to get in each other's way), a slump in *total* construction may thus become unavoidable. But it should be possible to get revival as soon as costs have hit bottom.

"unsound financial position" of debtors. Pressure on debtors to pay off their debts does reduce outstanding debts, all right. But such pressure cuts down the volume of business, and thus cuts into the incomes on which the debtors' credit standing depends. Thus, successively in 1930, in 1931, and in 1932—after one, two, and three years' effort, respectively, to cure the unsound credit situation of 1929—the credit situation was more unsound than ever. Financial conditions for prosperity were undermined, not built up, by the use of depression as a corrective.

The answer is even more emphatic if what is lacking for sustained prosperity is "confidence." Depression teaches people not to trust the promises of their debtors, the purchase commitments of their customers, the safety of their banks, or the competence of their governments to safeguard their welfare. It is likely to engender hasty "experiments" in economic policy—which are much more certain to scare investors than to produce desired results. Under present conditions, if depression lasts too long and cuts too deep, it may weaken the mutual trust of different groups of citizens to the point where they can't co-operate to get the nation's work done. The real possibility of paralysis through such a crisis of confidence is illustrated by postwar French experience—caused in part by the Nazi occupation, in part perhaps by weak current policies, in part by memories of the inflation in the 1920's, but surely in large part by the rifts which opened during the dragging depression of the 1930's.

The notion of a general depression as a "healthy corrective" for economic ills should, therefore, be rated as dangerous nonsense. We may find ourselves forced to accept a depression sometimes, because public policy has erred, or because policy has not been able to find a well-timed offset for a slump in some important sector. But we should not delude ourselves that by meekly "going through the wringer" of depression we are bringing about recovery. Recovery will come when some expansive force comes along—it may be a lucky accident, or it may be the result of shrewd policy—which is strong enough to offset *both* the "imbalance" which set off the recession and the handicaps to recovery which depression itself creates.

Room for Policy. The experience summed up in Chapters XI and XII shows that different spells of prosperity have been

built on different combinations of factors. Sometimes consumers have been so anxious to spend, or debt-financed government spending has been so heavy—or both—that there was no difficulty sustaining prosperity with a very small volume of private investment. Sometimes prosperity has been dependent on a large volume of private investment. The composition of that investment has varied a good deal from one time to another—now housing, now equipment, now inventories being the main item.

Another fact which sticks out from the record is that, *within* a stretch of prosperous years, the foundations of prosperity may shift a good deal. The composition of investment changed sharply during the 1920's, for example. Housing played a much larger role early in the "new era" than near its end.

Probably any long-continued prosperity must in this sense rest on a shifting foundation. For reasons examined in Chapter XI, we must expect and even welcome fluctuations in such components of activity as house construction, agricultural exports, and automobiles; and, for reasons I cannot go into here, it is probably over-optimistic to hope to live without serious fluctuations in inventories. People's urges toward saving are likely to be somewhat unsteady. If we succeed in avoiding major depressions, it will be because we are lucky enough or skillful enough to have some of these elements take a turn for the better just when—or soon after—others take a turn for the worse.

On the record, it would be rash to gamble on this sort of offset happening spontaneously. Such an offset has sometimes happened in the past, without there being any government policy for sustaining high activity—witness the prewar prosperities and the "new era" of the 1920's. It can be made more likely to happen if we have a monetary framework that will not compound a recession (as happened in 1929–1932) by monetary deflation; and, as much by accident as by design, we have arrived at a fairly deflation-proof monetary framework. But, for reasonable security against major slumps, we also need measures to temper the instability of the components of investment, and to make it less likely that several will slump at once. How all this can be managed is the problem of Part V. This discussion must be adjourned until we have looked at international monetary relations, which are the problem of Part IV.

Note on Alternative Points of View and Supplementary Readings

A representative statement of the "imbalance" point of view is B. M. Anderson, "The Road Back to Full Employment," in B. M. Anderson, J. M. Clark, *et al., Financing American Prosperity* (New York: Twentieth Century Fund, 1945), pp. 9–70.

An effort to combine observation and theory is J. M. Clark, *Strategic Factors in Business Cycles* (New York: National Bureau of Economic Research, 1935).

For the fountainhead of Keynesian views on fluctuations, see the chapter "Notes on the Trade Cycle" in J. M. Keynes, *General Theory of Employment, Interest and Money* (New York: Harcourt, Brace, 1936), pp. 313–332.

— Part IV —

INTERNATIONAL MONETARY RELATIONS

— *Chapter XIV* —

HOW NATIONAL MONETARY SYSTEMS MESH

Major Interrelations. Several sorts of interrelations between the monetary systems of different countries affect the problems of monetary theory and monetary policy.

1. While each nation has its own money, no economic system is "closed," and there are two-money transactions across frontiers.
2. Foreign moneys, gold, and near-moneys may be important forms of property for the households, firms, and government bodies of a given country.
3. Economic disturbances (depressions and inflations) cross frontiers.
4. Consequently, the economic policy of each country affects the welfare of its neighbors. Co-ordination of national policies—as a minimum, avoidance of "economic warfare"—becomes crucial.

Part IV, as a whole, is built around these problems. The job of Chapter XIV is a brief preview to clear the ground for Chapters XV–XIX, which are more technical—although still sketchy, because of the limits of space.

Two-Money Transactions. Whenever buyer and seller of a commodity live in different countries, the transaction involves two moneys. If a British textile mill buys American raw cotton, the buyer has pounds sterling, while the seller wants dollars. Thus, one currency unit has to be turned into the other. Three prices have to be brought into relation: the price of the cotton in dollars is the price of cotton in pounds *multiplied* by the price of pounds sterling in dollars.

Two-currency dealings are not confined to business dealings in commodities and services. Households have to cover "tourist

expenditures" when members travel abroad. Gifts between households (for example, presents to Europeans from relatives in the United States) are common. Governments have to support their representatives abroad; and when they are "represented" by armies, this support abroad can be a very important factor on world markets. Moreover, governments have two-currency dealings in connection with foreign relief, development loans, and so forth.

Over and above all these dealings, there are two-money dealings which are purely "financial." Banks make loans across frontiers, and transfer funds among their branches. Securities are bought and sold across frontiers. Then, there is speculative buying and selling of foreign moneys themselves.

Foreign Moneys and Near-Moneys as Assets. Property located in one country may be owned by people who live elsewhere. This statement holds for most classes of private property—including houses, businesses, private debt claims, bank balances, and so forth. Thus, a person is free to hold at least as great a variety of foreign as of domestic assets.

Among foreign assets, some are highly liquid *in terms of foreign units of account.* The list includes gold,[1] paper money of the country in question, bank balances, short-term private debts of high grade, and short-term government debts.

Motives for being liquid in terms of a foreign currency run more or less parallel to the motives for holding cash discussed in Part II. A firm which has to buy or to pay debts abroad has a transactions motive to hold liquid assets abroad. Such a firm is also apt to have a margin-of-safety motive for holding foreign liquid assets, insofar as its foreign dealings are uncertain.

The speculative motive for holding foreign liquid assets is a matter chiefly of the relative prices of currency units. A speculative holding of cash, as we saw in Part II, implies a "bearish" attitude. Holding foreign cash implies bearishness *on one's own currency unit.* It means betting that (say) a given number of pounds sterling will presently buy more dollars than it will now.

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[1] Irrespective of its physical location, gold ordinarily has a high liquidity in terms of any currency—that is, it is highly probable that it can be used to settle a stated amount of debt on very short notice. Gold will be discussed more at length in a special chapter (Chapter XVI).

The interplay of margin-of-safety and speculative motives is also affected by fears or hopes of changes in the relative value of currency units. If (say) you are managing an insurance company with policies in several different currencies, it is prudent for you to have a roughly proportionate share of the company's reserves in each currency; thus, the company can meet all claims whatever happens to currency values. If changes seem to be in the offing, separate balances to cover transactions and margin of safety in each currency in which a firm deals become advisable; whereas, if exchange stability is certain, the firm can safely hold all its liquid assets in one currency.

Since about 1930, risks of shifts in the relative prices of currency units have been reinforced by risks that assets in a particular currency may be tied up. As will appear in the next chapter, governments have often "rationed foreign exchange"—that is, have limited the amounts of foreign funds that firms and individuals were allowed to buy. Funds in England have no liquidity relative to debts in the United States if the Bank of England won't let you buy dollars—even if you know exactly how many dollars you can get for a pound once you have permission to sell the pound! Threats of such controls have created a special source of demand for currencies which will not be strictly controlled, and particularly for currencies which give access to exportable goods. The desire of foreigners for liquidity has focused on the American dollar—as a relatively secure and uncontrolled currency—despite forebodings about inflationary price increases in the United States which might undermine the real value of dollar holdings.[2]

Spread of Disturbances. On the record, depressions and booms are international. Between the wars, practically all countries felt the boom of 1919–1920 and the recession of 1920–1921. The Great Depression of the 1930's was serious all over the world.

This similarity in economic annals is no accident. Every country finds markets abroad for some of its output and buys some of its supplies abroad. These relations to foreign markets affect the income stream. Export sales are not paid for directly out of the

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[2] For individuals who feared persecution on political or "racial" grounds and who could hope for admission to the United States as immigrants, in the late 1930's, the dollar had special charms as the currency of the country to which it was most desirable to emigrate.

incomes and business cost-payments of the country. Import purchases absorb part of incomes and cost-payments without directly generating income within the country. On the strength of the payments-approach to monetary theory (Part II, Chapter VII), any shift of a country's exports relative to its imports is bound to shift the forces which govern employment and prices at home.

International Policy Problems. Because economic disturbances are international, each government's policy toward such disturbances affects its neighbors. Specifically, if the United States has severe disturbances in employment and prices, other countries cannot escape—or can escape only by drastic interference with the flow of trade and of funds across frontiers. If the United States manages to keep employment and prices steady,[3] on the other hand, the problem of economic stabilization is much easier for other countries. In the same way, success or failure of economic stabilization abroad works back upon the policy problems of the United States. But since no other country has anything like our economic weight, and since the other industrial countries are more stable, economists generally think of international effects of national policies chiefly in terms of United States policy.

Plan of Part IV. The first step in analyzing international monetary relations is to get a working notion of the foreign exchange market—how payments across frontiers are made, and how the prices of foreign currencies are determined. This is discussed in Chapter XV.

Gold used to be so important in the foreign-exchange machinery as to serve as the pivot in such explanations as I offer in Chapter XV. But it is no longer the pivot. Gold has stopped being something in which individuals (or even commercial banks) deal internationally, and has become primarily the business of central banks and governments. But there is no making sense of interwar monetary history or of postwar monetary prospects without anal-

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[3] From the standpoint of raw-material countries, *prosperity* rather than *stability* in the United States is desirable, because prosperity raises prices of raw materials relative to manufactured goods, and thus improves their "terms of trade." For the same reason, American prosperity damages rather than improves the terms of trade of Great Britain and other industrial countries, and a stabilized depression in the United States might be better for them than a stabilized prosperity—though less favorable to the *physical volume* of their trade.

ysis of the changing role of gold. This analysis is presented in Chapter XVI.

International monetary relationships affect national policy in two ways. (1) Since our domestic policies toward employment and prices will affect employment and prices abroad, we have responsibilities to other countries. (2) The way foreign economies behave (including their reactions to our policies) will affect the way our domestic policies work out. There is not room in this book for a full account of the "international propagation of business cycles." But in Chapter XVII I offer a sketch, centering around the concept of "international equilibrium," and illustrated by the record of national policies in the interwar period.

The interwar record shows that national efforts to ward off disturbances from international trade not only failed of their purpose but threatened to break down international trade itself. A complete account of the problem of "economic warfare" would go far beyond the scope of this book. But Chapter XVIII gives a brief account of efforts to forestall both economic warfare and the spread of employment-price disturbances, focused on the new international monetary institutions and "economic disarmament" agreements.

— Chapter XV —

THE FOREIGN EXCHANGE MARKET

Prices of Foreign Currencies. The daily paper carries a little table of foreign exchange rates, with quotations for the pound sterling, the franc, the Canadian dollar, and so forth—just as it carries daily quotations for wheat, corn, New York Central Railroad shares, and General Motors shares. All these quotations report prices in transactions during the day and reflect a central market with which dealings elsewhere are lined up.

The foreign exchange market, however, is less "organized" than the stock market or the commodity exchanges. It has no regular meeting place for specialized "brokers." The foreign exchange specialists, broadly speaking, are officers of commercial banks. Nonspecialists deal chiefly through banks, and the specialists deal with each other by telephone rather than by gathering in a room. When a specialist has dollars to turn into pounds, he finds out by telephone calls where he can get the most pounds to the dollar. When he has pounds to turn into dollars, he finds out where he can get the most dollars to the pound. With specialists constantly trying to arrange dealings in both directions, anybody whose offers of exchange are at all out of line with the market will find either that his offering is rejected time after time, or else that it is snapped up by somebody who would have been willing to pay a little more. All dealings among specialists [1] are always at prices which cluster very close to "the market."

[1] If you as an individual come to your bank with a small foreign exchange transaction, however, you may pay a rate which diverges a bit from the market. If rates are changing rapidly, what you pay may be several hours (or even days) behind the times. Moreover, a bank which is "retailing" foreign exchange on a small scale expects to realize a little more than it pays (in order to cover its costs and a profit margin); its commission may be stated separately, but in small dealings it ordinarily goes into the exchange rate.

Ordinarily, what dealers buy and sell is not foreign money in the narrow sense, but "bills of exchange." If you happen to have some foreign paper money (left over from a trip, perhaps), the bank will buy it; if you want to have some in your pocket, the bank will sell it. But actual shipment of paper money to settle transactions is rare in international dealings, just as it is in long-distance dealings within a country.

The standard article of foreign exchange markets is a "sight bill." This is the equivalent of a domestic "cashier's check." A sight bill in pounds sterling is an order on a British bank to pay a stated sum in British money to a designated person or firm in Britain, "on sight"—that is, as soon as the bill is presented. "The" rate of exchange quoted in the newspapers is the price on such bills—the "sight rate." The market offers also "time bills," payable 30, 60, or 90 days "after sight." [2] These provide a futures market in foreign exchange. If the sight rate is expected to hold constant, the price of time bills will be slightly lower, because time bills are discounted at the interest rate current on the market in whose currency the bills are drawn.

Arbitrage. The foreign exchange market is many-sided. Although attention focuses on the "sight rates" connecting the major currencies, there are also sight rates involving currencies of the less important countries, besides time rates. There are some day-to-day dealings in securities outside their countries of origin. European stock exchanges have traditionally dealt in American stocks and bonds (especially those of railways, which in some cases were originally financed in Europe), and prices are quoted in European currencies for these securities. Furthermore, organized commodity exchanges may deal in commodities which are physically located elsewhere, as the Liverpool cotton exchange used to deal in cotton "f.o.b. New Orleans." All these international

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[2] These bills will be sent to the market on which they are drawn, and presented to the prospective payors for verification that they are valid. When "accepted," they become "acceptances" on that market (see page 53), and ordinarily are bought by banks there.

Originally, many bills were "trade bills"—drawn by sellers of commodities upon the buyers. When the buyer wanted credit for a few weeks, until he could pay his bill with the money he would get by selling his imported goods, a time bill arose. Trade bills, however, are now relatively rare; both sight bills and time bills are, for the greater part, drawn on banks.

markets are parts of the foreign exchange market in the broadest sense, and their prices are kept in line by "arbitrage."

Arbitrage is a sort of "sure thing" specialization, carried on by specialists who can make large commitments for a few minutes in order to realize a very small percentage of profit. If, for example, a pound cost $4.01 and a Canadian dollar $0.98 in New York, but a pound cost only $4.02 in Canadian currency in Toronto, an alert dealer could make a profit by sending funds around a circle. He could sell pounds and buy Canadian dollars in New York, while buying pounds with his Canadian dollars in Toronto. To buy a pound in Toronto would take $4.02 of Canadian funds, which would cost $3.94 in New York, so that the profit would be $4.01 minus $3.94, or 7 cents per pound—less expenses of various sorts. These figures are for illustration only: so large a gap could not open up in practice unless "exchange control" blocked arbitrage, for this sort of circle of dealings is set up as soon as the gross profit will cover the cost. And, of course, when the "arbitrageur" starts selling pounds and buying Canadian dollars in New York and buying pounds in Toronto, his operations tend to lower the price of pounds and raise that of Canadian dollars in New York, and to raise the price of pounds in Toronto—thus narrowing the gap which started the operation.

Arbitrage can also be carried on in combinations of foreign currencies and prices of securities, commodities, and so forth. If the Amsterdam price of New York Central stock is above the New York price (translated back through the price of the Dutch guilder), there is a profit in selling Central there, selling guilders in New York, and buying Central in New York. Obviously, not everybody can qualify to be an arbitrageur.[3] The chief qualification is an unquestioned credit standing in many countries. Besides, the arbitrageur needs a nose for a bargain, power of quick decision, and the ability to carry on several simultaneous telephone conversations (often in different languages) without becoming

[3] Once in a while, amateurs do get in. One of the celebrated swindlers of the interwar period reportedly started in business as an amateur arbitrageur—having discovered that the Post Office was too slow in changing its money-order prices on some currencies, so that it paid to buy them at the Post Office and sell them at the bank. But this gentleman soon discovered that it was still more profitable (until the law caught up with him) to get innocent souls to "invest" money on his promise that he had a magic way to double it for them.

confused. The arbitrage specialists tend to be central Europeans (often Swiss) operating on behalf of banks.

The existence of these specialists, when foreign exchange markets are unregulated, spares business firms and private individuals the trouble of watching the whole complicated tangle of international markets if interested in any one of them. The ordinary individual can be sure that the arbitrageurs have rubbed out chances to make a profit by roundabout ways of paying for foreign purchases or bringing foreign funds home. When regulation keeps arbitrageurs out of parts of the market, however, chances of loss and gain through skill and luck in handling such dealings (or through attempts to evade the regulations) become conspicuous.

The Balance of Payments. Before we get further into the analysis of the foreign exchange market, we need to review the celebrated principle of the "balance of payments." This is simply a form, adapted to the analysis of international dealings, of the "cash transactions equation," which we have already seen in several forms in Part II.

For every individual household, firm, or government body, the sum of cash held at the beginning of a period, plus receipts of cash during the period, must equal the sum of outpayments during the period plus cash on hand at the end. The same must be true for any group of households, firms, and government bodies—including the group which constitutes a nation. Now, if we subtract all receipts and payments which are domestic, we must be subtracting an equal amount from each side of the equation; for each domestic transaction is a receipt for one domestic unit and an outpayment for another. We can also cancel out initial *domestic* cash of the nonbank public against net domestic cash-creation plus final domestic cash.[4]

What is left of the transactions equation, after we subtract the domestic transactions, is the balance of international payments. On the side of receipts we have:

(1) Initial cash, plus
(2) Receipts from commodity exports, plus

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[4] If the equation is *ex post*, this account is exact. If *ex ante*, allowance must be made for discrepancies in expectations about domestic transactions on the part of buyer and seller. See Chapter IX and Appendix B.

(3) Receipts from sale of services (tourist accommodations, shipping, insurance, and so forth, and personal earnings abroad of people who are resident at home) and gifts from foreigners, plus
(4) Property income (interest and dividends) from abroad, plus
(5) Receipts from sale of securities (both of new issues and of issues already outstanding) to foreigners, plus
(6) Receipts from short-term borrowing abroad (or from foreign repayment of our previous short-term loans), plus
(7) Receipts from sales of gold to foreigners.

On the side of outpayments, we have a corresponding list:

(8) Payments for commodity imports, plus
(9) Payments for services from foreigners and gifts to foreigners, plus
(10) Property income payments to foreigners, plus
(11) Payments for securities bought from foreigners, plus
(12) Payments of loan proceeds to foreigners (or repayment of our previous short-term borrowings), plus
(13) Payments for gold bought from foreigners, plus
(14) Final cash.

"Cash," for the United States, consists of American-owned money and bank deposits abroad, less foreign-owned money and bank deposits in this country.[5] All the items in the equation should be given values in American dollars.

Within the balance-of-payments equation, the accounts for commodities have often been singled out under the heading "balance of trade." A surplus of commodity exports (item 2) over commodity imports (item 8) is called a "favorable balance of trade"; a surplus of commodity imports over commodity exports, an "unfavorable balance of trade." [6] For the commodity items to show a "favorable" balance, there must be an "unfavorable" balance in some other group of items. Thus, a country's balance of trade will tend to be "favorable" if (for example) the country has an import

[5] Published statements commonly omit items (1) and (14), showing only the net difference. Note that if the dollar price of foreign currencies shifts, there has to be a correction for the resulting gain or loss in dollar values of our foreign cash assets. This correction might be treated as an additional item of receipts (if a gain) or of outpayments (if a loss). But I should prefer to show it as a revaluation of initial cash.

[6] The terms "favorable" and "unfavorable" go back to mercantilist days. What the balance is supposedly favorable or unfavorable *to* is accumulation of gold. Gold was desired in those days partly on irrational grounds, partly because a large stock of gold had military value (being available to finance war expenditures abroad).

balance on service account (item 9 exceeds item 3), or if it is lending abroad or repaying past borrowings from abroad [7] (item 11 + item 12 exceeds item 5 + item 6), or if it is a net importer of gold. All these factors combined to give the United States a "favorable" balance in the interwar period. A country's balance of trade tends to be "unfavorable" if the country is a heavy gold producer (like South Africa) and thus has a large item (7); or if it has an excess of property-income receipts over outpayments (item 4 exceeds item 10) (like Great Britain prior to World War II); or if it is borrowing heavily for development (like the United States or Canada fifty years ago).

For most analytical purposes which the "balance of trade" is supposed to serve, a broader concept is better. "Service" items (tourist accommodations, shipping, and so forth, in items 3 and 9) have much the same economic causes and effects as the commodity items (2 and 8).[8] Since the term "balance of trade" is already pre-empted to cover only the commodity items, it is handiest to speak of an *export balance on trade account* when the sum of items (2) + (3) outweighs the sum of items (8) + (9). In the contrary case, we have an import balance on trade account.

The value of the balance-of-payments equation is not so much what it proves as what it disproves. Being a truism, arrived at strictly by reference to definitions (and without any reference to observable facts), it cannot contain any actual information. But *statements which conflict with it must be false.* Thus, it checks the accuracy of analysis of foreign exchange and of international trade; and by this test many superficially plausible assertions prove to be nonsense. For example (see below), a "flight of capital" from a country must mean that its citizens are building up holdings of foreign cash and securities. If so, the accounts of the country must show an export surplus of commodities and services, or an export of gold, or evidence that foreigners are transferring capital *in* by security purchases or loans. In the absence of such

[7] In this case, the country can be described as a "net importer of securities."

[8] Commodity items, although much the largest in the accounts, cannot safely be given the almost undivided attention that they used to enjoy, for they often give a false impression about the degree to which exports pay for imports. Overemphasis doubtless results from their high "visibility." They are much easier to measure than the service items, and have, in fact, been measured for decades—in some countries, for centuries. Compare the early overemphasis on the price side of business fluctuations (cf. Chapter IV), which again reflects one-sidedness in early statistics.

events, anybody who holds that there is a "flight of capital" is indulging in fiction.

Translation of Trade Demand into Demand for Foreign Exchange. American exporters have to meet their payroll and other expenses in American dollars. But their goods are sold abroad for foreign currencies. On the other hand, American importers have dollar receipts from their sales of goods which far outweigh their dollar expenses. But they are dealing in goods whose production costs have to be paid for in foreign currencies.

The foreign exchange market provides a "clearing" mechanism for these two types of dealers. The excess dollars of the importers are siphoned across to exporters to meet their expenses. At the same time, the excess foreign funds of the exporters are siphoned across to meet the costs of the goods that importers are bringing in. Thus, the workers and suppliers of our export industries are paid in their own currency; and the same is true of the foreign workers and suppliers who contribute to the production of goods that we import.

Since every foreign exchange transaction involves two moneys, it is somewhat arbitrary to single out either one as having a "price" in terms of the other. But we are used to thinking of prices in American dollars; therefore, it is simpler to think of foreign currencies as having prices. On this basis, American exports result in a *supply* of foreign currencies, and American imports in a *demand* for foreign currencies.[9]

We may thus think of trade demand and supply schedules for foreign currencies as being much like ordinary market demand and supply schedules for domestic commodities. If the price of (say) the French franc is high, then French commodities have high dollar prices (prices in francs being translated into dollars through the rate of exchange). The amount of each commodity or service demanded will be meager, and the number of francs

[9] This way of talking does not imply that American exporters are always paid in foreign currencies, or that American importers are always called upon by the foreigners from whom they buy to pay in their currencies. On the contrary, foreign shippers of the goods that we import are commonly delighted to be paid in New York funds; and foreigners buying from us are often entirely willing to pay in New York funds. Which currency is used as the basis of settlement in an international transaction is a matter of convenience, strongly influenced by custom. Actually, the dollar (together with sterling) is a favorite standard currency.

demanded to buy each commodity correspondingly meager. If the price of the franc is lowered, this is equivalent (from the American buyer's standpoint) to a blanket price reduction in all French commodities whose franc prices have not risen; therefore, more commodities and more francs will be demanded.

By the same logic, if the price of francs drops, American commodities will cost French buyers more francs. If the French demand for American commodities and services is elastic,[10] the result will be a reduced supply of francs offered in exchange for dollars. That is, French buyers will cut their purchases from the United States—and cut purchases more than in proportion to the rise of price. On this assumption, the supply curve will rise, as we ordinarily expect. In case French demand for American commodities is inelastic, however, this result does not follow, and the amount of francs supplied as well as the amount demanded will drop with a reduced price for the franc. Normally, the demand for any country's exports is elastic, because there are commodities from other countries which can be substituted. But this is not always the case. World War II left a number of countries with inelastic demands for imports from the United States—and also with very inelastic supplies of goods available for export—creating very puzzling problems in foreign exchange.

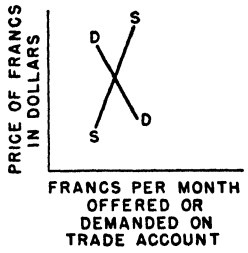


FIG. 26

Drawing demand-and-supply curves for foreign exchange in this way should not lull us into a feeling that these curves will always stay in the same position. On the contrary, the trade-account curves shift from time to time. (1) Agricultural raw materials are very important in foreign trade, so that crop changes (either in importing or in exporting countries) may produce large and sudden shifts on foreign exchange markets. (2) Even more important, foreign trade is affected strongly by income levels. In

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[10] By the standard Marshallian definition, demand is elastic (relative to price) if a *given percentage* reduction in price will generate a *larger percentage* increase in physical sales volume. Under this definition, if demand is elastic, a price cut will increase money outlay on the commodity. Conversely, if demand is inelastic, a price cut will reduce outlay on the commodity.

the United States, the "income-elasticity" [11] of imports is apparently a good deal above unity: a 5 per cent rise in national income is capable of raising imports by perhaps 10 per cent. There is also an effect of income on the demand for goods which might be exported: crops being equal, the United States has a larger "export surplus" of food in depression than in prosperity. On both scores, a rise of income tends to shift a country's foreign trade in the direction of an import balance on trade account.[12] This shift damps the rise of income in the country at which we are looking, and tends to raise income in other countries—a process which helps spread business fluctuations from country to country. (3) Each foreign exchange market is affected by others. If Great Britain can offer France more coal (a fact which immediately influences the pound-franc market), French supplies of francs in exchange of dollars to buy coal in the United States are reduced, and the dollar-franc market is affected.

If all foreign exchange transactions were on trade account, the prices of foreign currencies would have to find levels which would "clear the market." For each country, since the balance of payments has to balance, the value of exports and the value of imports would have to match.[13] This equalization must take place primarily by adjustments of changes in exchange rates; but part of the adjustment may be made by shifts in employment and income. A country which has trouble finding exports to match its imports may experience a drop of export prices, relative to import prices, that can generate unemployment. The result will be a drop in

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[11] That is—roughly—the percentage by which imports rise, per percentage-point increase in national income.

[12] Here, again, the outcome may be peculiar if other countries have an inelastic demand for the first country's exports. If they have, export prices may be so much raised by the competition of foreign and domestic buyers that the *value* of the reduced physical volume of exports goes up sharply and may outpace the rise in imports. This was true in the United States in 1947.

[13] This rule would hold for the *total* exports and imports of each country, not for exports and imports between *pairs* of countries. The United States can have an excess of exports over imports in trade with Great Britain and an excess of imports over exports in trade with Brazil, on condition that Great Britain have an excess of exports to Brazil—or that some more complicated chain of relationships close the gap. In terms of the foreign exchange market, an excess of American trade demand for Brazilian cruzeiros over American trade supply can be bridged by British offerings of excess cruzeiros acquired in British-Brazilian trade. This is the foreign exchange side of "triangular trade."

imports—balancing the foreign exchange market at the expense of domestic instability.

Speculative Influences on Foreign Exchange. Besides trade demand and supply of foreign exchange, there are investment and speculative sides to the market. The investment side may be passed over briefly. It consists partly of very inelastic requirements for funds to redeem bonds which fall due, partly of much more elastic requirements for new commitments. These commitments include purchase for investment of securities already outstanding, dealings in newly issued foreign bonds and stock, and purchase of physical assets (such as foreign branch factories). We may expect changes in prices of foreign currencies to affect the attractiveness of possible bargains in foreign assets much as they do the attractiveness of currently produced goods—remembering that international investment involves long-term commitments, and will behave more like the durable-goods side of commodity trade than like trade in perishable goods or in services. The investment side of the market ties in with the speculative side, since the investor always has to consider whether he could make a better bargain by waiting a little for the price of a foreign currency to sag—or by rushing in before the price of a foreign currency rises.

The least speculative aspect of the speculative side is arbitrage. As I have already observed, this is "sure-thing speculation," and perhaps had better not be called speculation at all. The arbitrageur takes risks, but he always manages to take risks which offset each other, so that his *net* risk is zero.[14] His operations bind the different parts of the market together. In effect, they make sure that the availability of excess cruzeiros on trade account in Great Britain will not be overlooked in clearing American accounts with Brazil.

A step away from the mere tidying up of trade demand is speculation on seasonal fluctuations. In the pre-World War I days, when the United States was the great wheat exporter of the world, the United States had a strong "favorable balance of trade" (and an export balance on trade account) during the months when wheat was being shipped. This favorable balance pushed down

[14] Losses in arbitrage can scarcely happen except through deliberate fraud, or through some misunderstanding about the price in an arbitrage transaction.

the prices of the pound sterling and other European currencies. Counting on the normal seasonal revival of these prices, foreign bankers would provide an additional demand for foreign currencies by paring down their New York funds, and American bankers would provide an additional demand for foreign currencies by building up their London funds. The motive for such shifts of funds was largely the profit obtainable by selling pounds later at $4.87 or $4.88 rather than selling immediately at (say) $4.85. In addition, seasonal shifts in interest rates tended to make London a more profitable place to lend than New York at such times of year.[15] This type of speculation also is probably a stabilizing rather than a destabilizing force—except as speculators make mistakes.

Much more unsettling is speculation over a possible *permanent* change in the price of a foreign currency—developing, in extreme cases, into a "flight from the currency." In the early 1930's, when the dollar prices of many currencies were marked down successively (with a stage in the middle where dollar prices of other currencies were marked *up* by the American devaluation), this sort of speculation became very important. A large fund of "hot money" was built up, which was transferred away from currencies whose prices were deemed likely to fall. The policy problems that this situation created for various countries, and the resulting changes in the way the foreign exchange market worked, are sketched below.

Official Demand and Supply of Foreign Exchange. So far I have been talking about *private* demand and supply of foreign funds. There is also *official* demand and supply arising in two ways: (1) financing of diplomatic and military operations outside national boundaries; (2) official dealings aimed to stabilize (or to change deliberately) the rates of foreign exchange. The first is sometimes a major factor on foreign exchange markets; [16] but our main concern is with the second.

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[15] Under the prewar gold standard, the seasonal "weakening" of the pound created possibilities of making a profit by buying gold with London funds, shipping the gold to New York, selling it to the Treasury at $20.67 per ounce, and using the dollars to buy pounds on the New York market. This movement of gold eased bank reserve positions in New York (lowering interest rates) and tightened reserve positions in London.

[16] The most famous case is the German government's demand for foreign currencies to pay reparations in the 1920's. The size and inelasticity of this demand

Official dealings aimed to regulate the prices of foreign currencies have always loomed large on foreign exchange markets. Traditionally, these dealings have focused on official offers (either by governments directly or by central banks) to buy and sell at stated prices either foreign funds or gold.

From 1879 to 1914 and from 1925 to 1931, the standing gold offers of the British and American authorities meant that enough gold to buy £1 was also enough to buy about $4.87. The American offer to sell gold was equivalent to an offer to sell pounds *except* that the buyer would have to get his gold to London.[17] This transfer cost about 2 cents per pound's worth (in large shipments). Consequently, any time that the price of the pound rose above (roughly) $4.89, banks could make a profit by selling London funds and shipping gold to cover their sales, and the competition of banks kept the rate from exceeding this amount. For parallel reasons, any time that the price of the pound fell below about $4.85, a profit could be made by buying pounds and using them to buy gold for shipment to New York. Thus, so long as both sets of authorities stuck to their offers, the fluctuation of the price of the pound was limited by a "gold import point" of about $4.85 and a "gold export point" of about $4.89.[18] The price which would have been *both* export point and import point if shipment had been costless (about $4.87) was known as the "par of exchange." [19]

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made it very disturbing. Just what happened in this case has been much disputed, however, as its interpretation has been a political football.

In the early phases of the two World Wars, the demand of the British and French governments for foreign funds (especially American dollars) to buy war supplies was of predominant importance. In the early postwar years, government financing of American exports for relief and rehabilitation have been major forces on the markets.

[17] The time of shipment was about the same for gold as for "sight bills," so that we need not be concerned in this illustration about the date at which funds became available. If air mail had been available for shipping papers but too expensive for the shipment of gold (as might be the case if the same gold system operated today), the timing complications would have been bothersome.

[18] Only "about" $4.85 and $4.89, because (1) the "par of exchange" was slightly below $4.87 and (2) the costs of gold shipment shifted somewhat with shipping schedules, insurance rates, and the pressure upon steamers' strongbox space as the rate of shipments varied.

[19] Before the days of the Federal Reserve, costs of shipment of gold produced a range of variation in the prices of *dollars* at various points in the United States. A dollar in San Francisco might be worth slightly more or less than a dollar in New York according to the flow of trade. Under the Federal Reserve, however, the Reserve absorbs such costs, and "domestic exchange" is at par for all American cities.

Besides offers to buy and sell gold and silver, monetary authorities often post offers to buy and sell "bills" in specific foreign currencies. During the part of the interwar period when nations were trying to re-establish the gold standard (1925–1931), most countries were on a "gold exchange standard." Being on the gold exchange standard meant that they offered to buy or sell, not gold itself, but foreign currencies (in most cases, either dollars or pounds) which were on a gold basis.[20] After the pound "went off gold" in 1931, many of these countries (constituting the "sterling area" [21]) continued to post official offers to buy and sell pounds, although the pound was no longer a "gold currency."

Official demand and supply of foreign exchange has not been limited to posting standing offers at fixed prices. During the process of the American devaluation in 1933, the American gold price was changed often, and, in Secretary Morgenthau's words, "The Treasury was on a 24-hour basis"—meaning that no guarantee was issued on tomorrow's price. Even after the price of $35.00 an ounce for gold was established, the authorities long refused to describe this price as permanent.

In Great Britain, after the gold standard was suspended in 1931, a fund called the "Exchange Equalization Account" was set up to buy and sell foreign currencies. This fund did not prevent all exchange fluctuations—the pound-dollar rate fluctuated a good deal more than it had done in 1925–1931—but it apparently did damp them. While its operations have never been fully publicized, it appears to have thrown its weight so as to slow down either a rise or a fall in the sterling price of the dollar, but to have given way if the opposing pressure proved steady. In 1932 the pound dropped as low as $3.21. From the American devaluation until war became imminent in 1938, the pound hovered around $5.00. After a sharp dip in 1939, the rate was "frozen" during the war at about $4.00.

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[20] Like many official offers to buy and sell gold, these offers ordinarily quoted a buying price slightly below the selling price. This "spread" provided a source of income to cover currency expenses and reduced the volume of business that the official exchange authorities had to carry on.

[21] The "Sterling Area" has had a somewhat shifting membership. Most of the time, it has included the British dominions (other than Canada), certain small countries with close ties to Britain (Portugal, Egypt, Iraq), Scandinavia, and a number of Latin American countries.

Other nations (notably the United States) followed the British example in setting up "stabilization funds." In general, they operated with less freedom. The United States fund never had over $200 million committed, and seems to have operated largely by advancing funds to cover gold in transit—probably making very little difference to the average level of exchange rates. By international agreements (apparently operating chiefly through the British fund), exchange rates among the American dollar, the British pound, the Canadian dollar, the French franc, the Belgian belga, the Netherlands guilder, and the Swiss franc were held steady in 1934–1936. Late in 1936, the continental European currencies involved (except the Belgian) were moved lower relative to the pound and the dollar. The French franc continued to decline, but the other currencies were maintained for several years.

The International Monetary Fund structure aims at renewal of exchange stabilization by official buying and selling. The Fund itself is not instructed or empowered to buy and sell from day to day. But member nations have set up parities (nominally in terms of gold; actually in terms of the dollar), and agree to set up arrangements to buy or sell exchange freely at those parities (plus or minus a reasonable spread) and not to alter their parities more than 10 per cent without the consent of the Fund. By drawing on the Fund, member nations can obtain resources to back up their pledges to buy foreign exchange if other reserves run short.[22]

Exchange Control. Besides carrying on official dealings in foreign exchange, governments during the 1930's came increasingly to control private dealings. Under exchange control, a firm or individual that has gold or foreign funds is required to turn them into approved channels.[23] A firm or individual that wants foreign funds to buy something abroad or to discharge a foreign debt is required to apply through approved channels for the privi-

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[22] See Chapter XVIII.

[23] This requirement means in most cases that foreign exchange dealings are supposed to go through the central bank, or commercial banks approved and supervised by the central bank.

Many exchange control systems have permitted the use of foreign funds without question for the buying of commodity imports *if* the funds were the proceeds of commodity exports of stipulated types.

lege of buying exchange. Exchange is "rationed"; applications for some purposes may be disallowed completely; applications for other purposes, allowed only in part.[24]

Exchange control began to be important with the German "Stand-Still Agreement" of 1931.[25] This agreement authorized the German authorities to prevent the use of foreign funds owned by Germans for repayment of debts then outstanding (except for gradual retirement under the agreement). Transfer of funds in Germany owned by non-Germans was also restricted. On the other hand, the agreement aimed to make German holdings of funds in other currencies—including proceeds of later German exports—freely available to pay for current German imports.

At the time of the American "devaluation," firms and individuals were required to turn in their gold holdings. Machinery was also set up for rationing foreign exchange to those wanting to buy foreign funds; but these controls were not really restrictive. Similar arrangements were set up by the "gold bloc" countries later in the 1930's, and much more actively used.

Still more intensive use of exchange control grew up in Nazi Germany and countries under Nazi influence. "Second-class citizens" who wanted to emigrate were allowed to turn only a fraction of their property into foreign funds, and had to hand over most of the remainder to pay for the privilege. Limitation of funds to buy certain imports was used ruthlessly as a weapon to influence foreign governments.

A further development under the Nazis was bilateral "exchange clearing." Countries, such as Yugoslavia, whose exports to Germany exceeded their imports from Germany were required to put the proceeds of sales in Germany into a special "clearings fund" under German control. A stated percentage (larger than the amount previously so spent) was required to be spent on buying German goods. Part of the proceeds of sales in Germany might be used by Yugoslavia to buy goods in third countries. But

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[24] Obviously, the power to reject or scale down applications can be used to discriminate against imports of certain commodities and services, or against imports from certain countries. Reciprocally, "import quotas" for commodities can be used to limit the use of foreign exchange—but are not effective in limiting capital transfers.

[25] At about the same time, exchange control was adopted in the raw material countries of Latin America.

this use of German funds (essentially the "triangular" use of funds that Germany acquired by exporting more than she imported in trade with certain other countries) was jealously watched and limited. Even poor countries, if their dependence on German markets forced them into such "clearings," found themselves forced to lend to Germany. When German deliveries of goods to them fell behind schedule, these countries found their balance in the clearings (a debt from Germany to them) piling up. In some clearing agreements, such credits were definitely provided. During the war, this device of a clearings fund in which Germany systematically fell behind was used by the Nazis to drain the resources of occupied countries—especially Denmark and the Netherlands.

These German devices involved control not only of the foreign exchange operations of German nationals, but of funds in Germany owned by non-Germans. During the war, the United States and other allied countries were forced into similar controls. To begin with, funds belonging to Axis nationals (and hence likely to be used to buy supplies for the Nazi war machine) were "frozen." As the Nazis extended their occupation, funds of people in occupied territory (who might be forced to use them as the Nazis desired) were also frozen. This was a protection not only to the Allied cause in general but to the owners of the funds personally: it not only checked Nazi robbery, but it reduced incentives for applying various forms of barbarous pressure to make people do what the Nazis wanted. "Freezing" was also applied to neutral firms and individuals, suspected of aiding the Nazis, whose names reached the "black list."

During the war, furthermore, funds of some friendly countries were "frozen." In particular, Great Britain ran heavily into debt (for raw materials and for maintenance of troops stationed there) to India and to various Middle Eastern countries (particularly Egypt). By agreement with the governments of these countries, the proceeds of British military outlays went into "frozen sterling." Latin American suppliers of food and raw materials also accepted payment partly in this form. This fund of "frozen sterling" (amounting to over 3 billion pounds or nearly $14 billion) proved one of the great barriers to relaxation of exchange control after the war. If these funds were simply released, the great bulk

would be converted at once into dollars—more than absorbing the proceeds of the British loan of 1946 from the United States, and greatly increasing the pressure on scarce American export goods. But the creditors were understandably reluctant about canceling a slice of the debt; and agreement for releasing a fraction and turning the rest into long-term debt proved hard to reach. The fiasco of the relaxation of British exchange control in the summer of 1947 went back largely to this problem—and to pessimism over the future of the pound with this problem unsolved.

Foreign Exchange and Economic Warfare. The 1930's were years of "economic warfare." This struggle was not merely one of the Nazis against the democratic powers, but a struggle in which "every man's hand was against every other." The weakening of Western Europe—and of solidarity among the western powers—which created Hitler's opportunity was largely traceable to this struggle.

In this economic warfare, foreign exchange was a key weapon; although other weapons (especially tariffs [26] and "import quotas") played a part. To begin with, "devaluation"—that is, deliberate boosting of the prices of foreign currencies—was used in the depression as a means of "exporting unemployment." A country which devaluated (unless it raised money wages and other cost prices in proportion to the prices of foreign currencies) was lowering the money costs of its products relative to products of other countries. The result was that domestic products would displace some imports, and that the country's exports would increase and displace products of other countries on the markets of those countries (and of third countries). Beyond the direct increase of employment in export industries (and in industries competing with imports), the devaluing country made further gains. It was able to lower interest rates without having to worry about its gold reserves. Besides, Keynesian monetary theory shows [27] that by having a larger export balance on trade account it was able to absorb more savings, and, thus, its equilibrium level of income was raised. (This last point, however, was not a motive for the devaluations of the 1930's, since Keynesian doctrines were not

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[26] The American Smoot-Hawley tariff of 1930 was a notable event in the early stages of this economic warfare.

[27] See Chapter VII.

officially accepted in any of the countries at the time.[28]) Conversely, devaluation in one country meant reduced exports and more competitive pressure from imports in other countries, and put those countries under pressure to maintain high interest rates. Thus devaluation tended to shift unemployment away from the devaluing country to other countries.

The devaluation phase of economic warfare may be said to have started *before* the Great Depression. The French franc was restored to a gold basis in 1926, at a parity which proved to be an "undervaluation" relative to the pound and the dollar. The stimulating effect on French exports and import-competing industries was so strong that France remained comparatively prosperous through the beginning of the Great Depression, and did not begin to have serious unemployment until late in 1930. The early-depression devaluations of Latin American currencies probably served chiefly to limit the price declines of their raw-material export commodities in their own currencies and thus to prevent the total bankruptcy of planters and to check wage reductions; their effect in "exporting unemployment" must have been very small. But the devaluation of the pound in 1931, of the Japanese yen and the American dollar in 1933, and of the "gold bloc" currencies later on put rather serious strains on competing countries.

Even more serious than devaluation, as a contribution to economic warfare, were measures taken to avoid or postpone devaluation. Most of the Continental European countries had been through disastrous inflations in the 1920's, and their governments feared the effects on their inflation-conscious populations of an official announcement that their currencies had reduced values relative to gold or to major foreign currencies. Exchange control and import rationing were adopted to cut down the demand for foreign currencies to what the forthcoming supply of foreign funds could satisfy, at prices in line with established gold parities.

Unfortunately, these measures affected the trade-account balance of the country which used them only by cutting down imports—not by stimulating exports. Thus, the spread of such devices cut down the flow of trade between countries. Protec-

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[28] Keynes's view, dating from the middle 1920's, that the pound was "overvalued" and that devaluation would help the chronic depression in British export industries (such as cotton textiles and coal) was widely known and widely accepted in Great Britain, however, even though his newer doctrines were not.

tionist interests which wanted to cut particular imports so as to reduce competition in their industries naturally seized upon these devices. Each such measure by one country invited retaliation by the country whose exports suffered. Attempts to limit the struggle led to a series of negotiations between pairs of countries; and resulting bilateral agreements, while softening conflicts between the countries directly involved, often opened up new conflicts with third parties.

Need for Economic Disarmament. These processes of economic warfare in the 1930's were costly both in impeding economic welfare and in causing political friction between countries. The end of World War II did not automatically eliminate them. True, Nazi Germany and Japan had been aggressive in economic warfare as well as otherwise. But their downfall did not end the temptation to set trade and currency restrictions—nor even the temptation to use these restrictions as political and economic weapons.

The need for economic disarmament underlies the whole series of international agreements on currency and trade in which the United States was the leader during and just after the war. The first of these agreements was that at Bretton Woods (1944), creating the International Monetary Fund and the International Bank for Reconstruction and Development. The agreements woven around these institutions were a start toward economic disarmament. Detailed discussion has to be adjourned to Chapter XVIII.

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Note on Alternative Points of View and Supplementary Readings

The machinery of foreign exchange still tends to be described in textbooks in terms of prewar (or at least interwar) gold arrangements. For a workmanlike and detailed account along these lines, see R. B. Westerfield, *Money, Credit and Banking* (New York: Ronald Press, 1938), Chapters 24–26.

The account given here rests very largely on the analysis of my colleague, Ragnar Nurkse, as published in *International Currency Experience* (League of Nations, 1944). The record of changes in exchange rates appears in convenient graphical form in *Federal Reserve Charts on Bank Credit, Money Rates and Business,* and in tabular form in Federal Reserve Board, *Banking and Monetary Statistics* (Washington, 1943, pp. 662 ff.). Annals of gold reserves in various countries are in *ibid.,* pp. 544 ff.

— *Chapter XVI* —

THE INTERNATIONAL ROLE OF GOLD

The Gold Tradition. Tradition thinks of gold as the historical metallic money of the world, and of the "gold standard" as a system of simple "rules," by following which economic health could be preserved.

As history, this statement of the case is considerably oversimplified. Silver rather than gold was the chief money metal of the world through most of human history. As I remarked in the Introduction, the older moneys have names *(pound, mark)* which refer to units of weight; the weight referred to was a weight of silver. The longest-standing names for coins *(shilling, crown, florin, dollar)* apply traditionally to silver coins. The most venerable names for gold coins *(guinea, sovereign)* both date only from the eighteenth century—and both, please note, are English.

Actually, through most of history there have been both gold and silver moneys, but without a fixed parity. Most countries which arrived at the use of gold as standard money did so by passing through a bimetallic phase (with both gold and silver at a fixed parity) and then gradually reducing silver to a subsidiary place.

The period when the world came nearest to a universal gold standard was only from 1879 (when the United States "resumed redemption" of its paper money after the Civil War) until 1914 (when World War I broke up the standard). Then there was a phase of interwar resumption, 1925–1931. But of the last 100 years, there were only about 40 when the gold standard was in operation (by any stretch of the term) in Britain, the United States, Germany, and France simultaneously. China remained on a silver standard throughout, until forced onto a "paper standard" in the 1930's.

At the same time, the gold tradition must not be underrated. The mere existence of the tradition is an important fact in itself; the tradition is an undertone in most conservative views on money questions, and must be taken into account in explaining people's attitudes. Furthermore, the errors of the tradition are only errors of oversimplification. Gold has been linked with money in man's thinking throughout the 3000 years or so that man has had monetary institutions; and most of the time, people have felt that gold was (to borrow a German term) the most "noble" of the metals. During the long period in the eighteenth and nineteenth centuries when London was the unchallenged financial capital of the world, Great Britain was always officially on the gold standard (although it was sometimes "suspended" for a term, as during the Napoleonic period); so that the gold standard came to be thought of as the proper arrangement for economically advanced countries, and other systems to be considered makeshifts for colonial or backward areas. During periods of financial disturbance, people who managed to hang onto gold coins have often scored important advantages over people who fell in with other monetary arrangements. It is only since World War I that gold has ceased to be an important asset on the balance sheets of conservative business houses and private families.

The more dangerous side of the gold tradition is probably the image of the gold standard as a foolproof system of rules for economic policy. Historically, the record of the gold standard is not too bright. During the heyday of the gold standard, we enjoyed the great depression of the 1890's (when the downward drag upon prices was quite reasonably interpreted as the result of the gold stock's growing too slowly to match the growth of population and production). We had the rather serious creeping inflation of 1899–1913; we had the "financial crises" of 1883, 1893, 1904, and 1907. During the period of attempted restoration (1925–1931), we witnessed serious chronic unemployment in Great Britain and in Germany, the American stock-market boom and crash of the 1920's, and the recession beginning in 1929—which, by the time the international gold-standard arrangements broke down in 1931, had produced mass unemployment in every major country. On the record, the gold standard did not prevent prosperities from collapsing. Study of the annals will show also

that it did not prevent the adoption in recession of policies which were calculated to make a bad matter worse.[1]

Working of the Gold Standard. A gold standard, in the inspired definition of D. H. Robertson, is an arrangement whereby the value of a monetary unit and the value of a defined weight of gold are kept at an equality.[2] As I pointed out in the last chapter, this equality has been managed by a standing offer to buy and sell gold at a stated price; among countries which were on this basis, there has been an "international gold standard."

Under this sort of arrangement, if other items in the balance of payments fell out of equilibrium, gold had to move. For example, if a crop failure increased a country's food imports and there was neither a drop in that country's other imports nor a rise in its exports, that country was bound to lose gold.

Gold-standard arrangements did now and then break down because a country ran out of gold (or because its authorities feared that it would run out of it, and therefore acted as if it already had). But, for the long period 1879–1914, several major countries were on a gold standard, and none of them was forced to suspend gold payments Was this merely an accident, or was there something about the gold standard itself which guaranteed its members against running out of gold reserves?

It is easy to show that the gold standard did have "automatic" adjustment mechanisms which tended to reverse a gold flow. When gold left a country, the country's stock of domestic cash assets was reduced—both directly and indirectly. The loss of gold showed that nationals of the country were losing cash to outsiders through the flow of trade (and that the outsiders were transferring their funds home rather than keeping them in that coun-

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[1] In a broader view of history, a plausible case can be made out that the gold standard was a stabilizer of international *politics*. See K. M. Polanyi, *The Great Transformation* (New York: Rinehart, 1944), Chapter I, where it is argued that the gold standard made a decisive contribution to the long period of peace before 1914. Polanyi's contention is that several threats of war were staved off because "international high finance" persuaded governments that they could not afford measures that would break down the standard.

[2] D. H. Robertson, *Money* (New York: Harcourt, Brace, 1929), p. 69. As Robertson points out, this definition is framed "with a certain low cunning." It avoids committing us on the question (which, after all, is a question of fact and not of definition) whether money gets its value from gold or gold gets its value from money. The definition is so framed as to cover both gold prices fixed by law and gold prices fixed by discretionary administrative decisions.

try). Thus there was a direct reduction in cash. In addition, gold exports reduced bank reserves, and thus indirectly set up a domestic credit contraction which reduced cash further. Shrinkage of the stock of cash tended to deflate prices and wages in the country losing gold; while growth of the stock of cash tended to inflate prices and wages in the country gaining gold. The result was a relative shift in costs of production of internationally traded goods in favor of the country losing gold, which would expand that country's exports and reduce its imports, and thus shift its balance of payments so as to stop and reverse the gold flow. In addition, the drop of the country's exchange rate to its gold export point, together with the rise of interest rates as bank reserves were pinched, would make it profitable for bankers of all countries to keep short-term loan funds in the country losing gold—a factor which would keep the gold loss from going to extremes so long as "confidence" in that country's currency stood up.

The trouble with this "classical" explanation of adjustment under the gold standard, as R. Nurkse points out,[3] is that it proves too much. Correction via price-wage deflation in the country losing gold and price-wage inflation in the country gaining gold obviously called for a good deal of time; but, on the record, periods of gold exports rarely exceeded a few months, except for countries which were large gold producers. The main answer seems to lie in the effects of the trade-account balance on income and employment. On Keynesian grounds, a shift of foreign trade in the direction of more imports and less exports (a "less favorable balance of trade") would reduce a country's ability to absorb savings, and thus would necessitate a lowering of the level of employment and income. But the reduction of expenditure as income fell would naturally include expenditure on imported goods and services; so that a slump in income could quite quickly bring the trade-account balance to a point where it would not reduce the gold stock further, so long as income stayed down. Recovery of income must then await an expansion of income abroad or price adjustments which permitted an expansion of exports.

To combine ready adjustment under the gold standard with

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[3] League of Nations, *International Currency Experience*, Geneva, 1944, pp. 98–105.

reasonably full employment would obviously require a good deal of "price flexibility"—unless the international drift of prices was upward, so that countries gaining gold could make most of the adjustment through price increases. On the record, unemployment was serious in several countries during the part of the 1879–1914 gold-standard period when prices had a downward drift, but not so serious during the 1899–1913 price increase. This comparison suggests that prices were already so rigid that only upward adjustments could go smoothly. Certainly this would be the case if any effort were made to re-establish the gold standard under postwar pricing practices.

Gold in 1919–1931: Gold Exchange Standards. Between the two World Wars, gold had a rather stormy history. In the early 1920's, re-establishing the international gold standard was a main concern of the monetary authorities in all the major countries. In the late 1920's (after Great Britain renewed gold payments at the prewar parity in 1925, and France at a lowered parity in 1926), it seemed that the re-establishment had taken hold. Disillusion came in 1931; and by 1936 gold-standard arrangements had been upset everywhere.

In the efforts at re-establishment early in the 1920's, the great problem was to restore working reserves of gold in countries where they were lacking. To restore gold reserves involved two difficulties: (1) A number of the countries involved were relatively impoverished. To build up an adequate reserve by developing an excess of exports on trade account, or by borrowing in New York or London, seemed beyond their means. (2) If the gold reserves set up were to bear traditional ratios to bank notes and deposits, there was not going to be enough gold to go around—at least, unless the United States parted with a larger share of its heavy gold reserves than there was any reason to expect. The experts feared that an international "scramble for gold" would result in "tight money" and deflationary pressure on prices and business activity all over the world. This foreboding was not idle, as we shall see in a moment.

The remedy adopted was a systematic effort to "economize gold." In the first place, few countries returned to the prewar system of having large-denomination gold coins in the hands of the public or in commercial bank reserves; gold was concentrated

in the hands of central banks.[4] In the second place, there was widespread use of the "gold exchange standard," under which funds in a gold-attached currency (commonly London funds or New York funds) counted as reserves for central banks.[5] Since these London or New York funds could be put in safe income-yielding form (in short-term Treasury securities, or in acceptances), poor countries did not find such reserves beyond their means; interest on reserve funds could offset interest on foreign debt.

Breakdown of Interwar Gold Arrangements. The gold exchange standard, of course, was not a sure safeguard against a "scramble for gold." If countries with reserve funds in London or New York started to bring them home in gold, they could bring about a crash. The monetary policy of France went far to realize this fear. When the franc was stabilized late in 1926, the Bank of France had its reserves partly in gold and partly in foreign exchange. Beginning in 1928, the Bank was required by law to take all the *increase* of its reserves in gold and to cease to build up its foreign exchange holdings. Because of the "undervaluation" of the franc, French reserves mounted rapidly, so that other European countries experienced a serious drain of gold.[6] Finally, in

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[4] The United States, which had a wide margin of gold over requirements, was less "economical." There was some circulation of gold coin (especially in California, where the habit of carrying gold survived from gold-rush days). Moreover, the Treasury continued, as in prewar days, to issue "gold certificates"—a special type of paper money which was in form a warehouse certificate for gold coin. These were printed as "yellow-backs," with one side gold-colored. In the late 1920's, however, when the number of square inches of paper per bill was reduced, the new gold certificates had green backs like other money, which reduced the special emphasis on their peculiarities.

These gold certificates in circulation constituted a "hidden reserve" for the Federal Reserve. By hanging onto such bills when they came in from circulation and issuing Federal Reserve Notes when more paper money was wanted, the Reserve Banks could build up their reserve ratio.

It is characteristic of the change in monetary policy in the 1930's that, when the United States devaluated in 1933, the holders of gold certificates gained no special advantage. They were required (like holders of gold coin) to turn in their holdings and take ordinary paper money dollar for dollar.

[5] A gold exchange standard operated successfully for India before World War I and similar arrangements had existed elsewhere; the difference in the interwar period was its wider use.

[6] From the level of $0.7 billion, at which French gold reserves stood from 1919 through 1926, they climbed steadily to $1.3 billion at the end of 1928, to $1.6 billion at the end of 1929, to $2.1 billion at the end of 1930. Gold reserves of *all* central banks and governments outside the United States and France declined from $5.1 billion at the end of 1928 to $4.6 billion at the end of 1930, despite a rise of $0.9 billion in world stocks. The United States absorbed $0.5 billion; France,

the summer of 1931, France and other countries withdrew funds from London in gold for fear of a suspension of gold payments in Great Britain—thus making unavoidable the event they feared.

The result of the break was a split of the countries of the world into two main monetary groups—a few countries splintering off and going separate ways. One group, consisting of countries which had operated gold exchange standards based on London funds and which had strong ties with Great Britain, continued to use London funds as reserves despite the lapse of gold payments, and became the "sterling area." [7] Another group (the United States and the European "gold bloc" countries of France, the Netherlands, Belgium, and Switzerland) tried to go on operating a gold standard with gold reserves held at home. The "splinters" included the fascist countries, countries in the Balkans which Germany was able to dominate, Japan, and countries which had been outsiders in the arrangements of the 1920's (notably Russia and China).

The prestige of gold as well as the prestige of sterling was shaken when Great Britain went off the gold standard in 1931. In the end, gold suffered more than sterling from the parting. Great Britain and most of the "sterling area" enjoyed an upturn of business in 1932; while the countries which adhered to gold (including the United States) continued to lose ground economically until 1933. The last countries to maintain their predepression gold parities (the European "gold bloc") suffered serious unemployment and periodic monetary upsets for several years after 1932, while British recovery was progressing.

The prestige of gold standard "rules" also sagged. Every country of any importance went through at least one phase during the 1930's of being led by those rules into suicidal policies. Each country was forced at some stage to raise interest rates and con-

$0.8 billion. For figures, see Federal Reserve Board, *Banking and Monetary Statistics* (Washington, 1943), pp. 544–545.

[7] These countries then had "sterling exchange" standards. They included the British dominions (except Canada), Portugal, and the Scandinavian countries. A number of Latin American countries, after steering an independent course for a while, attached their currencies to sterling.

It is fascinating to see how in this grouping the British monetary authorities came into the position of a "super-central bank" toward the rest of the sterling area. The analysis lays itself out naturally in terms of the "center" (Great Britain) and the "member countries." See R. Nurkse's fascinating chapter on the sterling area, *International Currency Experience*, pp. 47–65.

tract bank credit in the midst of depression—thus manifestly making the depression worse. Almost every country found the going easier once it had dropped gold or raised its official gold price.[8]

Causes of the Breakdown. Why did not the move to reestablish the gold standard after 1925 succeed? One factor was the scarcity of gold referred to above—or (to say the same thing differently) the fact that paper money and bank deposits were a much larger multiple of the stock of gold than they were before World War I. This scarcity of gold might conceivably have been cured by a markup of the price of gold, so that an ounce of gold would correspond to more dollars, pounds, francs, and so forth. But this alternative was never considered in the United States and was rejected in Great Britain. Thus, it became necessary to "economize gold" and take the risks of the gold exchange standard.

Another factor was "maldistribution of gold." The United States (and, at a crucial stage, France) had such a large share of the gold that the residue was inadequate for other countries. In 1913, the United States had held rather under a quarter of the world's central gold reserves; in 1923 we held around 45 per cent; in 1928 (when most other countries were back on gold), about 37 per cent; in 1933, about 35 per cent.[9] The conviction grew up that gold had such a strong drift toward the United States as to make any form of gold standard unworkable.

This drift toward the United States [10] was blamed by many analysts (both European and American) on "America's refusal to accept her creditor position." Prior to World War I, when we were paying interest and installments of principal on foreign capital invested in our railways and other productive enterprises, it was "natural" for us to have an export balance on trade account. World War I was financed largely by Europeans' reselling to Americans the American securities held in Europe, and by Amer-

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[8] The major exception was France, where the price level started rising again at about the time that the franc was devalued, and a series of further devaluations followed.

[9] Going beyond the period that I am discussing at the moment, the United States had over half of the visible gold stocks (figures for some countries are incomplete) in 1938, and well toward three-fourths in 1947.

[10] The drift toward France, in the period 1927–1932, was interpreted in terms of "undervaluation of the franc" when the new par of exchange was set in 1926. The renewed drift toward the United States beginning in 1934 was also linked with undervaluation—this time, of the dollar.

ican loans to European governments. With the balance of property income and of repayment on outstanding loans thus reversed, it would have been "natural" for us to develop an import balance on trade account. But the United States kept on having an export surplus. We were not prepared to adapt ourselves by making it easier for imports to come in; on the contrary, we raised tariffs in 1922 as well as in 1930. We were prepared to buy foreign securities, but not on a large enough scale to close the gap, and not as a steady practice. Thus, gold imports were called in as a balancing item.

There is a good deal of sense to this way of looking at things; but still it is one-sided. Another point of view which also makes sense is that foreign countries could have cut down their imports from us had they really set much store by gold. But our willingness to absorb gold gave them the option of getting goods from us if they would give up gold. Our gold imports represent the preference (not directly expressed, but very real) of the rest of the world for goods over gold. Such a preference, if strong enough, can also make a gold standard unworkable; for it leads to paring down gold reserves to a minimum, so that a short run of bad luck can exhaust them.[11]

American Devaluation, 1933–1934. After Great Britain went off the gold standard in September, 1931, the deflation already in process in this country rapidly grew worse.[12] The slump finally reached bottom only in the banking crisis of early 1933. One

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[11] It is for this reason that countries in a colonial stage of development so rarely maintain "sound currencies" unless forced to do so by strong home governments. In American economic history, we read of complaints about the lack of "hard money" in the Colonies throughout the colonial period. This lack reflected the simple fact that anybody who happened to get some "hard money" could always think of some useful thing—a cow, a ship, a stock of merchandise—that he would rather have. Every business felt itself starved for capital; liquidity was thought a luxury; and, when anybody got into trouble through lack of liquidity, he would be backed by the sentiment of his neighbors and the influence of the colonial legislature. The same phenomenon may be traced in the attitude of "backwoods" toward "tidewater" soon after the Revolution, in the "wildcat banking" of the nineteenth-century frontier (cf. Chapter I), and in the monetary history of other frontier countries (for instance, in Latin America).

An industrial country impoverished by a war is likely to have an analogous sense of being starved for capital—both consumption and capital equipment being far below the standards to which its citizens aspire.

[12] See pp. 317–318.

of the features of this crisis was hoarding of gold and gold certificates.

An early act of the new administration was to get gold out of hoarding. The Emergency Banking Act of 1933 (passed on March 9) empowered the President to "regulate or prohibit" transactions in gold or foreign exchange and the hoarding of gold. An executive order of April 5 required holders (including commercial banks) to exchange their gold or gold certificates for other cash at a Federal Reserve Bank, and required licenses for gold exports. On April 18, applications for export licenses began to be refused, and an executive order of April 20 put an embargo on gold exports. The value of the dollar in terms of "gold bloc" currencies began to fall on April 18. For several months, exchange rates were left to be determined by the market—that is to say, by the consensus of speculative opinion as to what the government might do later. The dollar dropped rapidly to about 85 per cent of parity in May, settled there briefly, and then dropped again, to 70 per cent, in July.

Meanwhile the President's powers were enlarged by fresh legislation. The "Thomas Amendment" to the Agricultural Adjustment Act of 1933 authorized the President "to fix the weight of the gold dollar . . . at such amounts as he finds necessary from his investigation to stabilize domestic prices or to protect the foreign commerce against the adverse effect of depreciated foreign currencies" so long as the weight of the dollar was not reduced by more than half. Another piece of gold legislation (June 5, 1933) was a Congressional joint resolution that debt contracts calling for payment in "gold dollars" should be treated as calling simply for dollars.

Beginning in September 1933, there began again to be an official gold price, corresponding to the pre-1933 price of $20.67 per ounce. But, instead of being permanent, the new prices were fixed "on a 24-hour basis." Starting at $29.62 an ounce on September 8, they fluctuated for several weeks with foreign exchange rates. At this stage, the object of quoting the price was to give American gold-mining concerns as good a price as they could have obtained by export in the absence of the export embargo. But beginning with October 25, the price was deliberately raised above the foreign price of gold; and, from this point on, all the

changes were increases. Foreign as well as domestic gold was bought beginning November 1. The official price was set at $31.36 on October 25, and was raised by 21 successive jumps to $34.01 on December 1. On December 18 it was marked up to $34.06, and on January 16, 1934, to $34.45. Effective February 1, a price of $35.00 was set, under authority of the Gold Reserve Act of 1934 (enacted January 30).[13] This price (corresponding to about 59 per cent of the old parity) was still not described as permanent, and the new act authorized the President to vary the gold content of the dollar between 50 per cent and 60 per cent of the old parity—giving a range of possible gold prices of from $34.45 to $41.34. But, actually, no further changes were made.

This gold policy was apparently based on the theory (implied in the language of the Thomas Amendment) that raising the price of gold would produce a proportionate rise in commodity prices.[14] I have already paid my respects to the "commodity theory of money" in Chapter V, and to the merits of price-raising as a recovery technique in Chapter XII, and there is no need to repeat the discussion. Broadly speaking, the policy failed as a method of raising prices in the United States. Except for a few commodities with important world markets (notably wheat and cotton), most of the price increases of the period must be ascribed to the cost-boosting procedures of NRA, the crop restrictions of AAA, and the effect of a rising national income.

Paradoxically, however, the effort to use gold as a fulcrum for the domestic price level succeeded in prying loose most of the connections between gold and the ordinary course of business which had made it seem that gold was directly connected with prices. The anti-hoarding regulations removed gold from the cash boxes of firms and households and even of commercial banks. (The Gold Reserve Act of 1934 even went further and prohibited direct gold ownership by Federal Reserve Banks.) The anti-gold clause resolution of June 1933 (backed by court decisions) rooted

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[13] The foreign exchange market reflected varying guesses as to the outcome of the process. In mid-November, briefly, it correctly forecast an eventual value of 59 per cent of the old parity; but through December and January it was more "bullish" and held the dollar over 60 per cent of parity.

[14] See G. F. Warren and F. A. Pearson, *Prices* (New York: Wiley, 1933). The views of Professor Warren were apparently very influential in shaping the gold policy.

out whatever hold on business accounting gold might have retained.

Most important of all, our devaluation upset the remaining gold-standard countries. Such effect in raising prices and stimulating activity as the devaluation really had depended on the existence of a demand for our goods in the "gold bloc" countries, expressed in currencies with predepression gold parities. Reducing the dollar to 59 per cent of the old parity left it badly "undervalued" relative to the French, Belgian, Dutch, and Swiss currencies. Despite the rise in our national income (which ordinarily would expand imports relative to exports), our exports outgrew our imports from 1933 to 1934. Moreover, the American devaluation, coming after the depreciation of the pound, made it very probable that the "gold bloc" countries must soon devaluate their currencies in turn. Gold began to flow to the United States and out of countries which tried to keep their old gold prices. By the end of 1936, the last predepression gold price had been surrendered.

The Tripartite Agreement—1936–1939. With the United States gold price settled, other currencies gradually aligned themselves with our dollar. From early 1934 onward, the British stabilization fund held the pound-dollar rate in the neighborhood of $5.00; monthly averages during 1934–1937 ranged from $4.77 to $5.15 per pound sterling. The other sterling-area countries were thus brought into line, too; although in many cases they had settled their rates with sterling below predepression parity and thus were below prewar rates as compared with our dollar.[15] Canada, whose dollar had fallen relative to ours in 1931–1932 (but less than in proportion to the British pound), came back to a dollar-for-dollar exchange rate.

When the "gold bloc" countries gave up the struggle to maintain their overvalued currencies, they also aligned themselves. The "belga," which before our devaluation was worth about 14 cents, was above 23 cents during the tension period of 1934; but when Belgium devalued in April 1945 (the first of the "gold bloc" countries to surrender), it dropped slightly below 17 cents.

The French devaluation in October 1936 was the occasion for

[15] For example, the New Zealand pound averaged about $4.00 from 1934 onward.

a "tripartite" (Anglo-French-United States) agreement over foreign exchange. No definite parities were fixed; but it was agreed to consult on future depreciation moves and to avoid "competitive" depreciation, and also to use stabilization funds to smooth the course of exchange rates. Other countries (notably the Netherlands, Belgium, Switzerland, Italy, and Brazil) adhered to the agreement. It proved elastic enough to handle further devaluations of the French currency when it proved impossible to hold down the French price level, and to absorb a sagging off of the British pound to a discount between the events at Munich (September 1938) and the outbreak of war.

Under this arrangement gold continued to flow into the United States. But the drain on gold reserves elsewhere was arrested. What made the situation workable was a sharp rise in the dollar value of gold production—especially in Canada and South Africa. The number of ounces produced outside the United States was 56 per cent greater in 1939 than in 1932. With the price of gold up nearly 70 per cent, this was a large enough output to ease the gold position. Moreover, the shadow of oncoming war made it more important to buy goods being made in the United States.

By the time that war broke out, the place of gold reserves was much what we may expect it to be in the postwar period: for countries other than the United States, a stock of gold (or its postwar equivalent—the right to draw on the International Monetary Fund for United States currency) is a reserve of purchasing power which can be spent in the United States. Whether to use this reserve to buy American goods or to save it is a real issue, in view of the outside world's acute need of goods. Allowing the reserve to run too low creates a risk of being unable to meet later emergencies and as a sign of weakness may affect "confidence" in the country involved. But only the United States is wealthy enough to feel unconditionally committed to keeping substantial gold reserves through any foreseeable events.

Gold as a Psychological Phenomenon. As time goes on, gold comes to be more and more strictly a psychological phenomenon. A century ago, if some ingenious wizard had managed to transmute all the gold in the world into lead, millions of people would have noticed it the next time they looked into their cash drawers. Today if the same piece of black magic could be managed, only a

few hundred people need conspire to keep the secret, and everything could go on as usual. For gold coin has ceased to be part of individual cash holdings, and even of commercial banking. It is something we read about, but not something we experience.

The fact raises all sorts of disquieting thoughts. How much sense does it make to employ thousands of men to dig gold out of the earth in South Africa and sub-arctic Canada just in order to bury it again at Fort Knox, Kentucky? Once it is determined that there really is gold underground, couldn't we "use" it just as well where it lies as in another part of the world's subsoil? Why can't we agree to pretend that the miners and smelters have done their work, pay them their wages, and let them go fishing? In fact, why do we have to insist on proof that the gold exists? Why can't the world agree on the probable rate of discovery in various countries and send the prospectors on a holiday as well as the miners? Certainly there is cause for suspicion that we are going through the motions of operating a gold system that has somehow lost its substance.

Although gold is merely "psychological," as such it has a great deal of economic importance. It is still one of the great symbols of stability in the economy. Even Hitler in his proclaimed omnipotence did not find it prudent to announce his scorn for the gold standard until the war was already under way; the Nazis went to all sorts of subterfuges to avoid letting the German public see how far they had come from a gold-based currency. Legal ties between central-bank gold holdings and the monetary system survive in most countries; and any attempt to remove them might lead to a great outcry and to shake "confidence." (It is noteworthy, however, that the *reduction* of the required gold-certificate reserve of the Federal Reserve Banks in 1946 from 40 per cent to 25 per cent of notes outstanding barely raised a ripple.) American public opinion, as a whole, does not question that we are making a good bargain when we exchange food, fuel, shipping services, and so forth, for gold.

In the United States, sentimental attachment for the gold standard is still strong in conservative circles. Newspaper editorials seriously attacked the Bretton Woods monetary agreements on the ground that they were not setting up an international gold standard and that nothing else would do. This attachment, on

the other hand, has largely evaporated in Britain. At a time when the majority in Parliament was Conservative, Lord Keynes had to reassure Parliament that the Bretton Woods agreements were *not* the gold standard—for the gold standard was not acceptable. The difference in attitudes traces back, of course, to interwar experience. Looking at the gold standard as a game, one's feeling is that the United States won it.[16] Maybe it shouldn't have been played as a game; maybe it is bad sportsmanship to remember having won; but the memory is not actively unpleasant. On the other hand, the British remember the gold standard as a game at which they used to be champions, but at which they lost painfully under interwar rules.

Gold as a Source of Income. Perhaps the most important fact about gold at the present time is its unique role as an American import. It is one of the few classes of imports against which we levy no tariff—and presumably never will.[17] Furthermore, it has a guaranteed price of $35.00 an ounce, supported by the United States Treasury. At this price it is worth the while of the outside world—especially South Africa, Canada, and Russia—to produce large quantities for the American market. Just before World War II, gold production (not counting that of Russia, for lack of statistics, or that of the United States) was about $800 million yearly; in 1946, it was about $600 million. Net gold imports of the United States *exceeded* outside gold production for several years before the war; gold imports *equal* to the output would be a considerable contribution to the supply of dollars available to foreign countries.[18]

As the currents of trade set, the American gold market is of

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[16] One of the most telling (because one of the least untruthful) of the Nazi propaganda darts at the United States was a remark that there was no use trying to carry on international trade by gold standard rules, because the United States went off with all the marbles.

[17] American gold producers are not above asking special favors. But a tariff duty on gold would scarcely be in their interest. Public opinion would not be any more inclined to back a rise in the official gold price accompanied by a tariff duty than the same rise without it. Thus, unlike most producers of goods which are also imported, the gold-mining interests could not expect to raise their selling prices through the enactment of a tariff. Actually, to discourage gold imports in this way would probably conflict with gold-mining interests. For such a tariff could scarcely be brought to enactment without a discussion of the usefulness of gold, which might prove embarrassing.

[18] For comparison, 1946 merchandise imports of the United States were valued at about $5 billion.

great value not only to South Africa and Canada, but to Britain and the "sterling area." South Africa has been a member of this area, and has bought its supplies of industrial products largely in Great Britain, settling its import balance on trade account by gold shipments. Thus, the sterling area in general and Great Britain in particular have been able to finance an import balance with "hard currency" countries—above all, with the United States. The position of Canada is intermediate between the sterling area and the dollar area. In many British calculations, Canada ranks as a "hard currency" country; and if the American dollar becomes "scarce" by declaration of the International Monetary Fund, the same is apt to hold for the Canadian dollar. But Canada's willingness to grant favored tariff treatment to British goods—and, even more, Canada's generous gifts to Great Britain during and after the war—have enabled Great Britain to profit from the strength of the Canadian dollar.

From the standpoint of rational economic calculation, it might seem that the time was ripe for discouraging the production and importation of gold as useless. But we seem to be in a period when the economic situation abroad and world politics make it good business for the United States to help our friends abroad get dollars—and many of those friends are in the sterling area. By accident rather than by design, our gold arrangements have drifted into a form which an economist must objectively describe as a subsidy to the sterling area (plus a subsidy to Russia which goes into a rather different political category!). Problems of accounting for this subsidy are already solved—however arbitrarily. Looking at economic policy as a whole, therefore, the present seems to be a "bad time to rock the boat" so far as willingness to absorb gold imports is concerned.

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Note on Alternative Points of View and Supplementary Readings

Many economists are still inclined to regard gold as much more fundamental to the monetary structure than I have pictured it in this book. For a clear example, see R. B. Westerfield, *Money, Credit and Banking* (New York: Ronald, 1938), Chapters 2–5, 40, and 44.

The role of gold in the interwar period is given an illuminating discussion by R. Nurkse (*International Currency Experience,* League

of Nations, 1944)—especially Chapter II on the gold exchange standard. See also W. A. Brown, Jr., *The International Gold Standard Reinterpreted* (2 vols., New York: National Bureau of Economic Research, 1940).

The tradition in economics out of which my rather skeptical position on gold has grown is well exemplified in D. H. Robertson, *Money* (new ed. rev., New York: Harcourt, Brace, 1929), Chapter IV. I have been strongly influenced in this matter also by J. M. Keynes, *Treatise on Money* (2 vols., New York: Harcourt, Brace, 1930), vol. II, pp. 289–332; and *General Theory of Employment, Interest and Money* (New York: Harcourt, Brace, 1936), pp. 128–131.

— *Chapter XVII* —

MONEY AND THE INTERNATIONAL SPREAD OF FLUCTUATIONS

Monetary Interdependence. Upswings and downswings in employment, production, and prices are not ordinarily confined to one country, but cross frontiers. The business curves of different countries are not by any means strictly parallel—a fact which testifies to the importance of strictly national events in fluctuations. But there is enough similarity among their business fluctuations to testify that some of the forces generating them affect many countries at once. As will appear presently, it looks as if many of these generating forces are "made in U.S.A."

The tradition of monetary policy has centered around "maintaining external equilibrium." [1] The "orthodox" methods for maintaining such equilibrium have implied *accepting* fluctuations set up abroad. This implication is in conflict with the goal of domestic stability at full employment. If a conflict cannot be avoided, most present-day economists would probably prefer domestic stability. But are there not other ways to maintain external equilibrium and domestic stability simultaneously?

This chapter is devoted chiefly to possible ways to avoid or soften this conflict of objectives. By way of preliminary, it sketches the theory of "international propagation" of disturbances, and the reasons for paying special attention to the United States in this process. The character of the conflict is then analyzed, and possibilities for avoiding it by flexible exchange rates and by exchange control are examined. Finally comes the

[1] A formal definition of the term is best postponed until page 395 of this chapter, where the conflict of external and domestic equilibrium is examined more closely.

question how far a country can "offset" fluctuations arising outside and ride out the period of external disequilibrium by using its international reserves. This leads over into the problem of Chapter XVIII—international co-operation.

"International Propagation" of Disturbances. The way in which one country's slumps in employment or booms in prices may infect other countries has already been mentioned in connection with the development of exchange control and again in connection with the defects of the gold standard. Every country has some products which depend on foreign markets. A downswing abroad involves some loss of foreign markets—and also some loss of domestic markets to imports which are offered with more urgency because other markets of foreign producers have weakened. The country is pushed toward a larger import balance on trade account. There is thus a primary loss of employment in the production of internationally traded goods. A secondary loss (likely to be a good deal larger) follows from the fact that this shift in the trade balance reduces the country's ability to absorb savings. This result lowers the level of national income at which an equilibrium can be struck. In addition, this sort of foreign trade situation is likely to pull reserves out from under the banking system, creating a likelihood of deflationary pressure from the side of banking.

This mechanism for the spread of fluctuations from country to country is not so rigid as to make the curves of activity and prices uniform. To illustrate, the 1929 peak in the United States represented substantially full employment; whereas the next high point (1936–1937) was a "submerged peak" with considerable unemployment. In Great Britain, however, the 1937 peak came about as close to full employment as did that of 1929.[2]

Business annals for the prewar period covering the United States, England, France, Germany, and Austria show a peak in all five countries in 1872–1873, depression in 1874–1877, a peak in 1881–1882, depression in 1884–1885, a peak in 1889–1890, a peak

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[2] Sir William Beveridge, in *Full Employment in a Free Society* (New York: Norton, 1945), p. 111, shows that 1.25 million were unemployed in Great Britain in 1929, and 1.56 million in 1937. The percentage of workers unemployed (*ibid.*, p. 47) was 10.4 per cent in 1929 and 10.8 per cent in 1937. In the United States, according to B.L.S. estimates, 1929 unemployment was under 3 per cent; 1937, about 13 per cent.

in 1899–1900, a peak in 1906–1907, depression in 1908, and a peak in 1912–1913.[3] On the other hand, the record of the 1890's shows many dissimilarities. Germany (for example) was depressed in the period 1890–1894 and prosperous in 1895–1899, while the United States was prosperous in 1892 and depressed in the period 1894–1897.

In the analysis of policy problems, as this record suggests, we need to look out for four different sorts of forces affecting the way that fluctuations work out in different countries:

1. International factors which work parallel in different countries *without* going through the market mechanism: wars and threats of wars, changes in productive methods, shifts in labor relations, and so forth. Any of these factors may have local counterparts, which go into list (2).
2. Local factors which bring diversity in the timing of fluctuations: "booms" in real estate and securities, local financial panics, technical development in localized industries, crops, and elections.
3. International developments by which one country gains at the expense of another: devaluations, tariff changes, and other protectionist devices; effects of depression in raw-material countries on the prices which industrial countries pay for imports.
4. International developments by which one nation's booms or slumps cause *parallel* movements in other countries.

Items (3) and (4) are the immediate concern of international monetary policy; (1) and (2), however, may greatly influence the outcome.

The United States as a Source of Fluctuations. In discussions of international monetary policy, there is a tendency to picture the United States as the prime disturber of economic stability. This way of thinking has been especially fashionable among Europeans since World War II. Economists in Europe tend to be complacent about their prospects of maintaining full employment if only the United States does not insist on subjecting itself to major depressions which will spread abroad. But

[3] Willard L. Thorp, *Business Annals* (New York: National Bureau of Economic Research, 1926), pp. 78–84.

they are very skeptical about the stability of the United States.[4]

As you can see from the discussion in Part III and Part V, it would not be prudent for anybody to assume that major fluctuations in the United States are a thing of the past. Many of the factors which made us unstable in the prewar and interwar periods are still at work, and the war has added a fine new set of destabilizing factors. American public opinion is not yet demanding an effective stabilization policy; and, if it were, there is room for argument as to what advice economists should give. On the other hand, the likelihood of fluctuations arising elsewhere should not be written off. Europe and Asia are operating with such narrow reserves of foodstuffs, seed, fuel, and so forth, that upsets to production through bad weather, labor disputes, or errors of economic planning can throw unexpected loads on the American economy.[5] Despite the spread of "planning" in Europe, international disturbances will still be reciprocal for a long time to come.

Besides the internal instability of the American economic system, foreigners have reason to fear also a certain irresponsibility in American economic policy. In 1933, for example, in the emergency created by the Great Depression, we rushed into a series of improvisations—some of which worked quite well, while others didn't, but none of which were adequately thought out in advance. In the monetary sphere, the American gold policy at the time of the devaluation was apparently adopted on the spur of the moment—certainly without much consultation with other governments about its international effects. These effects included the later devaluations of the "gold bloc" currencies. More important, perhaps, they included efforts by the French and others to stave off devaluation by import quotas, and so forth, which did a great deal of damage to international trade. Deflation in France postponed recovery there, and thus helped weaken the

[4] This attitude toward the United States goes back in part to the hesitation of American delegations at postwar economic conferences to pledge the United States to maintain full employment. This hesitation rests partly on American skepticism about the effectiveness of stabilization measures likely to be taken in the United States. But in good part, it rests on skepticism that much can be gained in the domestic campaign for economic stabilization by giving prominence to the advice that foreigners are offering.

[5] Cf. the experience of 1947 with the British fuel crisis (largely caused by an unprecedentedly severe winter) and the general short crop in western Europe.

main democratic stronghold on the continent of Europe. It is very doubtful that on balance the United States gained by unilateral devaluation; it is quite clear that we injured other countries a good deal.

Another disturbing episode was set off by American silver policy. At the time that the government raised its gold price, it also raised its price for silver and bought large quantities. This action was, of course, a great satisfaction to American silver interests,[6] was in tune with widespread traditions in the agricultural West about means of expanding the stock of money when needed,[7] and did contribute somewhat to restoring the public's stock of money after its depletion by the great deflation of 1929–1933. But by buying silver abroad we drained away the metallic currency of two neighbors with a silver-standard tradition—China and Mexico—and pushed them onto a paper basis with dollar-exchange reserves. This was not an unmixed evil for them, of course, as the dollars they acquired (over and above the previous dollar value of their silver) were a net addition to their national wealth. But neither country was at a stage of economic and political organization which was ripe for smooth operation of a credit system based on dollar-exchange reserves; and both countries suffered from monetary unsettlement.

It should be stressed, of course, that the United States is not the only country whose economic policy has caused upsets elsewhere. Our sins of irresponsibility look very pale compared with the deliberate exploitation of Germany's neighbors which the

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[6] Silver policy has to be construed in the light of politics. Silver happens to be mined in sparsely populated states, which therefore have a large number of Senators per capita; besides, Senators from these states live to a ripe old age and thus rise to prominence in Senate committees. The resulting political bargaining power of silver interests carries a good deal of weight in political "log-rolling."

[7] Western agriculture developed a strong inflationist bias in the long, dragging deflation from 1865 to 1896, which farmers rightly diagnosed as the result of inadequate growth of the money supply. At first this sentiment attached itself to greenbacks. Later it turned to the not unreasonable idea of increasing the money stock by adding silver as well as gold to monetary reserves. The 1896 campaign, keynoted by Bryan's still-remembered "Cross of Gold" oration at the Democratic national convention, was the political peak of this movement, which naturally lost force once the price level started to climb. But a certain fondness for silver persists among western farmers, making it easy for the "silver senators" to drum up farm support when the time comes for a legislative raid on behalf of silver. Silver as well as gold was mentioned in the "Thomas Amendment" to the Agricultural Adjustment Act of 1933.

Nazis carried on in the 1930's through their bilateral trade treaties and "clearing agreements." The record of the other democratic countries also is far from clear. As I pointed out above, French gold policy in 1928–1931 tended to break down the restored gold-standard arrangements (it may even have been decisive) and helped force deflation in other countries. Some of the smaller European countries played the same game as France during these years; if their responsibility was less, it was only because their weight was too small to be decisive. French policy also has a good deal to answer for in the crucial year of 1931: (1) It blocked an Austro-German customs union proposal early in the year which might have forestalled the Austro-German banking crisis that set off the acute phase of the Great Depression. (2) It blocked President Hoover's proposal in the summer of 1931 for a general moratorium on international debts—a proposal that promised to gain a breathing-spell and create a favorable setting for international co-operation in stopping the deflation. There is no use continuing with a detailed catalogue. But convincing charges of irresponsible action in lines of economic policy affecting other countries can readily be made out against each of the major and secondary powers in the interwar period—as well as in the early postwar period.

"External Equilibrium" and Domestic Instability. A country is in "external equilibrium" if its balance of payments shows only trade-account transactions and security transactions of investment character.[8] To put the same thing negatively, a country is in external equilibrium if its balance of payments shows no gold movements (except those representing "normal" distribution of newly produced gold [9]), and no net short-term capital movements (unless of seasonal character). By this standard, no country can be expected to be in equilibrium much of the time. But it is possible for departures on either side of equilibrium—that is, toward gold imports and short-term lending abroad, or toward

[8] This is not the only acceptable definition of the term, but it seems to me the most usable.

[9] A gold-producing country (like South Africa) must normally have an excess export of gold. A country which uses gold but does not mine it at home (like Great Britain) must normally have a small net import if its gold reserves are to grow in line with world reserves. These "normal" gold items are on much the same footing as trade-account transactions.

gold exports and short-term borrowing abroad—to be brief and self-correcting. As I pointed out in the chapter on gold, this was the case for all the major countries most of the time during the 1879–1914 gold-standard period.

External equilibrium may be "free" or "forced." A "free" equilibrium is a genuine clearing of the market, with everybody allowed to buy or sell as much as he chooses. Equilibrium may be "forced" by rationing of exchange (or by import quotas), cutting out part of the demand for foreign currencies.

Furthermore, equilibrium may be reached with "pegged" prices for foreign currencies or with flexible prices.[10] If exchange rates are pegged and the market is free, the country is committed to share in any business fluctuations which are going on abroad. For if (say) the outside world has a slump, the supply of foreign currencies on trade account will be reduced. The exchange rate being pegged, the demand for foreign currencies has to be reduced correspondingly by a fall in the country's national income—that is, by a slump in physical output, or in prices and wages, or in both.

If foreign exchange rates are "unpegged" and allowed to "find their level," the country *may* be able to maintain external equilibrium without lowering its internal prices or its output. The mechanism is a rise in the price of foreign currency units, sufficient to restore a normal balance on trade account by discouraging imports and encouraging exports. But while this happy outcome may ensue, it also may not—for several reasons. (1) Maintaining output implies substituting production for internal use for part of the previous production for export. "Friction" in this process may involve an increase of unemployment.[11] (2) Letting the prices of foreign currency rise may set up disequilibrating specula-

[10] When exchange rates are "pegged," the implication is that there are official buying and selling prices (presumably with a slight "spread" between them). In perfect external equilibrium, however, official offers to buy and sell will find no takers: an equilibrium rate of exchange would lie between the buying and selling offers (or between the gold points). If equilibrium is approximated—departures on one side offsetting departures on the other—official dealings must show roughly equal buying and selling over a period of a year or so.

[11] The nearer full employment the process starts, the more delicate is the adjustment. For, if there is moderate unemployment, a level output and income implies only taking on workers in domestic industries as workers are laid off in export industries. If unemployment is very small, keeping it very small means finding jobs for the *specific workers* whom the export trades have laid off.

tion on further changes in rates. (3) If there are large fixed items on the outpayment side of the country's balance of payments (such as interest payments, contractual redemption of bonds which have matured, or payments for essential food imports), the demand for foreign currencies may be inelastic. In this case, the trade account may be called on to make impossible large adjustments, and the supposed equilibrating rate of exchange may be unattainable.[12] (4) *Relative* price movements from abroad will make themselves felt. For example, a slump abroad will lower the prices of raw materials relative to the prices of finished manufactures. Such a relative price movement may upset internal stability.

This argument may be summed up by saying that if the outside world is unstable, a country cannot reconcile external equilibrium with stability of employment without changing the composition of its output. And it may be unable to change the *composition* of its output appropriately without changing the *level* of output, the level of prices, or both. Under unfavorable conditions, no satisfactory adjustment is possible.

To avoid having fluctuations imposed from outside while maintaining pegged exchanges (or changing exchange rates less than would be necessary to make the complete adjustment in this way), there are three main possibilities. The country may: (1) by exchange control, substitute forced external equilibrium for free equilibrium; (2) by the use of reserves of foreign exchange, try to ride out foreign fluctuations—remaining out of external equilibrium until the foreign situation is again satisfactory; or (3) persuade the outside world not to have fluctuations. Possibilities (1) and (2) are the subject of the remainder of this chapter; (3) takes us over into Chapter XVIII.

Proposals for Insulation by Exchange Control. Is the problem any more manageable under a forced equilibrium? The answer depends on circumstances. A country which is favorably placed may be able to insulate itself against outside fluctuations by a combination of exchange control and bilateral trade agreements.

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[12] In the 1947 crisis, for example, informed economists were inclined to guess that Great Britain's trade deficit could not be i ıproved noticeably (if at all) by lowering the value of the pound relative to other currencies, on account of the weight of such inelastic items.

But such measures are apt to make difficulties for other countries, and to invite economic warfare.

To begin with, a country can often stabilize the import side of its trade account if it is rationing exchange for trade purposes. If some buyers of foreign currency step out, the exchange-control authorities can call up other buyers from further back in the queue. If additional would-be buyers appear, the authorities can make their rationing stiffer. If exports as well as imports are rationed (that is, if some would-be buyers are turned away), exports also can be stabilized so long as there is any margin of unsatisfied demand. But this is not the normal situation of a country which finds its external relations a problem. What if foreign demand for a country's exports flags until its trade account shows a serious deficit?

Exchange control may have a partial answer here. If foreigners are eager to borrow on a country's market, and if that country is maintaining an export surplus on trade account as the counterpart of its lending, it can keep the exchange market in equilibrium by cutting down the rate of foreign lending. If foreign borrowers have substantial scheduled repayments of principal to make, the rate of net foreign lending may even be pulled below zero by refusing to permit new loans (or to permit the transfer of loan funds into foreign currencies after loans are floated).

If commodity exports are falling and the authorities answer by pinching imports of either commodities or securities, however, the problem of domestic stability is not yet solved. The result is much the same as under a free market with variable exchange rates. As export production drops, other lines of production have to be stimulated: the composition of output must shift.

Now can exchange control and related controls work directly to hold up exports in face of a slump abroad? Perhaps they can. There are two main lines of approach. (1) If the country is lending abroad, it may use its bargaining power as lender to persuade borrowers to buy more heavily on its markets than they otherwise would. Perhaps Latin American borrowers in Great Britain want to build a railroad, and if left to themselves would buy part of their equipment in Great Britain and part in the United States. But if they can borrow only by "tying" the loan to purchases of their complete outfit in Great Britain, they may

be persuaded to transfer to Great Britain the part of their purchases which they would otherwise have made from the United States.[13]

(2) If there are some countries abroad where the country is a major customer, it may set up bilateral negotiations to get those countries to stabilize their imports of its products. This sort of stabilization of exports through intervention of other governments has been attempted under a number of so-called "barter" agreements. It has been particularly repugnant to American policy because it involves "state trading." The substance of such an agreement always is that each government will see that a certain flow of the other country's products is absorbed. To be sure of fulfilling its agreement, the government must be prepared to buy the goods itself if private buyers do not appear—or, at the very least, to subsidize private buyers.

In case of a slump abroad, either method of maintaining one country's exports is at the expense of third countries. These countries are likely to retaliate. Incidentally, the country in the middle may find itself trapped. If, for instance, the United States should persuade Brazil to pledge the lion's share of its coffee exports "in barter" for United States goods, a slump outside the United States might reduce other Brazilian exports and thus leave Brazil unable to pay for highly essential imports from Europe. In such a case, the victim is likely to wind up its "barter agreement" at the earliest possible date; and the victimizer is likely to find its markets impaired rather than strengthened.

It is easy to see how this sort of extension of exchange control through influence on foreign governments intensifies the risk of economic warfare. In early postwar monetary and trade negotiations, these issues have been a major concern. The United States has constantly favored free foreign exchange markets (with exceptions for transfers of accumulated capital), abolition of exchange rationing and import quotas, abolition of "barter agreements," and extension to all other countries [14] of any trade concessions granted in bilateral agreements. The British govern-

[13] "Tying loans" has been an American as well as a British and German practice—a matter of which Europeans and Latin Americans have complained.

[14] The United States has never objected to bilateral trade negotiations. But it has always favored having a "most-favored-nation clause" in all agreements. This means that each country can demand treatment as good as that granted any

ment, on the whole, has taken a reasonably similar line—partly out of political solidarity, partly for fear of restarting the interwar patterns of economic warfare. The Bretton Woods monetary agreements of 1944, the British loan agreement of 1946, and the Geneva trade agreements of 1947 all embody these principles—although postponing their application. But there is an important school of thought in Great Britain and other countries which holds that it is worth risking economic warfare to score bargaining advantages under bilateral dealings. The American concern with keeping elbow room for free enterprise (which is one of the most powerful motives behind the American policy) is not shared by most other governments. The extension of state trading (for instance, under British "bulk purchasing" of cotton and grain), the provision of delays in decontrol of foreign exchange markets under the Bretton Woods agreements, and the suspension of "non-discrimination" clauses in 1947 are straws in the wind which suggest that it may be a long time before these weapons of economic warfare are actually dropped.

Riding out Disequilibrium Periods. The "adjustments" necessary to restore external equilibrium when it is disturbed are always more or less of a nuisance. If the disequilibrium is visibly temporary—or if there is reasonable hope that it will wear off—a country may try to "ride out" the disequilibrium. In fact, it is for use on such occasions that countries feel justified in keeping reserves of gold or foreign exchange.

For illustration, suppose that a country's exports are falling because of a slump abroad. By the use of gold and liquid assets expressed in other currencies, the country can let its citizens maintain their imports. If it can also compensate for the loss of "offsets to saving" [15] involved in a shift toward an import balance on trade account, it can also maintain a steady national income. This process cannot go on forever, however, for foreign-exchange

other. If France grants a tariff reduction on Belgian glass, it should grant the same reduction to American glass.

By the way, this principle if carried to extremes would imply that no two countries could form a "customs union" without taking in all other countries with which either had agreed on most-favored-nation treatment. But American policy stops short of this extreme and seems, on the whole, to favor customs unions in Europe, Latin America, or wherever neighbors get together.

[15] That is, if it can manage to invest more domestically—or to get its citizens to spend more on consumption out of the same income—in an amount equal to the loss in export volume.

reserves will eventually run out. This policy, thus, implies "waiting for something to turn up": either (1) the delayed effect of slow-acting "adjustments" at home, or (2) the improvement of business abroad. The fact that the drain of foreign exchange resources is giving other countries more gold and a more favorable debt position favors (2).

The use of this policy in the face of a slump in exports is more promising for a large country than for a small one. If Canada, for example, finding its exports sagging, fails to make prompt "adjustment" toward external equilibrium, it may face disaster. For Canada cannot expect to release enough gold in a year or two to have much effect on business conditions in the rest of the world; and Canadian efforts to correct the loss of "offsets to saving" will largely be dissipated across the national boundary. In such a situation, Canada is under strong pressure to move quickly toward a balanced trade account—either by raising the Canadian-dollar prices of foreign currencies to expand exports and cut imports, or by lowering the Canadian domestic price level, or by measures along other lines to check imports.

Being a large country, the United States is in a good position to "ride out" the effects of a slump in exports. The United States can release gold on a scale that will soon make a large percentage change in foreign reserves. United States measures to correct the loss of "offsets to saving" will take hold chiefly in the United States. Incidentally, for several years ahead, the foreign need for American goods will be so strong that no slump in American exports need last long (unless it is due to our inability to spare the physical goods needed for export—for instance, in a string of bad crop years). If we provide dollars by imports or by loans, we can count on those dollars being used to buy our exports.

In the other direction, a small country is better placed than a large country to "ride out" a turn of trade which brings gold into the country. If there is a failure of food supply in other countries, Denmark can, if she chooses, export an abnormally large share of her food output and take the proceeds as an increase of gold reserves.[16] But if the United States plays the same game, the

[16] To do this, Denmark, of course, has two problems to solve—living with a domestic food shortage, and offsetting the inflationary pressure that comes from letting foreign as well as Danish incomes in to buy Danish output.

operation may be on such a large scale as to threaten exhaustion of monetary reserves abroad.

This takes the argument as far as it can be carried in the framework of Chapter XVII. Improving the prospects for riding out disequilibria, and thus reducing the need for exchange depreciation and exchange control, is the problem underlying the Bretton Woods agreements. The special responsibilities that come to a country because it is large (and the way they are compounded by relative freedom from war damage) are the problems of United States policy in relation to the international monetary structure. Thus, it is time to open the discussion of these problems scheduled for Chapter XVIII.

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Note on Alternative Points of View and Supplementary Readings

On the observed historical interrelations of prosperity and depression in different countries, see W. T. Thorp, *Business Annals* (New York: National Bureau of Economic Research, 1926)—particularly the "conspectus" in W. C. Mitchell's introduction, pp. 75–87.

The conflict of internal and external equilibrium was discussed extensively by Keynes and his followers. For a contemporary statement, focused on the problems of the International Monetary Fund, see R. Triffin, "National Central Banking and the International Economy" in *International Monetary Policies* (Washington: Federal Reserve Board, Postwar Economic Studies, 1947), pp. 46–81, with discussion by G. Haberler *(ibid.)*, pp. 82–102.

See also N. S. Buchanan, *International Investment and Domestic Welfare* (New York: Holt, 1945), Chapters 8–10.

— *Chapter XVIII* —

INTERNATIONAL MONETARY CO-OPERATION

Organizing Co-operation. Interwar experience shows the need for organized co-operation among the nations in monetary policy. The tacit agreements of gold-standard days no longer operate. The monetary chaos of the 1930's was intolerable and must not be repeated. The limited organization of 1936–1939, under the Tripartite Monetary Agreement, was useful but inadequate.

During the war, there was a good deal of discussion of plans to reshape international monetary policy around some kind of world bank.[1] In the summer of 1944, an international conference was held at Bretton Woods, New Hampshire. Chiefly out of American suggestions (the "White Plan") and British suggestions (the "Keynes Plan"), agreements were put together for an International Monetary Fund and for an International Bank for Reconstruction and Development. The agreements also included clauses looking toward economic disarmament.

Besides the IMF and the IBRD, the machinery of postwar monetary co-operation includes the intergovernmental loan arrangements made in 1945–1947, various committees of the United Nations, and the committees under the Marshall Plan. Plans for economic disarmament have been pushed in further international meetings, especially those looking toward the International Trade Organization.

In this chapter, I take up first several aspects of the Fund; then economic disarmament arrangements; then the Bank and other loan arrangements. The chapter ends with a discussion of proposals for co-ordination of the domestic policies of various nations.

[1] There was a sort of world bank in the 1930's—the Bank for International Settlements, located in Switzerland. But aside from providing a sort of bankers' club for intermittent discussions among central banks, the BIS contributed little to the co-ordination of policy.

The International Monetary Fund: Organization and Setting of Parities. The International Monetary Fund is set up as an autonomous organization, although affiliated with the United Nations. Its "members" are national governments—at the outset, 35 governments—which ratified the Agreement drafted at Bretton Woods and which subscribed the agreed amounts to launch the Fund. They include all the great powers save Russia, the countries of western Europe, Poland and Czechoslovakia, most of the British dominions and dependencies, the Latin American countries, the countries of the Middle East, and China and India: roughly, the membership of the United Nations excluding Russia. The subscriptions (some of which did not become effective because of failures to ratify the Agreement) were scheduled to amount to $8.8 billion ($2.8 billion from the United States). The amount of $1.6 billion ($0.7 billion from the United States), was called for in gold; the rest was to be in the currency of each country.

Ratifications of the Agreement reached the required 80 per cent of total subscriptions at the end of 1945. The Board of Governors, representing all the member countries, set up a body of 12 Executive Directors (partly "appointed" representatives of the five countries with the largest quotas and consequent voting power, partly "elected" representatives of the smaller countries).

The first task of the Fund was to set up a system of "parities" for the various member currencies, expressed in terms of the United States dollar. Members were called upon in September 1946 to state their initial parities, based on dollar exchange rates on October 28, 1945. In December 1946, parities for 32 countries and various dependencies were announced; several member countries (whose currency affairs were somewhat confused) were given more time to file parities. Members are bound to hold the prices of their currencies within 1 per cent on either side of parity.

Under the Agreement, there is room for adjustment of parities under a code of rules—that is, for orderly depreciation or appreciation without breaking down the international fabric. Any country retains the right to vary its parity, between 90 per cent and 110 per cent of the initial parity, at its own discretion. "Consultation" with the Fund is required in such cases, but the Fund's consent is not required. For changes outside these limits, the Fund's consent is required. But the Agreement binds the Fund

to accept changes "necessary to correct a fundamental disequilibrium." [2] Furthermore, the Fund is required to rule for or against a proposed change within three days if the proposed change leaves the rate within a range of 80 per cent and 120 per cent of the initial parity. (For larger changes, the Fund can take more time for consideration.) Thus, the parity structure established is not very rigid, and it is expected that there will be many adjustments within the first few years. But the structure is safeguarded against competitive depreciation.[3]

The International Monetary Fund: Mobilizing Reserves. The Fund, in a sense, is a pooling of part of the monetary reserves of member countries. Each member country, in case of need, is free to "purchase" foreign currencies from the Fund in exchange for its own currency.[4] There are two limits set: (1) on the *increase* of a country's drafts on the Fund; (2) on the *total amount.* (1) No member country is entitled to draw in any 12-month period more than one-quarter of the amount of its subscription quota.[5] (2) No member country is entitled to go on drawing after the Fund's holdings of its currency have risen to 200 per cent of its quota.[6]

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[2] The French devaluation of January 1948 apparently infringed the Bretton Woods Agreement. The French inflation had clearly created a "fundamental disequilibrium" which made devaluation reasonable; and the Fund was duly "consulted." The official rate of about 214 francs to the dollar (as against the previous 119) was not unacceptable. But the Fund refused to approve the French establishment of a "free market" for part of the foreign-exchange proceeds of French exports, on which the rate presently went to 300 to the dollar.

[3] Besides the safeguards referred to in the text, there is one financial safeguard: a member country which devaluates is obligated to reimburse the Fund for any fall in the gold value of its currency held by the Fund.

[4] Note that the word is *purchase,* not *borrow.* The Fund is not a lending organization. It is expected, however, that a member country which draws on the Fund in this way will repurchase its own currency (putting back other currencies or gold) when it is able.

[5] The application of the rule in terms of a single country may be illustrated by Norway. The Norwegian quota is $50 million. Then maximum drafts in any 12-month period are $12.5 million.

For all member countries other than the United States, quotas total about $4.5 billion, so that the maximum rate of draft of United States dollars is about $1.1 billion per year.

[6] Since the Fund starts with 75 per cent of each country's quota in that country's currency, net drawings may rise to 125 per cent of quotas. In terms of the maximum aggregate withdrawal of United States dollars, this sets a limit of about $5.7 billion. The United States quota plus the initial $0.9 billion of gold subscriptions from other countries, however, set the Fund's initial supply of dollars at only $3.6 billion. At $1.1 billion per year, this could not be reached for over 3 years. It is not contemplated, of course, that the tide will set in one direction for so long.

The member country's right to draw, however, is not unconditional. The Fund is intended to be used to enable the member country to ride out a "temporary disequilibrium" in its balance of payments on current account. The Fund can deny the use of its resources to members which are lax in letting gold or foreign exchange drift out to meet an outflow of capital (through the purchase of foreign securities or other assets, or the establishment of private cash assets in other currencies). Furthermore, the Agreement bars the use of the Fund to finance relief, reconstruction, or payments on war debts. The Fund is authorized to close its facilities to a member if the Fund holds that the member's use is contrary to the Fund's purposes.

To prevent use of the Fund from being a one-way street, the Agreement obligates members to repurchase their currencies from the Fund when they are able. A member country whose reserves of gold and foreign currencies rise above its quota is obligated to use a slice of those reserves to repurchase its currency from the Fund. Furthermore, if a member is increasing its holdings of any specific currency by way of dealings with a third country, it must use the increase for repurchase.[7]

The International Monetary Fund: Limits on Exchange Control and Scarce Currency Provisions. The Fund is designed to forestall economic warfare. To this end, the Agreement commits members to abstain from a number of objectionable monetary practices. The practices banned include the rationing of foreign exchange, discriminatory currency arrangements, and multiple-currency arrangements (such as the interwar practice of "bargain" offers of currency to tourists). In line with this policy, other international agreements are aimed to stop the use of import quotas. This ban, however, is not immediate and unconditional. Exceptions are made for (1) limitation of capital transfers; (2) transitional use of controls; (3) handling of "scarce currencies."

(1) The ban on exchange restrictions applies only to "current transactions." Thus, no member country may restrict exchange for use in commodity and service purchases, payment of interest and other types of net income on investments, moderate payments toward amortization of loans or depreciation of direct investments,

[7] This rather complicated-sounding rule is designed to keep "scarce currencies" coming back into the Fund.

and reasonable family living expenses. Any member country is allowed to restrict capital transfers. But the Fund is empowered to decide whether transactions are "current."

(2) The "transitional" arrangements provide for toleration of exchange restrictions and multiple-currency arrangements, on notice to the Fund. Starting in 1950, the Fund will be required to publish an annual report inventorying such restrictions that are still in force. Starting in 1952, any member still imposing such restrictions must consult with the Fund about ending them. Thereafter, the Fund may expel a member which continues such restrictions when the Fund holds it is in a favorable position to end them.

(3) In a long-run view, the most important exception to these rules is the exception in case a currency becomes "scarce." In case the Fund is in danger of running out of one currency (you might as well take this to mean running out of American dollars!), it can try to borrow that currency, but the member is not obligated to lend it. But the member whose currency is scarce (read U.S.A.) is under obligation to accept all the gold that the Fund offers in exchange for its currency. If all measures to increase the supply of the scarce currency are inadequate, it must be *formally declared* scarce, and the Fund must ration its supply of the currency to member countries.

Once a currency is formally declared scarce, member countries may restrict its use by their citizens as they see fit. The general object of the rule is to permit member countries to limit their imports from the scarce-currency country without being forced to do so by "nondiscriminatory" arrangements which would also cut down trade with other countries. Under postwar conditions, the pressure for American dollars is so great that they (and, probably, also Canadian dollars) are fairly certain to become "scarce" in the sense of the Agreement. The practical question is whether these clauses will be invoked, or whether the situation will be taken to call for longer toleration of "transitional" exchange restrictions.

The International Bank for Reconstruction and Development. The plan for the International Bank (like that for the Fund) was agreed upon at Bretton Woods. The Bank has much the same form of government as the Fund, and almost exactly the same membership. But its work is very different.

The Bank is planned to help finance investment in productive projects which are beyond the immediate means of the borrowing country. All dealings are to be *through* member governments or their agencies; although the actual borrowers may be local governments or corporations, if their governments will take responsibility. In case of default, the member government which borrowed (or which sponsored borrowing by its citizens) will find itself under pressure to repay, not from "Uncle Shylock," but from an international organization—the Bank.

The Bank started its organization in May 1946, with a subscribed capital of $7.7 billion. It had power to lend up to a fifth of its capital (that is, up to $1.5 billion), and to issue guarantees on loans for the remainder (that is, up to $6.2 billion).[8] Only the one-fifth constituting the fund for direct loans is expected to be paid in by members, unless losses arise. Of this, only one-tenth (2 per cent of the base subscription, or a total of $0.15 billion) is payable in gold; the rest, in the member's currency. Accordingly, the *dollar-or-gold* loan fund at the outset consists only of the American quota of $0.6 billion plus the gold subscription by other countries—together $0.7 billion. All of the Bank's $6.2 billion of power to borrow or to guarantee loans, however, may be used for dollar loans if occasion arises—and if American investors (presumably, chiefly banks and other credit institutions) choose to buy the securities issued.

The Bank is expected to act only on specific projects of reconstruction or development (not including postwar relief and rehabilitation). The Bank is obligated to check the cost side of the project and the borrower's ability to repay—and also to make sure that borrowers are given reasonable terms, with special consideration for devastated countries.

The Bank is not allowed to insist that borrowers spend in any specific country the funds that they borrow. But, unless the Bank can provide the specific currency wanted, the borrower may find that he has no purchasing power in the country where he would naturally buy (say) his electric turbines.

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[8] If the Bank chooses, it may borrow on its own responsibility and lend the proceeds, instead of guaranteeing securities issued by the borrower. Early transactions suggest that this borrow-and-lend operation will, on the whole, be preferred to the guarantee operations.

The Bank as such is not designed to ease the currency stringencies at which the Fund is aimed. On the other hand, the Bank is expected to place its loans in such a way as to increase the productive power of borrowing countries. This selection of loans is likely to help them ease their currency difficulties in the long run.

Other Long-Term Loan Arrangements. The setting up of the International Bank is not aimed at stopping other types of international loans. The United States has continued to lend abroad through the official Export-Import Bank (with an increase of capital after the war). Moreover, direct intergovernmental loans to help with transition problems were made to Great Britain (in July 1946) and France. The financing of the European Recovery Program starting in 1948 will involve further intergovernmental loans.

In the act to ratify the Bretton Woods agreements (July 1945), Congress set up a National Advisory Council on International Monetary and Financial Problems. This Council represents the Treasury, the Department of State, the Department of Commerce, the Board of Governors of the Federal Reserve System, and the Export-Import Bank. Its job is "co-ordination between the operations of [the] international institutions and the foreign financial operations of the United States Government." Its informal powers include that of passing on proposals by the Bank to float dollar securities. This Council is likely to prove an important focus of policy-making in the field of international finance.

Co-ordination of National Policies for Domestic Stabilization. The best protection for any country against having unemployment or price inflation imposed upon it from outside is to persuade other countries to stabilize their own economies. Organizing international co-operation to this end is one of the tasks of the Economic and Social Council at the United Nations.

Co-operation to stabilize all economies is a matter in which it might seem that there would be a natural harmony of interest among nations. It is hard to imagine any nation's citizens *wanting* to undergo unemployment or inflation. Thus, at first sight, it would appear that every nation could safely be left to itself.

Obviously, there have to be safeguards against "beggar-my-neighbor policies." A few years ago, there was much clamor in favor of using large and fluctuating foreign loans as a way to

stabilize the American economy by altering our foreign trade balance to offset fluctuations in domestic investment. It is possible that a way of doing this sort of thing, on a modest scale, to mutual advantage might be worked out.[9] But what can be done without danger of "exporting unemployment" must be very limited. The type of economic disarmament aimed at by the Bretton Woods agreements should help set bounds to this danger.

Another problem of co-ordination is to persuade countries suffering from "dollar shortage" to adopt domestic policies which will cure the shortage. Over much of western Europe, World War II left an aftermath of "suppressed inflation"—with the influence of an inflationary excess of spending power damped by price control. Under such circumstances, the total of consumption spending, business investment in domestic capital formation, and government spending tends to outrun the value of the national product. Goods which might be exported are sucked onto the domestic market. Imports tend to bulge; an unfavorable balance of payments on trade account results. This may actually be a desirable state of affairs in the acute phase of European recovery, when capital outlays by industry and government promise to build up productive power rapidly, and when cuts in an already-depressed consumption standard threaten to cost as much in goods not produced because of resulting inefficiency as they save in goods consumed. But if the condition of suppressed inflation continues into the more advanced stages of recovery, the same mechanism will perpetuate a chronic dollar shortage. The successful "tapering off" of Marshall Plan aid to Europe thus requires not merely restoration of full production in Europe, but also internal policies in Europe which will bring the total of consumption expenditure, business capital expenditure, and government expenditure within the bounds of domestic production for each country.

If we can get international understandings which block off these two temptations—(a) that of "exporting unemployment" and (b) that of becoming chronically dependent on a flow of loans—we

[9] Some foreign countries are so organized that the timing of deliveries of equipment, and so forth, could be shifted about without greatly disturbing their domestic stability. If we could offer lower prices (say) on electrical equipment by having our government shift the delivery date six months ahead or backward, both parties might conceivably gain from the deal. But it is hard to see this as a large-scale possibility.

can count on the domestic interests of individual nations to keep their stabilization policies reasonably parallel, however. But it is still necessary to reconcile ways of managing stabilization with basic political standards. Americans have no intention, for example, of socializing all industry in order to be more certain of accommodating European wishes for a stable American economy —any more than European socialists have any intention of selling their railroads back to private corporations in order to please American advocates of "free enterprise." Fortunately, however, the survey of practical stabilization possibilities in Part V shows that there is no danger of our having to sacrifice our basic institutions and standards in order to achieve stabilization.

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Note on Alternative Points of View and Supplementary Readings

On the setup and powers of the International Monetary Fund and the International Bank for Reconstruction and Development, see E. A. Goldenweiser and A. Bourneuf, "Bretton Woods Agreements," *Federal Reserve Bulletin,* September 1944, pp. 850–870. See also L. A. Metzler, "Exchange Rates and the International Monetary Fund," in *International Monetary Policies* (Washington: Federal Reserve Board, Postwar Economic Studies, 1947), pp. 1–45.

On the preliminary "White Plan" and "Keynes Plan," see Jacob Viner, "Two Plans for International Monetary Stabilization," *Yale Review,* Autumn, 1943.

On the cross-relations of domestic policies with international monetary arrangements, see A. Smithies, "Multilateral Trade and Employment," and R. Nurkse, "International Monetary Policy and the Search for Economic Stability" in *American Economic Review,* Papers and Proceedings, May 1947, pp. 560–580.

On the relation between "suppressed inflation" and "dollar shortage" see F. A. Lutz, "Marshall Plan and European Economic Policy," *Essays in International Finance* (Princeton: Princeton University, No. 9, Spring, 1948).

— Part V —

STABILIZATION POLICY

— *Chapter XIX* —

INTRODUCTION

A. The Role of Money in "Planning"

Primary Objectives. As I said at the outset, this book as a whole is "policy-oriented"; policy questions come in at least between the lines in every chapter. Down to this point, however, the discussion has been designed chiefly to "brief" you on the things you need to know to judge the policy issues proper. Here at last is a full-scale discussion of what *should* be done for the nation's economic health. You may find the answers disappointingly tentative and full of *if*'s; I do, myself. But I hope that you will agree that the study of money gives us partial and provisional answers which are far from useless, and puts us on the track of better answers.

It is easy to see that the primary business of monetary policy—or, more broadly, of "monetary-fiscal policy" [1]—has much to do with price levels and with the level of employment. But this recognition does not settle the question of priorities, or the possibility that policy guided by one of these considerations may automatically take care of the other.

There is a strong tradition in economics in favor of letting monetary-fiscal policy be guided strictly by a goal of price-level stabilization. Following this rule would mean taking measures to expand the stock of cash (and perhaps, also, to reduce the demand for cash assets) in case prices began to fall, and taking contractionist measures in case prices began to rise. This tradition

[1] Including monetary aspects of taxation, public expenditures, and so on. As I showed in Chapters II and III, this monetary side of public finance is very important—so important that it is fruitless to discuss monetary policy in isolation from it.

originated in days before economists worried much about unemployment. But its present-day protagonists [2] face the problem of unemployment and still come out with the traditional answer.

The argument for giving unconditional priority to price-level stabilization rests on several other arguments, which may be summarized as follows: (1) Unemployment is ordinarily accompanied by falling prices; in this case, nothing is lost by letting prices guide monetary-fiscal policy, since falling prices will call for much the same counter-action that would be recommended to combat unemployment. (2) If the rules of policy and experience under it can convince businessmen that they have stable prices to look forward to, an initial fall of prices will encourage inventory accumulation and equipment-buying in expectation of restoration of the previous price level, rather than encourage business buyers to hold off purchases in expectation of further price decline. (3) Admitting that measures of contraction to stop a rise in price levels may sometimes create avoidable unemployment, the sponsors of a price-level-stabilization standard argue that monetary-fiscal policy should not be held liable for unemployment of this sort. In such a case, some of those who have power to decide what prices shall be are probably actively raising their prices in the face of unemployment.[3] If these people (trade unionists, business leaders, farm organizations, and so forth) were put on notice that such behavior would force the monetary authorities to generate unemployment, the responsibility would be theirs.[4]

At the other end of the spectrum of professional opinion looking toward economic stabilization is the view that monetary-fiscal policy should be guided solely by employment and unemployment. In this view, whether or not a rise in unemployment was accompanied by a price decline would not affect the merits of action to expand the money supply or to increase people's disposable income by fiscal policy. If there is a price advance when unemployment is serious, this school of thought would recommend continuing

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[2] Notably W. J. Fellner, of the University of California, and several University of Chicago economists—the late Henry C. Simons, L. W. Mints, and others.

[3] See Chapter X. Note, however, that a price-level rise might spring from a crop failure raising food prices. A price-level-stabilization standard for policy ought strictly to be set up with some sort of correction-factor for crop fluctuations.

[4] For this point of views, see W. J. Fellner, *Monetary Policies and Full Employment* (Berkeley: University of California Press, 1946), pp. xii and 229–230.

monetary-fiscal anti-unemployment measures and relying on other lines of policy (price control?) to cure the price inflation.

The arguments against a pure price-level-stabilization standard seem to me overwhelming, although they are political arguments rather than "pure economics": (1) The idea of persuading trade-union, business, and farm groups to moderate their prices by threatening to generate unemployment if they misbehave strikes me as unrealistic. It is possible to appeal to these groups to avoid inflationary actions on public-interest grounds. It is also possible to move them by threats of misfortunes which will fall upon themselves—notably, unfavorable publicity which will undermine the political support from outside their groups, without which their political maneuvers will not work. But the leaders of these groups and their key constituents are personally secure against any moderate growth of unemployment; and to threaten them with misfortunes which will fall upon the quite different set of people who may become unemployed is not very promising. (2) Any successful national program of economic stabilization must rest on general understanding and acceptance by the public. A program aimed at employment objectives (with or without price objectives grafted on) has the sort of legitimate appeal around which public consensus can be built. Price-level stabilization alone, in my judgment,[5] will never catch the public's imagination enough to fill this place.

The common-sense solution, it seems to me, is to set up *both* employment and price goals as objectives. First stands the prevention (or, if it can't be prevented, the prompt cure) of unemployment. Second stands the prevention of price-level inflation. There is a real risk that the two objectives may come into conflict, in view of the upward bias of price-making forces; and what should be done in case of such a conflict is a difficult question. But, in setting up a dual objective, we say that it is a defeat for stabilization policy if *either* employment or the price level gets out of hand—and a defeat it surely is.

Supplementary Objectives. Besides these primary objectives, stabilization policy has other goals to consider—both lesser and

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[5] For a well-reasoned argument to the contrary, see G. L. Bach, "Monetary-Fiscal Policy, Debt Policy, and the Price Level," *American Economic Review*, Papers and Proceedings, May 1947, pp. 228–242.

greater.[6] Of these other goals, the chief is human freedom. It is all too easy, of course, to let talk about freedom in relation to economic policy degenerate to mouthing of empty formulas—or, at the other extreme, to pretend that such talk is all sentimentality or a verbal smoke-screen to defend the *status quo*. But there is plenty of substance in the view that freedom should be the overriding goal of society. In fact, if you look inside the employment-price issues themselves, this is what you find. Independence and equality of opportunity for people [7]—not mere creature comforts —are the real stakes.

Less important than the goal of freedom is the goal of "efficiency." This aim includes obtaining enough output from our input on each job; securing an efficient allocation of manpower and other resources among jobs; and improving productivity by invention and by education. Conflicts can arise between efficiency and employment. Some devices for maintaining employment (especially "featherbedding" measures aimed at employment in single industries) impair efficiency. This disadvantage is a reason for seeking better ways to maintain employment. But, in the large, employment and efficiency objectives are thoroughly consistent. For one thing, unemployment is itself inefficiency in the use of resources, socially speaking, and we can afford to accept somewhat more of other types of inefficiency in order to reduce this form. For another thing, unemployment means unfairly low incomes for the unemployed—a circumstance which involves inefficiency in the distribution of goods. There are some senses in which unemployment may contribute to efficiency; but, as I argued in Chapter XIII, these "benefits" are offset by ways in which steadier employment can contribute to efficiency.

Freedom and Planning. Some people [8] seem to think that

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[6] Among the lesser goals, one which has a special claim upon monetary policy is the vested interest of small business in bank-loan financing. Small firms, unable to float securities on the open market, depend on bank loans much more than do large firms, so that any development which weakens the lending function of banks imposes a differential handicap on small business. Monetary policy must take this consideration into account—but cannot give it unconditional priority over steps to further employment-price objectives.

[7] This goal does *not* mean merely equal chances in a lottery; the objective of equal opportunity implies designing the economic "game" so that success depends more on skill and diligence than on good luck.

[8] Notably F. A. Hayek (*Road to Serfdom*, Chicago: University of Chicago Press, 1944). When it comes to the point, Hayek is ready to concede that there must be

any kind of "economic planning" involves giving up both freedom and efficiency as goals. I disagree. It takes co-operation among individuals and among organized groups to keep freedom and efficiency alive; and this co-operation is likely to break down if we keep on having disastrous slumps and inflations. To avoid disastrous slumps and inflations—on the record as spread out in Part III—will clearly call for some sort of planning.

The question, then, is not "Plan or no plan?" but "What kind of plan?" On this more sensible question, the standards of freedom and efficiency offer a good deal of guidance. The issue may be focused in terms of two extreme notions of planning: at one extreme, setting up a "boss" or "czar"; at the other, "framework planning." The first means giving an official the authority to issue "directives" to individual firms or households, telling them what to do, and using his best judgment within a large area of discretion. The second means setting up a "framework" of rules so designed that people can suit themselves concerning what they do so long as they do not break the rules, and will find that the rules bring their actions into harmony.[9]

The boss system is ugly in terms of freedom. People show a healthy shrinking from having bosses to tell them what employers to work for, where to live, where to trade, what to buy, and what to sell for what price. The other extreme of framework planning is much more pleasing to look at. But unfortunately, it is utopian.

monetary policy and budgetary policy. But he is over-anxious to drive home the point that undiscriminating enthusiasm for "planning" secures over-easy acceptance for measures designed to further private rather than public interests, and to point out the danger that essential freedoms may be breached by reaching out for the handiest way to administer a plan. In arguing these perfectly valid points, Hayek somehow conveys an impression that having a plan to guide the economic system is inherently vicious. (This impression is especially strong among those who have read Hayek's book only by title.)

[9] A homely parable can easily be found in traffic control. If there is congestion at a corner, motorists interfere with each other. One remedy is to introduce a "czar" in the form of a policeman with a whistle. He looks at each car (taking note, if he wishes, of the driver's signals), and tells the driver whether to stop, continue, or go right or left. Another remedy is to introduce "framework planning" in the form of a "cloverleaf intersection." By overpassing one road and building four one-way connecting links, everybody can be restricted to a choice of going straight ahead or turning right, without being prevented from taking any road he wants away from the corner, and without getting in anybody else's way. By the time the policeman with the whistle has two or three times forced you to go straight ahead when you wanted to turn, you will appreciate the beauties of "framework planning" (that is, assuming the proper signs will be posted to tell you how to proceed!).

The vice of the boss system is in its affinity (clearly visible in American politics) with the "spoils system." The boss has favors to hand out, and those who want him to decide in their favor have tremendous incentives to make it worth his while—perhaps by offering political loyalty, perhaps by out-and-out bribery. In either case, decisions are not made on their merits, and the process of bidding for favorable decisions is corrupting to the favored people and to the structure of social control, as well as to the bosses and their henchmen. The vice of the pure "framework" system lies in its inflexibility. In a changing society, an unchanging set of rules comes to fit people's actual problems less and less exactly.[10] Unless the framework can be kept in perfect adjustment, we find ourselves favoring its application by a "rule of reason," and bossism creeps in the back door in the interpretation process.

A promising compromise lies in what may be tagged "framework-incentive planning." Much of our planning intelligence should go into mapping out a "framework" of rules for economic affairs, designed to serve with only gradual changes. But there has to be a variable element in policy—particularly economic stabilization policy. The "framework-incentive" approach tries to limit this variable element to impersonal and impartial measures, carried out with full publicity and minimizing the danger that individuals will be "pushed around" by officials—or by other individuals who know how to take advantage of quirks in the rules and their enforcement. These measures, then, will not consist of "directives" from government to particular firms or households. They will influence private decisions by changing the "incentives" which underlie those decisions—largely by affecting markets.[11]

Where Money Fits In. When you start to look for even-handed measures which can influence the economy through "incentives," the most promising are those we call "monetary-fiscal." This group includes bank reserve requirements, "open-market operations" in government securities (whether by the Federal Reserve or the Treasury), international monetary policy, taxes

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[10] In the previous metaphor, cloverleaf intersections will cease to make our traffic self-regulating if we start traveling in helicopters rather than autos.

[11] See pp. 334–336 on "markets" as part of the structure of "incentives."

and the rules of accounting set up in connection with taxes, and government expenditures.

In relation to economic stabilization, most other policy measures classify either as parts of the "framework" or as discretionary measures which call for the issue of directives to private parties and to that extent are misfits in a "framework-incentive planning" program. In the first group (parts of the framework) are the legal rules governing property, contract, collective bargaining, and so forth, and setting up certain taboos aimed at keeping people from injuring each other. These rules include anti-monopoly rules, health and safety regulations, and a host of other "controls" which are too familiar for us to think much about them.[12] In the second group (stabilization proposals which are not impersonal but involve directives) come a number of non-monetary control suggestions. Examples are proposals for "direct control" of private investment by government, for peacetime price control, for manipulation of collective bargaining to produce shifts in wages and profits which their sponsors hope will stabilize employment at high levels, for flexible controls of foreign exchange with the same objective, for "direction of labor" out of less urgent into more urgent jobs. On the boundary between the two groups lie the less impersonal monetary-fiscal control measures, such as "qualitative control" of bank loans and security holdings, installment credit regulations, "margin requirements" for speculation, and public works. All these tend to require the issue of "directives" from government to private parties; on the other hand, they are rather promising fields for tying down discretionary authority by general rules which remove the temptation for abuses.

The discussion of stabilization in Part V centers around the relatively impersonal monetary-fiscal controls. There are two reasons for this choice: (1) This is a book primarily about money, and there is no use pretending that it has "briefed" you adequately on problems far from the monetary focus. (2) On the grounds just outlined, monetary-fiscal measures are our natural first line of defense against fluctuations. If the variable part of stabilization policy (as distinct from the framework) is to have important

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[12] For an inventory (and a convincing showing that even the "anti-planners" have come to take familiar controls for granted), see J. M. Clark, *Social Control of Business* (2nd ed., New York: McGraw-Hill, 1939), Parts I and II.

non-monetary elements, it can scarcely avoid getting into the dangerous business of directives from government to control private operations in detail.

On the other hand, I do not try to shut non-monetary proposals out of the discussion. In the first place, certain non-monetary proposals may have advantages for stabilization which outweigh the presumption for impersonal measures—or they may lend themselves to safeguards by rules binding the way officials use their authority. In the second place, it may develop that monetary-fiscal measures do not add up into an adequate program, so that stabilization is out of the question unless those measures are reinforced by non-monetary measures.

The upshot is that the study of stabilization policy must center around monetary-fiscal measures, but must reach out freely to trace non-monetary alternatives or supplements. Investigating the latter involves many questions on which a book about money presents little evidence, leaving thin spots in the argument. These thin spots are regrettable; but the alternative of ignoring these questions would be worse. For economic stabilization is not merely a monetary-fiscal problem, although it has a monetary-fiscal core. It is better to recognize the non-monetary loose ends of stabilization policy than to push them out of sight.

B. Non-Monetary Stabilization Policies

The Framework. Because Part V, as a whole, is about monetary-fiscal measures, there has to be a brief section which puts non-monetary policies in the foreground. We need a brief discussion of non-monetary policies in the "framework" of stabilization policies, of price-wage policies in the stabilization problem, and of control of private investment.

To begin with the framework, it is plain that there could be no hope of stabilization of employment and prices without some stability in our underlying economic institutions. Some instability can be tolerated—in fact, cannot be avoided in a world of change. But too much uncertainty about basic property and contract arrangements can be paralyzing—or make people's action erratic.

The chief problem area here seems to be labor relations.

Plainly, we are changing our general social boundaries between areas where the employer is "boss," areas where he is subject to government regulation, and areas where he is bound to share authority with organized employees. It is hard to take seriously any more the claim that employment or discharge of a worker is solely the employer's business, and that the employer can tell the worker to talk respectfully, vote right, go to the right church (and have the right color of skin) "or else." Yet this was the situation not many years ago. At the other extreme, it is hard today to take seriously trade-union claims to a major share in management decisions on price, plant expansion, sequence of operations, and so forth. But undoubtedly a union's claim to a major share in settling policy about working hours, the working pace, vacations, and so forth, is now widely accepted.

The unsettled labor situation probably has a damping effect on investment in the firms directly involved; although it may sometimes stimulate investment in firms indirectly affected.[13] But its great drawback is probably in an unhealthy way of mixing economics and politics. This takes two forms: (1) expression of political grudges by a combative attitude in labor disputes—where it seems sometimes that injury to the other party takes precedence over benefits for one's own side; (2) attempts to influence politics by creating economic crises, on terms calculated to force government to "crack down" on the other side or to force government to grant some concession to the industry involved at the public's expense. Upsets to the smooth flow of production which happened in this way during 1946 probably contributed greatly to the postwar inflation. In particular, they apparently delayed gains in productivity which were counted on to narrow the gap between wage demands and desirable product prices.

The labor front, however, is far from being the only point at which unsettlement of the "framework" threatens economic stability. Anti-monopoly crusades and counteroffensives to "exempt" industries and practices from anti-trust action leave monopoly policy confused. The claims of creditors in case of default (as against stockholders in corporations, owners of unincorporated

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[13] For example, insecurity of coal supply persuades many firms and households to install oil burners.

business, and mortgage debtors) are in flux. New techniques for controlling corporations through a small personal capital make the position of controlling interests in business insecure. The boundaries between public and private enterprise are shifting rather unpredictably.

From the standpoint of economic stabilization, it is important both that the "framework" should be generally accepted and right for its times—fitting the social ideas and aspirations of the people as well as productive methods—and also that it should be stable. Compromise between these two virtues is difficult. It is my guess that economic stabilization would work better if the compromise shifted further in the direction of stability than in the 1930's. But if the "stagnation hypothesis" of many economists proves correct—if we have a tendency toward chronic deep depression—it may be more possible to persuade people to change their aspirations and accept a revised "framework" than to model a stable framework after the rather inconsistent aspirations that people now hold.

Price Policies in Economic Stabilization. Economic stabilization as I have been discussing it obviously contains a price problem. In the first instance, this problem is that of avoiding a rise in the price level. But there is also the problem of having *relative* prices which will keep pockets of unemployment from developing.

As I pointed out in Part III, unemployment seems to be primarily a question of markets. Broadly, then, a policy to ward off or to cure unemployment will be a policy to strengthen markets for the products which employers aim to produce when they hire labor. But, as I have already pointed out, measures aimed to strengthen markets in the hope of a larger *physical volume* of output (and, hence, of employment) may push up prices.[14] On the other hand, measures to discourage a rising level of prices through tighter credit, higher taxes, and so forth, may easily lead into a slump in employment.

Some economists feel that the only way out of this dilemma is

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[14] See pp. 416 and 417. A jingle by Kenneth Boulding sums up neatly the policy dilemma of stabilization:

> "Divergent policies we seek
> For markets strong and markets weak,
> But hoping to avoid this crisis:
> Too weak for jobs, too strong for prices."

a policy aimed at making prices fully "flexible." As I argued above, the *complete* success of such a policy would in principle make full employment automatic and leave only the price level to worry about. But, unfortunately, a *partial* success is all we can reasonably expect; and this could easily do more harm than good. People who talk about increased price flexibility as practical counsel seem to be thinking chiefly of making trade unions accept wage reductions. But it happens that the unions which are most open to pressure are those which could do but little for economic stabilization by making their wages flexible; while those whose acceptance of flexibility might help most toward stabilization are in very secure positions. Flexibility in construction costs (including construction wages) might make a real contribution to steadying the physical volume of construction. But the unions involved are very secure, and oppose wage concessions.[15] On the other hand, flexibility in grocery clerks' wages (defended by a relatively weak union) may be attainable but probably would have little effect on output or employment. Insofar as a drive for flexibility means "union-busting" (and this seems to be its political meaning), its main effect is apt to be widening the disagreements between the business community and trade unions. The kind of co-operation we need in our attempt to achieve stabilization is not likely to thrive on a diet of threats.

Probably our main concern as to "flexibility" should be about the sort of longer-run flexibility needed for the effective development of a new industry. If the firms which control new products and new processes are not bold enough in cutting product prices to expand their markets, and in bidding up wages, and so forth, to staff their expansion, the gains of technical progress may be frittered away.

Whether or not the government has a policy of price flexibility, it is called on more and more to take a hand in pricing decisions. The government is deeply involved in the prices of farm products, and is often drawn into wage disputes. Unless wage negotiations cease to be carried on on a national scale (a condition hard

[15] On rigidity versus flexibility in construction costs, see page 342. There does seem to be a real prospect that building workers might prove willing, in a mild slump, to accept lower hourly wage rates in exchange for steadier employment under "annual wage" arrangements; this chance of developing flexibility in construction costs, at least, is one promising reserve for future slumps.

to imagine), there is no way for the government to escape a share of responsibility. Frequently government officials are called in to arbitrate labor disputes, and cannot refuse without precipitating major strikes. Wherever there is leeway in the terms of settlement, or a question whether either side can afford to bring about or continue a strike, public opinion has a strong influence on the decision; and government policy has a strong influence on public opinion. Thus, there has to be a government wage policy —avowed or unavowed, consistent or inconsistent, constructive or destructive, but still policy.

During the postwar transition years (notably 1946), there was strong labor-union support for using wage policy to stabilize employment via the distribution of income. The argument ran that there was imminent danger of a slump, originating from inadequate consumer spending. If, then, a wage-raising campaign transferred income from profits to wages, the argument ran, consumer spending would rise to a larger proportion of national product and the threat of a slump would be dissipated. Unfortunately, the large wage increases actually made were "passed through" to consumers in prices, and the chief effect of the wage campaign was to mark up both the wage level and the price level further above interwar levels. Incidentally, the price increases boosted the value of goods in business inventories, since those goods could now be sold in competition with goods produced at higher costs. Inventory profits thus fattened the profit figures on the books of business, and produced the statistical basis for the "second round" of wage increases in 1947.

My judgment is that this scheme for regulating the economic system should be written off the books as unsound. In the absence of price control, it is self-defeating and inflationary; for employers will try to pass their cost increases on in prices, and will abstain from the attempt only if a slump actually sets in. Combined with price control, this scheme would be regarded by businessmen as confiscatory. Given advance assurance that any profits they make will be snatched away for the benefit of employees (and a strong likelihood that any losses they make they can keep for themselves), businessmen cannot be expected to risk capital in new equipment and buildings, and "stagnation" of investment is the almost certain outcome. Even without price control, the

adoption of such a policy would be a very ominous change of "climate" from the business standpoint.

Broadly speaking, the problem of government wage policy is to encourage moderate wage increases in appropriate cases without giving the general average of wage rates too strong an upward drift. (For a variety of reasons, we might as well assume that cases where the government will press for an actual cut of money wages will be very rare.) Obviously, the requirements of stabilization policy do not give all the answers as to the best labor policy. But they do give a basis for criticizing popularly advocated wage standards. Two such standards which command a great deal of public sympathy, but make a very unhealthy combination, need special comment.

1. In many wage disputes, the chief standard appealed to is that of "in-lining." That is, a wage increase is claimed for certain workers on the ground that they are underpaid compared with other workers (in the same industry or in another) whose skill and working conditions are similar. This standard is somewhat slippery in application, since there are always a variety of other workers with whom a comparison may be made, and the parties to the dispute can often make fairly plausible cases for wage figures quite far apart. But a closer look will commonly narrow the range of doubt. There is a general rule of economic policy that, if resources are really interchangeable, they should be valued the same in all uses, and should be used up to such a point that their marginal contribution in each use is equal. This rule supports the in-lining standard.[16]

2. In other cases, the appeal is to a profit standard: workers claim a wage increase if profits are high—particularly if the gain in profits arises from increased efficiency. Combined with standard (1), standard (2) makes an inflationary mixture. For whenever a group of workers has its wages boosted because its employers have large profits, it comes to be better paid than those whose employers have smaller profits or losses. Thus, an increase under standard (2) always creates a case for somebody else to get

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[16] In application, the common-sense rule is to slant the decision toward the upper edge of the range of doubt if the occupation in question needs recruits, and toward the lower edge if it is overstaffed.

an increase under standard (1). On the other hand, increases under standard (1) normally boost costs for some employers, whose wage rates rise; the competitors of these employers thus gain an advantage which will boost their profits; and both groups of employers are likely to show fictitious profits from the upward revaluation of inventories. Thus, increases under standard (1) also create a case for increases under standard (2); the two create a spiral.

From the standpoint of stabilization policy, it is easy to see that the fault is with standard (2). Obviously, there are cases where standard (2) makes sense. If profits arise because of higher efficiency, and higher efficiency comes *because the workers involved are making special efforts* which other workers do not match, there is a clear claim for higher wages—and the higher wages are noninflationary. But if the gain in profits and in efficiency comes from the application of science to production, the case is different. The resulting gain in the general productivity of labor creates a general claim to a *higher wage level.* But (to take a foreign example) the fact that a British miner happens to be in an industry where man-hour output has a downtrend because of exhaustion of coal deposits, while the chemical worker is in a field where technology advances rapidly, does *not* prove that coal miners are not as much entitled as chemical workers to secure wage increases. The common sense of the situation is that there ought to be a gradual rise in wages for both groups of workers—accompanied by an upward drift of coal prices and a downward drift of chemical prices.

The question of price policy is still more ticklish than that of wage policy, and moreover, it works back into the wage question. During World War II, price control was fairly successful in all the English-speaking countries; and it is tempting to argue that, if anti-unemployment measures run into inflation, all we need do is reintroduce price control. Unfortunately, the remedy is not so good as it sounds. This book is not the place for a discussion of price-control administration. But it is no secret that even with the wartime patriotic appeals, it was a struggle to keep evasion of price control within bounds. Not to mention direct "black market" dealing, there is no way to put meaning into prices without specifying qualities; and prices can be raised very simply by

shifting quality labels.[17] In addition, peacetime price control would have to be more squeamish than the wartime version was about fairness to producers and about price incentives for production. In wartime, if by chance the price control discouraged output of some civilian product, there was often the consolation that the manpower and materials would go into war production; while if there was any danger that the price of war supplies was too low, it could be boosted, and any excess could be recovered by "renegotiation of war contracts" or via Excess Profits Tax. In peace (as we saw in our limited experience with price control in 1945–1946), production dislocations are more worrisome.

Then there is the question of business "climate" and of freedom. Price control is by nature a control by directive rather than by impersonal rules—particularly if the control has to be more than a "price freeze," and if quality of goods has to be watched. Thus, it is exposed to all the perils of "bossism," if it is kept simple. If it is safeguarded by restrictions on the administrators, it quickly piles up a mountain of "red tape." Look at it any way you want, it is bound to be unpalatable to businessmen.

The question of price policy is compounded by its relation to farm policy. During the 1930's and the war period, farmers grew used to having their prices fixed by government officials—under the watchful eye of farm-minded Congressmen. Aside from the general rule that farmers like their prices high and are alert for chances to make them higher, there is a special rule that farmers want "compensation" whenever wages rise at all sharply. On the other hand, trade unions resent any policy resembling "wage control" unless accompanied by price control. And price control is taboo with businessmen and very unpopular with farmers. In short, government price-wage policy is subject to claims from three powerful groups, and these claims are far from consistent with each other. Still less are they consistent with the need of less organized groups for uninterrupted production and reasonable prices.

Under these conditions, the natural wish of the politician is to

[17] Suppose that General Motors wanted to raise automobile prices. All it need do is offer a slightly improved version of last year's Chevrolet as a Pontiac, a slightly improved version of last year's Pontiac as a Buick, and a slightly improved version of last year's Buick as a Cadillac (inventing a new name for the Cadillac), and it could call an actual price increase a price reduction.

yield a little to each organized group. Furthermore, the pressures leave him one path of escape. Farmers may want to see lower wages, but will always accept higher farm prices instead. Trade-unionists would like food cheaper, but can be consoled with higher wages. Businessmen would like both sets of prices lower, but are cheerful as long as they can add what they regard as suitable profit margins to the costs originating in wages and raw material prices. Thus, the politician has a perpetual temptation to please one group by helping its selling prices rise and then to compensate others by doing the same for them. The result is "log-rolling inflation."

Some people are cynical enough to suggest (at least between the lines) the policy of keeping the peace by perpetual inflation. This proposal strikes me as unsound both morally and practically. In particular, it implies perpetual deception of wage-earners—by promising higher wages, and then snatching back part of the increase by lowering the commodity value of the wage-earner's dollar. Even if wage-earners were simple enough to be taken in by this trick, its fairness would certainly be questionable. Moreover, there is no reason to suppose that they are so foolish. In this direction lies an accumulation of grievances which would probably stop the trick from working before many years were out.

Even without a policy of fooling people by inflation, however, it *is* likely that the long-term drift of prices will be upward. We have reached a point in our political development where price relations (notably relations of wages and farm prices) depend largely on political compromises. Inevitably, the compromise will sometimes break down and have to be renegotiated. And successful renegotiation is likely to involve "retreat to a higher price line." There seem to be only two ways to get reductions that will cancel the upward effect of these increases. One is a tremendous acceleration of technical progress, to permit an unprecedentedly rapid drop of finished-goods prices compared with wages and farm prices. The other is a drop in the level of prices and wages through major depression. The first is highly desirable but most unlikely. The second is highly undesirable and moderately likely; but if we succeed in avoiding major depressions, price rises will probably outweigh price declines over the decades.

Direct Controls of Investment and the Public Economy. From the discussion of Parts II and III, it is clear that unsteadiness in private investment is of key importance in fluctuations. (I include in "investment" construction of housing and other buildings, producers' durable equipment, inventory accumulation, and the trade-account balance in foreign trade.) Monetary-fiscal policy can clearly *influence* investment. But very probably it cannot *control* investment in the sense of conjuring up desired fluctuations of some components to offset undesired fluctuations of others. Thus, while we have non-monetary controls under the spotlight, we should survey the possibilities of direct controls of investment. This study is best done sector by sector.

To begin with housing, both the federal government and the states and municipalities are bound to have policies toward it. These policies center on a decent minimum for low-income groups, and on land-use controls to keep filth, noise, smoke, and general squalor from pouring into people's living-places because of inappropriate use of neighboring sites. On the whole, public policy leaves the housing of the upper-income groups to take care of itself. This large private-investment sector in housing exists because, until recently, the whole market for *new* houses and apartment houses consisted of the well-to-do; poorer people lived in second-hand housing in which upper-income people no longer cared to live.

With the rise of projects for "low-cost housing" in new buildings, we have developed a good deal of government construction, and also a good deal of semi-public enterprise through which private companies put up low-rent housing under the stimulus of subsidies or tax concessions.[18] The scale and timing of such operations can obviously be affected by government policy; it would be possible to design a government policy that would give almost complete control, which could be used for economic stabilization.

The strictly private upper-bracket housing operations (for ex-

[18] This is a sample of what Sir William Beveridge calls "joint" public and private enterprise. See *Full Employment in a Free Society* (New York: Norton, 1945), p. 133. In addition, we have an increasing amount of construction by life insurance companies and savings banks (on the whole, medium-rental rather than low-rent projects), which is more open to influence than is most private construction.

ample, suburban "developments") are not directly controllable under normal American conditions. In postwar Europe, of course, the backlog of housing needs is so great that private building can be controlled simply by setting a *maximum* (either through building permits or through allocations of materials). If one contractor drops a project, there are plenty of others anxious to take his place, so that construction is pretty sure to come up to the maximum. In the United States, the result would, of course, be the same if the maximum permitted were set low enough. But we have enough resources for building to afford a very generous maximum rate of building, and we cannot count on continuous pressure to keep operations up to it.

Construction of factories, office buildings, stores, theaters, garages, and so forth, is on much the same footing as upper-bracket housing. Decisions are made privately by independent business firms, and there is no special reason to count on stability. About the only kind of direct control that is practically considered is making some builders wait by holding up their building permits or their materials. (There have been some proposals for other types of controls, which we shall see presently.)

Construction in the "public utility" field (power plants and transmission lines, railways, pipe lines, telephone, and so forth) is on a somewhat different footing. These enterprises are no longer strictly private; for the most part, they fall into the "joint" field, and a few (notably in electric power) are socialized. Furthermore, a small number of large firms are of key importance. The fact that few firms are involved makes it possible for government to influence the timing and scale of investment by "moral suasion," or even by striking negotiated bargains with individual firms. In this area we should also remember the possibility of further socialization. Since we are dealing here with regulated monopolies using a fairly well stabilized technology, the margin in efficiency between private and public operation is often fairly narrow (and by no means always in favor of private operation).[19]

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[19] For political reasons, the nation has been forced to socialize the development of atomic energy, despite the fact that its technology is just starting a phase of rapid improvement, which—if the stuff weren't so dangerous—would be a strong argument for making the field one of private operation. Whether it will create a new area where investment can be timed with an eye to economic stabilization, however, is hard to say in advance.

Expansion of public enterprise in the utility field would make the timing of investment more controllable.

Besides "heavy construction," there is also a field of "light construction." A conspicuous example is the sort of work required for control of soil erosion and surface water: grading, terracing, building of small dams, and so forth. If a substantial soil conservation program came to be included in the nation's agricultural policy, the timing of work of this sort could very likely be controlled for purposes of economic stabilization.

Producers' durable equipment (which means machinery, trucks, store fixtures, lighting equipment, and so forth) is a field where there is little reason except economic stabilization for the American government to mix into business decisions in peacetime. Again, the situation is different in Europe; for the general shortage of equipment there is so acute that priorities have to be invoked, and the backlog of requirements will make it possible to absorb all that can be produced for years. In the United States some progress has been made in *finding out* about business *intentions* to install equipment; but any sort of *control* which would be both efficacious and reasonably free from bossism seems to be quite out of sight.[20]

Inventories are a very tempting field for the inventors of direct-control gadgets. Success in this field could help enormously in economic stabilization; and you have seen from the discussion in Parts II and III that monetary-fiscal controls are not very effective here. But the practical problems of devising an effective control mechanism (let alone one which is also free of bossism) seem nearly hopeless.[21]

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[20] An attractive suggestion has been put forward by M. A. Copeland for having business firms make contracts with government. Under these contracts they could get a small subsidy or tax concession for carrying out on schedule an installation of which they had notified the government in advance, and a larger subsidy for installations on which they let the government set the schedule. Unfortunately, it is hard to see how the authorities could keep the firms from giving an incomplete picture of their intentions—obviously, it would be quite intolerable to have penalties for carrying out projects which were not prearranged with the government. Incomplete reporting would give room for letting prearranged projects displace unannounced projects; and I should not expect the scheme to produce any marked improvement either in the actual timing or even in the predictability of business investment programs.

[21] During World War II, the War Production Board had inventory controls of a sort. Firms were not supposed to show an "unreasonable" increase of inventory from time to time; but to keep from having to inquire into hosts of cases,

The final item on the list is the foreign trade balance. Clearly, there are ways to influence the export and import items which make it up. But the analysis of Part IV shows, I think, that there is almost no room for the United States to manipulate its trade balance for purposes of domestic economic stabilization. Events abroad and our general foreign policy will probably settle for us almost all the lines of action affecting our foreign trade. The only element of slack that looks to me quantitatively significant is the likelihood that we may be able to secure agreements with certain foreign buyers of producers' durable goods to let us time deliveries.[22]

Non-Monetary Loose Ends. The object of this inventory is to show how much there is to the problem of economic stabilization outside the monetary-fiscal field on which the book focuses. I have not tried to cover the whole field of possibilities, and have only incidentally tried to offer solutions. Some further analysis of non-monetary policy problems will come in later in Part V.

C. Monetary-Fiscal Planning

Boundaries and Connections of Monetary and Fiscal Policy. Monetary-fiscal policy, as I have pointed out, takes in policy instruments generally tagged as "monetary" (reserve requirements, open-market operations, and so forth), and also instruments generally tagged as "public finance" (management of the public debt, taxation, and public expenditure). Putting it into terms of government agencies, monetary-fiscal policy takes in the central responsibilities of the Federal Reserve System, the Treasury (including the Bureau of Internal Revenue and the office of the Comptroller of the Currency), the Bureau of the Budget, the

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the Board set its standards of "reasonable" increases so high that the rule was not very restrictive. Firms using scarce materials were required to keep down stocks of those materials on pain of losing "priorities" on further supplies of those and of other materials. But I gather from former WPB economists that this inventory-control experience gives little hope for satisfactory peacetime controls.

As a touchstone of difficulties in controlling inventory, think of tax possibilities. In principle, we could use either a tax on upward or downward *changes* in inventory, or a tax with variable rates on *amounts* of inventory held—in either case trying to set up tax offsets to incentives to change inventories sharply. Actually, either proposal shatters on the difficulty of getting reliable measures of inventory at suitable intervals (monthly, or, at least, quarterly).

[22] See p. 410.

Federal Loan Agency, the Federal Deposit Insurance Corporation, the Federal Security Agency, and the Federal Housing Administration and aspects of the responsibilities of most other government agencies.

This is a lot of territory. The institutional and factual evidence so far presented in this book covers only a fraction of the field; and although some fresh evidence will be brought in as I talk about policy in Part V, it will come nowhere near covering the ground. How does it make sense to talk about so broad a field of policy on the basis of such narrow evidence?

The answer is, of course, that the policy discussion cannot cover the whole field. In particular, I am confining myself to the monetary aspects of public finance. I assume that it is none of my business in this discussion to explain how general property taxes are assessed, or why there had to be a constitutional amendment to authorize the income tax, or what kind of authority the Bureau of the Budget has over the spending of government agencies. All of these questions belong in books focused on public finance.[23] The monetary focus of this book means (as I pointed out in Part II) that we are interested in taxes and government expenditures as a kind of "open-market operation." We have to pay some attention to the differences among taxes which make their monetary effects different. Administrative problems, however, come in very little except as they affect the timing of policy.

The Forecasting Issue: How to Tell When to Do What. From the material already presented in this book, it is rather easy to rattle off answers to one class of questions. You can use the book as a work of reference, and find out what measures can be adopted if the authorities (Congress and the President, say) want to nip a speculative inventory boom, or if they want to stimulate investment in durable goods, or if they want to offset a reduced demand for cash balances resulting from more direct routing of payments, or if they want to forestall an imminent slump in consumer spending on semi-durable and perishable goods.

All this is fine, but not just what we need. It is rather like being able to tell the farmer what to plant when there won't be enough rain in August. That is very useful advice *if* we can also

[23] See, for example, E. D. Allen and O. H. Brownlee, *Economics of Public Finance* (New York: Prentice-Hall, 1947).

tell him how much rain will fall. But the farmer can't guide his planting by evidence which isn't available to him by the time he has to put in his crops.

Economic policy is like farming in that we have to decide what to do before we do it, and what we do will often make a difference long after the date when we take action. Thus, economic policy depends on economic forecasting—both *differential* forecasting of the "swing" in future affairs that hinges on taking or not taking a certain step, and *absolute* forecasting of how future affairs will go if we don't take that step.

The first thing to say about economic forecasting is to admit that it is inaccurate. Whatever happens, somebody always pops up to say that he predicted it; and often he can prove that he did. But if you look back into his record, you will always find that the person who was right this time was often wrong before. Sometimes you can show that he got the right answer this time only because he made an error in his calculations; always you can find other equally plausible forecasts, by people with equally good records, which went wrong. The reason you can always find somebody who guessed right is simply that the guessers are shooting in such a variety of directions that all possible guesses are always being made.[24]

The fact that forecasting is inaccurate does not mean that we have no sound policy advice to offer. It would be nice if we knew just what would happen—both with and without the policy measures we advise. But if we face the fact that the future is uncertain, we can often give good advice about preparing for uncertainty. Often this advice is different from that we would give for any kind of certainty that we might imagine, however, so we must beware of merely "splitting the difference" between proposals which would turn out well if certain possibilities were fulfilled.[25] Furthermore, uncertainty affects some parts of our forecasts much more than others. There is a good deal of stability in basic behavior patterns; this is the foundation for "framework planning." Forecast-

[24] The monopolistic competition theorists have a name for this class of phenomenon; they call it "differentiation of the product."

[25] *Parable:* Your brother is just going outdoors, and you are sticking your head out to look at the weather. If it is actually raining, you advise a raincoat. If the sky is blue, he might as well go out as he is, and save bother. If clouds are blowing up and it *may* rain, he'd better take an umbrella.

ing can give sensible approximations. For example, we can gauge tax needs a year ahead with a range of error of perhaps "plus-or-minus $5 billion." But we must beware of assuming that our range of error is as narrow as $1 or even $2 billion.

Uncertainty of forecasting creates two issues in policy:

1. Automatic versus discretionary policy.
2. Forestalling versus remedial action.

Policies can be designed which will be "automatic" in the sense that they will go into action when trouble develops *before* there is time to size up the situation, make fresh policy decisions, and put them to work.[26] If a complete set of automatic economic stabilizers could be worked out which was adequate to meet all contingencies, we would be freed of most of our forecasting difficulties. Unfortunately (as will appear in Chapter XXII), it is likely that the automatic stabilizers have not the capacity to do the job. Therefore, they have to be supplemented by discretionary policy measures calling for fresh legislation from time to time or administrative action within rules laid down by legislation, or a combination of the two.

If policies are discretionary, they can be either preventive or remedial. Given good enough forecasting, it would clearly be best to carry on economic stabilization by forestalling trouble. On the other hand, if forecasting is too unreliable, efforts to forestall an inflation might give us an avoidable depression (or vice versa).[27] Thus, our uncertainty about the future makes it more prudent to put a good deal of reliance on policies for arresting or reversing undesirable trends before they go dangerously far.

Plan of Part V. The central chapters of Part V (Chapters

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[26] The difference between automatic and discretionary policy is parallel to the difference between having automatic sprinklers in the ceiling and having an old-fashioned chemical fire extinguisher in a wall bracket. The sprinklers will go into action as soon as a fire raises the temperature—even though nobody is in the room. The fire extinguisher takes an operator and can't go into action automatically; but it can do some jobs that the sprinklers can't.

[27] A good example of the handicaps of a forestalling policy is in the annals of 1946–1947. (See pp. 329–332.) Through most of these two years, forecasters were much concerned about the imminence of a slump; while the event showed that we needed, not measures to forestall oncoming recession, but measures to curb a contemporaneous inflation. See E. E. Hagen, "The Reconversion Period: Reflections of a Forecaster," *Review of Economic Statistics*, May 1947.

XXII and XXIII) grow out of the point just raised. Chapter XXII considers prospects for automatic stabilizers; Chapter XXIII, the relation of discretionary stabilization policies to forecasting.

Before we get to these central chapters, however, Chapters XX and XXI analyze an array of "plans" for economic stabilization—centering about monetary gadgets in Chapter XX, and about fiscal formulas in Chapter XXI. The final chapter (XXIV) draws some tentative conclusions about the way to organize our national efforts toward stabilization.

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Note on Alternative Points of View and Supplementary Readings

On the role of money in a system of "framework-incentive planning," see H. C. Simons, "Rules versus Authorities in Monetary Policy," *Journal of Political Economy*, February 1936, pp. 1–30, and *Positive Program for Laissez-Faire* (Chicago: University of Chicago Press, Public Policy Pamphlet No. 15, 1934). Both these papers are reprinted in H. C. Simons, *Economic Policy for a Free Society* (Chicago: University of Chicago Press, 1948), pp. 40–77, 160–183.

For an influential view on the relationships of the various goals of policy, see W. H. Beveridge, *Full Employment in a Free Society* (New York: Norton, 1945), pp. 18–39 and 242–258. Sir William's views on non-monetary policy in relation to employment and prices (*ibid.*, pp. 124–131, 170–175, and 194–207) are also of interest as an antidote to the view that public spending policies to combat unemployment are all-sufficient.

A variety of points of view on the general problems of stabilization and the general outline of policy may be found in the discussion at the American Economic Association's meeting of January 1946 (W. J. Fellner, A. G. Hart, A. P. Lerner, J. H. G. Pierson, S. H. Slichter, A. R. Sweezy, and C. Warburton, "The Problem of Full Employment," *American Economic Review*, Papers and Proceedings, May 1946, pp. 280–335).

A view of policy centered largely on adjusting the "framework" through intensifying competition and price flexibility is offered by H. S. Ellis in B. M. Anderson, J. M. Clark, *et al.*, *Financing American Prosperity* (New York: Twentieth Century Fund, 1945), pp. 126–198.

— *Chapter XX* —

MONETARY PANACEAS

Why Study Panaceas? One of the main goals of social science teaching is to instill distrust of magic formulas for an immediate cure of social ills, and rightly so; for people are always open to the temptation of an easy way out of trouble, and prone to let the temptation blind their judgment.

Then why choose monetary panaceas as the topic to open a serious discussion of policies to set limits to unemployment and inflation? There are several reasons:

1. Panaceas are fun. The designer of a panacea (whether he is a "crank" or a demagogue, or one of the rare people with a real genius for inventing devices of social organization) is always skirting the boundary between error and neglected truth. He is often unexpectedly right, and just as often avoidably wrong. In short, his way of looking at things is refreshing.[1]

2. The policy problems of economic stabilization are complex. It is convenient to start the policy discussion with simple and clear-cut patterns. Study of the strong and weak points of plans simple enough to be described as "panaceas" will give an idea of how a policy suggestion can be correctly tagged as "promising" and may be carried forward for combination with other suggestions.

3. There is a good deal of practical salvage in the ideas to be studied here.

The first few schemes discussed in this chapter (except for the gold standard, which is merely mentioned), are clear-cut "crank schemes." The chapter proceeds to much more subtle schemes

[1] There is no use trying to deny my own sympathy for the "crank"; so, as an additional sporting element, you can watch for places where I may have fallen into his characteristic errors.

coming from people who are clearly constructive social inventors.[2] A thread of critical discussion runs throughout, and I try to weed out useless suggestions. But any discussion of how to combine the more useful suggestions into elements of an effective policy is, for the most part, adjourned to later chapters.

The Automatic Gold Standard. One "plan" which belongs in this general group is the automatic gold standard. The historical gold standard, of course, never corresponded perfectly with the utopian ideal of the gold standard in the minds of its advocates. But, for all that, it is the only one of the plans listed in this chapter which has come at all close to a practical test.

The nature of the gold standard and the reasons for rejecting it as a practical policy for our times were explained in Chapter XVI.

Social Credit. Of all the money plans on my list, the most thoroughly "crankish" is Social Credit. This is a sort of monetary cult, led in England by the celebrated Major Douglas.[3] It has a Canadian branch which has turned into a political party in the prairie provinces and has held office for several years in Alberta. The operating policies of this party, however, have not been very closely linked to the basic Social Credit doctrine.

Social Credit rests on the "*A* plus *B* Theorem." This is very simple: Consider the costs of any business firm. Part of these costs (wages, salaries, and interest) are income to somebody. But a large part of costs in each firm fails to constitute incomes. If we call the income part of costs in each firm *A* and the non-income part *B*, then the sum of the *A*'s is obviously much smaller than the sum of all the costs incurred. But products have to be bought out of income. Therefore, incomes are inadequate to keep business going without loss. The remedy is "injections of money" enough to cover the *B* costs. These are to take the form of "dividends" to citizens by the government.

It is easy to see that something is wrong somewhere. The "theorem" proves too much. On an average, for the firms in an

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[2] I use the expression "constructive social inventor" without prejudice to the question whether the inventions under study are practical. Constructive inventors probably miss fire more often than they succeed; but their failures nevertheless bear the marks of the sort of imagination and workmanship which *can* succeed.

[3] See Clifford Douglas, *Social Credit* (London: Palmer, 1924; 2nd edition, New York: Norton, 1933).

industrial economy, the *A*'s are only a small fraction of total costs.[4] Only a fraction of a year's output, therefore, could be sold. At this rate, the economic machine must have become completely jammed long ago, with all output stopped—but how did we fail to notice it?

The answer is, of course, that the "*A* plus *B* Theorem" is a silly way to compare costs and markets. If we consider costs as the sum of *A* plus *B*, we cannot say in the same breath that only income is available to buy output. For the *B* costs of (say) retail trade provide a market for the goods that wholesale trade must sell. A "deficiency of purchasing power" on the scale suggested by Social Credit has never existed and can never exist. This does not mean that a "deficiency" is impossible. Keynesian monetary theory of the sort presented in Chapter VII shows that spending out of income may be insufficient to balance the economy at full employment. But the deficiency visualized by the Keynesians is a totally different affair from that visualized by Social Credit. With such a fallacy at the root, Social Credit has, of course, no valid suggestions as to the scale of monetary operations.[5]

Stamp Scrip. Another vein of "money crank" thinking plays with devices christened "stamp scrip." "Stamp scrip" refers to a type of money which retains its validity only if the holder buys stamps at stated intervals and pastes them on the scrip. In most such schemes, it is proposed to retire the money when the cumulative value of the stamps attached catches up with the original face value. But, by the time the first batch of money is retired, it is expected that several other batches will have been issued.

This device traces back to Silvio Gesell, who was a sort of prophet in Central Europe before World War I. The late Professor Irving Fisher took a sympathetic interest in stamp-scrip schemes and published a book which sketched the ideas and their

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[4] In 1929, for example, corporate sales (excluding finance, insurance, and real estate) were $139 billion (*Survey of Current Business*, National Income Supplement, July 1947, p. 41). Total income originating in corporate business was $45 billion (*ibid.*, p. 25), or slightly under a third. But this total included some income from finance, and so forth, and some profits undistributed.

[5] In the first edition of *Social Credit* (which was evidently written before the collapse of the great German inflation), there was a tone of approval of that inflation—which disappeared in the second edition.

history and described several attempts to put them into practice. In the United States, however, most of the noise about stamp scrip has come from the sect known as the "Ham and Eggers" (after their slogan "Ham and Eggs for Californians"). This sect, which has sometimes rolled up a substantial vote in California, advocated a program of "Thirty Dollars Every Thursday" for elderly people [7]—relying on the same appeal as the "Townsend Plan."

The magic appeal of stamp-scrip schemes is simply that of something-for-nothing. Their advocates commonly claim that the issue of such money would be costless, because its circulation would force stamp purchases to retire it. Consequently, they picture such money as available for old-age pensions or any other good work in which the sponsors may be interested. Incidentally, they argue that no holder could afford to "hoard" such money; for, by spending it before the next stamp came due, the holder could avoid the stamp tax. Thus, the resulting money system is pictured as insurance against business slumps.

Unfortunately, these schemes have two fatal defects. The chief one is that the scrip would have no initial value. If (as is often proposed) a bill to be redeemed for $1 a year hence would need 52 weekly 2-cent stamps to validate it, no holder could afford to buy the first stamp. For when a dollar had been spent in buying stamps, the bill would still be 4 cents short of being redeemable at a dollar; thus, nobody could afford to buy stamps for a bill unless it already had a minimum of 6 cents on it.[9] The second defect is that the scheme overlooks the relation of pocketbook money

[6] Irving Fisher, H. R. L. Cohrssen, and H. W. Fisher, *Stamp Scrip* (New York: Adelphi Co., 1933).

[7] See the celebrated pamphlet with the "ham and eggs" cover (French fried potatoes appear for good measure) under the title "$30 a Week for Life," copyright, 1938, by Petition Campaign Committee for Thirty Dollars a Week for Life, California Pension Plan, 1731 North Highland Avenue, Hollywood, California.

[8] This related plan is discussed on pp. 459–461. It falls into the "fiscal" rather than the "monetary" group because of its stress on taxation.

[9] The amendment to the Californian constitution supported by the Ham and Eggers in 1938 (and for which several hundred thousand people voted) carried a clause requiring public authorities to accept "warrants" (stamp-scrip bills) for taxes if stamped up to date. This might make a new warrant worth 98 cents to a taxpayer, as he could clear off a dollar of taxes by buying a 2-cent stamp. But, by the same token, the state (or its local government) would be accepting a 2-cent stamp purchase in lieu of a dollar of taxes. Thus, this means of giving value to the "warrants" involves sacrificing the self-liquidation feature; the issuing government would have to borrow or levy extra taxes to cover the share of existing taxes paid in warrants.

to near-moneys—notably bank deposits. If banks were forced to accept stamped-to-date bills for deposit at face value, their customers would cheerfully deposit all bills just before the stamps had to be bought. Obviously, the banks could not bear the whole burden of buying stamps to redeem all the scrip. But if banks were allowed to refuse the deposit of stamp scrip, the scrip would have no value in bank deposits.

In this extreme form, the whole stamp-scrip idea is simply a triumph of man's ability to wish over his ability to do arithmetic. Either of the two difficulties just described is enough to make self-redeeming stamp-scrip currency impossible. But there is a salvageable residue of sense in the idea, as will appear in a moment.

Melting Money: The Dahlberg Scheme. Many a poison can be good medicine if taken in homeopathic doses. The plan of levying a tax on money (in the form of a requirement to buy stamps) *sufficient to redeem the money* in a few months is poison. But one notion behind it is sensible: namely, that in a depression the "velocity of circulation" is undesirably low, and perhaps a tax prod to the holder of cash could speed it up. Could anything be done along this line with a homeopathic tax?

A systematic set of proposals of this sort was developed in the 1930's by Arthur Dahlberg.[10] It centers on a "hoarding tax" of a fraction of 1 per cent monthly. In the first instance, this is thought of as a tax on average balances in checking accounts—collected for the government by the banks. As a corollary, Dahlberg proposes issuing "dated currency," with a new color every month; each time a new month started, the old-color issues would move down a notch in value.[11] Thus, cash would gradually melt in the

[10] Arthur Dahlberg, *When Capital Goes on Strike* (New York: Harper, 1938). See especially Chapters VI–VIII and XI.

[11] To simplify mechanics, Dahlberg proposes that, when people obtain paper currency at the bank, it must always be of the new issue. The bank would charge two months' tax at the outset (so that, say, you must hand the bank teller a check for $50.10 to get $50.00 in bills); thus the money could circulate or be deposited at par for two months. Thereafter it would be subject to a growing discount upon deposit in a bank (and thus in circulation)—at first at a rate close to the original tax, later at a galloping rate designed to make it prohibitive to have currency over a few months old in circulation. (*Op. cit.*, pp. 70–76.)

The ingenuity of this suggestion, by the way, is a good specimen of Dahlberg's workmanship. His whole structure shows careful consideration of the way in which financial practices would adjust to his tax; both loopholes for evasion and compliance difficulties for banks and the public are fully considered and remedies suggested.

owner's hands unless used. The holder of cash would be given a strong incentive to look for "real" assets in which to hold his wealth, and to keep his cash down to transactions requirements plus a margin of safety. It would not pay to hold cash for bear speculation unless the speculative asset in view was expected to drop in price rapidly enough to balance the melting rate of cash.

The two fatal objections to stamp-scrip schemes do not strike this proposal. The rate of tax proposed is not prohibitive; people could definitely afford to hold cash subject to a monthly tax of $\frac{1}{10}$ of 1 per cent, or $\frac{1}{4}$ of 1 per cent. Thus, there would be no danger of paper currency being worthless when issued. At the same time, the proposal makes some allowance for switching between types of assets to avoid the tax. Switching between paper currency and checking deposits would not evade the tax, since it applies to both forms of cash.[12] Under Dahlberg's proposals time deposits would not be subject to tax. But any general effort to switch to time deposits would pull down time-deposit interest rates, restoring the relative advantages of different types of cash.

As Dahlberg points out, there would be a tendency to transmute bank deposits into Treasury bills and similar highly liquid securities which would not be taxable. If such a trend meant that the nonbank public held such assets instead of the banks, the rise in velocity of the public's deposits would be offset by a fall in the amount of deposits. For transfer of the assets would be "negative credit creation": the checks drawn to buy the assets would be subtracted from one set of bank balances but not added to any other set.[13] Note, however, that this process involves a drop of interest rates, for nonbank holders of cash would be bidding against each other and against banks to buy not only Treasury securities but securities of private firms.

[12] Just at the end of the month, of course, it would pay to make sure that you were not holding more paper money than you needed in the next month; for, if you did, you would gain by popping into the bank whatever part of the excess was in bills that were going to lose value. But there would be no use stripping paper-money holdings so low on the 31st that you would have to draw more the morning of the 1st; for you would have to pay the initial fee on the new paper money.

[13] If the government's policy-makers wanted to avert such a conversion, they could counter it by redeeming maturing securities in cash (subject to hoarding tax), thus reducing the stock of such near-moneys available and replacing it with a stock of cash.

We come here to the tie-in of the Dahlberg scheme with interest rates. As we saw in Chapter VII, there is a lower limit to interest rates on government securities, corporation bonds, and so forth, set by the possibility of holding cash at zero interest (or better) and by expectations about future interest rates. The "hoarding tax" would mean that interest on cash was no longer zero but *negative;* it would cost a person a certain percentage per annum to hold cash idle. If a bond yielding 2½ per cent per annum is now just *not* worth buying in comparison with the option of holding cash at zero interest, it would be definitely worth buying in comparison with the option of holding cash at minus 2 per cent. Thus, one of the barriers to lower interest would be broken down; and the second barrier (expectations about future interest rates) would soon be whittled away by experience under the new conditions.

This possibility reopens the savings-investment puzzle of Part II. As was argued there, it has become impossible to close a gap between full-employment savings and full-employment investment by lowering interest rates. If the barrier to interest reduction were removed, however—so that interest could be pulled down to 1 per cent or zero or even below zero—it should be possible to lower interest rates enough to give a real encouragement to investment projects. The world is full of ventures which would pay off if they had only to repay their investment costs without interest (or even a little less). By the same token, if cash melted in the owner's hands, anybody who could not place his savings in non-cash forms might be seriously deterred from saving.[14] In any event, there is sense in Dahlberg's view that a hoarding tax would largely transmute saving into a demand for real goods instead of for empty tokens.

With all the attractions just sketched, "melting money" is not practical politics. Why not? How valid are the "practical" objections?

To begin with, the scheme has probably not had as much at-

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[14] This finding is not an open-and-shut proposition, since at lower interest rates people saving for their old age would be forced to set aside a larger share of income during their working years. But they would be under pressure to buy houses in which to retire (for instance) rather than to build up bank balances.

tention as it deserves.[15] The author has been rather a lone wolf in the economic profession.[16] His notions do not fit easily into either academic or political discussion.

In the second place, the plan is presented as a panacea for most economic ills, rather than as a good idea to be combined with other ideas.[17] Furthermore, it is hard to imagine the plan being adopted gradually; it calls for a nation-wide scale and a perceptible rate of tax, or it is nothing. Thus, it is hard for people interested in other remedies for economic ills to adopt this plan as a plank in a broader platform. (In good part the difficulty lies in the presentation of the scheme rather than in its logic.)

In the third place, if the plan were suddenly adopted (or even came to be considered as practical politics), it would give a strong shock to business opinion. In judging any policy, you must allow not only for what it would do if people didn't worry about it, but also for the effect of the way people may worry. An innovation of this sort would be widely misunderstood, and might make many people feel that the world was coming to an end. If we fell into a catastrophic depression again, a proposal like this might have a chance of acceptance as part of a grandiose recovery policy; but if it were proposed as part of a preventive policy, or as a remedy for a mild depression, the damage of the shock might far outweigh years of benefits from its later operation.

In short, we can tentatively write this plan off as "impractical"

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[15] Very likely a cult could be built around it, along the lines of Social Credit, Technocracy, Ham and Eggs, and the Townsend Plan. The scheme has some of the key virtues of a successful "crank" scheme: it is simple enough so that lots of people could convince themselves that they understood it, and yet complex enough so that they could take pride in understanding it. Perhaps it isn't sufficiently easy to talk nonsense about, however; and it lacks a good something-for-nothing appeal.

In any event, the author of the scheme has not chosen to promote a cult; and if the scheme did develop this sort of support, it would certainly be no nearer to acceptance by the business community.

[16] In his preface, Dahlberg proclaims that a student "only grooves his thought if he persists in detailed study and review of others' efforts" (*op. cit.*, p. xxi). This proposition can be argued both pro and con. Certainly too many students try to let a rehash of other people's thoughts serve instead of independent analysis. On the other hand, think of the wastage of effort in redoing jobs already done, and working through all the old intellectual blind alleys. Either way one argues the case, however, this isn't the motto of a man who builds up a professional following easily.

[17] *Exception:* Dahlberg does discuss at length the integration of his plan with the "100 per cent money" scheme discussed below.

on the ground that it is too shocking, subject to reconsideration if other methods of economic stabilization seem too unpromising. You may call this treatment the appeasement of unreasoning conservatism, or realism about the possibilities of social education (according to your attitude toward conservative opinions); but there it is!

"100 Per Cent Money." The "100 Per Cent Money" plan is basically the simplest of all sketched in this chapter. Its idea is to require all banks to hold 100 per cent reserves (instead of fractional reserves) against their deposits.

This plan came into active discussion during the Great Depression of the 1930's.[18] In the first instance, it was a reaction to the disastrous 1929–1933 experience of credit deflation and bank failures. A 100 per cent system would have kept the public's withdrawals of deposits for "hoarding" in paper currency from pinching the banks; for such withdrawals would then have reduced reserve requirements by 100 per cent of the reduction in deposits, instead of only a fraction of the reduction in deposits. It would have kept the bankers from reducing the stock of cash by calling loans; for the public's cash would have rested on the cash constituting bank reserves, not on loans. It would have prevented bank failures; for a 100 per cent bank could never run out of reserves before all of its deposits were withdrawn.

More broadly, the advocates of "100 Per Cent Money" hoped to put an end to the perverse tendency of the credit machinery to expand in a boom and contract in a recession. Most of the "hundred percenters" thought that a constant or slowly growing stock of cash was the ideal, and wanted the system as a means to that end. Others held that changes in the stock of cash might be desirable, but favored the "100 Per Cent System" as a way to get desired changes and to balk undesired changes.[19]

[18] Discussion was opened by a mimeographed memorandum in November, 1933, from a group of the economics faculty at the University of Chicago in which I had some part. This group was led by the late Henry C. Simons. The idea was followed up by Simons in his pamphlet *Positive Program for Laissez-Faire* (Chicago, 1934), and adopted by Irving Fisher in his *100% Money* (New York: Adelphi Press, 1935). L. Currie, in *Supply and Control of Money* (Cambridge, Mass.: Harvard University Press, 1934), presents an independent development of the same proposals. For a bibliography, see Fisher, *op. cit.*

[19] On "100 Per Cent Money" as a way to make the stock of cash controllable, see my note on "The Chicago Plan of Banking Reform" in *Review of Economic Studies*, Vol. II (May, 1935), pp. 104–116.

This scheme would not affect the way in which the individual household or firm would handle its paper money and checking accounts. But it would mean that the banker no longer gained or lost earning assets by attracting or repelling deposits. Thus, the competitive pressure to hold deposits in order to hold earning assets would no longer deter bankers from levying heavy service charges on checking accounts. A growth of such charges would thus be a natural consequence of the plan, unless the monetary authorities were willing to subsidize the banks for their costs in handling checks.

In all discussions of the "100 Per Cent System" there has to be talk about how to start it. If a 100 per cent system were imposed with no change in the stock of bank reserve funds, obviously the result would be a tremendous credit deflation. For banks now have only fractional reserves, and would be forced to call loans and sell securities to build up their reserves.[20] No "hundred percenter" has wanted to start the plan off with a sharp deflation. Proposals for getting over to 100 per cent reserves range from suggestions that the banks be handed enough reserves as a free gift to suggestions that they be required to sell earning assets to the Federal Reserve. The gift proposal (in view of the service charge prospects) would be a bonanza for the banks, presenting them with large service-charge earnings on top of interest income; the other extreme would require them to turn the bulk of their earning assets into cash, and might sharply reduce net earnings.

Objections to the "100 Per Cent System" center around bank loans. Hundreds of thousands of American business firms depend heavily on bank loans for financing; and the claim of bankers to social usefulness rests largely on their role in guiding capital to investment opportunities through loans, and secondarily, through bank bond purchases. Under the "100 Per Cent System," what would become of this financing mechanism? No "hundred percenter" has intended to abolish it completely. Fisher proposed that time deposits be handled as at present (the 100 per cent reserve applying only to checking deposits), expect-

[20] Since the reserves gained by one bank would be lost by another, the resulting rise in reserve ratios could be achieved only by lowering the denominator of the reserve fraction (that is, the deposits). Something like three-fourths of all bank deposits might have to be wiped out by deflation—calling for a much bigger deflation than that of 1929–1933.

ing bankers to turn in their bonds (especially governments) to get the needed reserves, and to finance lending by time deposits. Simons proposed to put all deposits on a 100 per cent-reserve basis, but to let bankers serve as brokers in bringing together business borrowers and depositors with excess cash. Either way, there would plainly be a serious upset of business financing to weigh against the possible gains from monetary reform.

Like the Dahlberg plan, the "100 Per Cent System" is strange enough to disturb conservative minds. This psychological objection is somewhat weaker against the "100 Per Cent System," since the individual depositor would not have to change his ways, and thus the number of people directly shaken would be much less. On the other hand, the new situation under the "100 Per Cent System" would look very ominous to a businessman who wondered where future loans were coming from; so that, besides the damage done by actual lack of financing, there might be further damage from worries about sources of financing.[21] Like the Dahlberg plan, "100 Per Cent Money" should probably be written off as too shocking to be good practical counsel in foreseeable circumstances. We can be rather cheerful about this outcome, since the security reserve proposal (next in line for discussion) seems to embody most of the virtues of "100 Per Cent Money" in a much less disturbing form.

Security Reserve Proposals. Proposals for "security reserve requirements" for commercial banks were very prominent just after World War II.[22] These proposals are logical first cousins to

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[21] Simons had a strong feeling that it would be more healthful for business to rely on equity financing (sales of stock, use of retained earnings, and so forth) than on borrowing. If adequate equity funds were available, and if the problem of whether to sell stock or borrow were a close choice for business, Simons's case would be overwhelming. But actually it seems so hard to raise equity funds on satisfactory terms that the practical choice for American business is probably between heavy debt financing (bond issues plus bank borrowing) and a much reduced total volume of financing.

[22] The pioneer suggestion in this direction seems to have been that of Lawrence H. Seltzer early in the war ("The Problem of Our Excessive Banking Reserves," *Journal of the American Statistical Association*, Vol. 35, No. 209, March 1940, pp. 24–36). In 1945–1946, Seltzer, S. E. Leland, John Langum, and others carried on a lively discussion of the question. This discussion was not merely academic; the proposal was taken seriously as a policy possibility by the financial press and by the Federal Reserve authorities. See *Federal Reserve Bulletin*, January, 1948, for concrete proposals along this line that were laid before Congress by Chairman Eccles of the Board of Governors in December 1947.

the "100 Per Cent System." Broadly, they propose to require reserves of from 30 per cent to 100 per cent at commercial banks, but to ease the requirement by counting government securities toward the reserve. The effect of such a scheme would be much the same as that of a transition to 100 per cent cash reserves by enabling banks to cash their government securities, *plus* a subsidy on bank operations to replace part or all of the interest lost on the government securities.

As I mentioned in Chapter II, bank controls up to the present have been full of prohibitions and limitations on assets. But positive prescriptions that banks *must* hold specified assets have been limited to legal requirements for cash reserves. There is no fundamental barrier, however, to applying similar rules to other types of assets. To require banks (say) to hold against checking deposits not less than 20 per cent in the form of reserve balances at Federal Reserve Banks plus a further 40 per cent either in that form or in specified government securities would be entirely possible.

At the end of World War II, inflationary pressure was strong. The nonbank public was extremely "liquid." Households and firms had larger cash holdings than they felt to be necessary—piled up because of unavailability during the war of goods which they would have been delighted to accept in exchange for their money. At the same time, there was a tendency for banks to expand their assets, and thus to expand the public's cash further by "credit creation." The Federal Reserve authorities found that they could not oppose credit expansion effectively because (as I pointed out above) bank reserves were "open-ended." Banks had huge sums in Treasury certificates and Treasury bills which they could readily turn into cash. If a bank wanted to make more loans or to buy more long-term Treasury bonds on the open market, it was secure against any pinch on its reserves; it could quickly get more reserve funds by letting these short-term governments "run off." Open-market sales of securities by the Federal Reserve, aimed to check credit expansion, would not pinch the banks, as they would simply pass the pressure on to the Treasury. And the Treasury was not prepared to raise interest rates sharply, on its tens of billions of short-term debt, in order to persuade the banks

to buy enough new short-term securities to squeeze their reserves.[23]

The argument for imposing a "security reserve" at this stage can be put tersely as follows: In effect, short-term government securities had become equivalent to reserve funds for commercial banks, so that the banks were in the position of having vast excess reserves. The only way to deprive these securities of their character as reserves would be to turn them into effective earning assets, subject to noticeable price uncertainty, by paying more interest on them and casting loose "supports" on their prices. But control via bank reserves could be restored if these assets ceased to be *excess reserves* by becoming *required reserves.* A supplementary argument which endeared the scheme to some people (but, oddly enough, not to commercial bankers)[24] was that, once the commercial banks were required to hold government securities, they would have to buy new issues that were eligible for reserves whenever old ones were paid off; and, thus, when maturing issues were "refunded" by new borrowing, banks could not resist a lowering of interest rates. This plan offered the possibility of reducing interest charges in the postwar federal budget at the expense of bank earnings.

In the discussion of security reserves there was a good deal of confusion of tongues.[25] There was dispute as to whether all or most bank-held governments should be made reserve-eligible (with a high required ratio) or whether only certain classes (with a lower required ratio). There was dispute as to whether the requirement should be set so low as to pinch only banks with a relatively low ratio of cash and government securities to deposits, leaving other banks with a wide margin for further credit expansion, or whether it should be set so high that it would leave little

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[23] See pp. 115–116.

[24] Some bankers concerned with public relations, however, proved open to the argument that if bank earnings were held down in some such way, banking might be spared an adverse public opinion which would lead to more disagreeable burdens on banking—perhaps special taxes.

Note that the security-reserve plan would not *force* the government to lower interest on bank-held securities. This interest might even be raised. But the plan *would* force the government to have a policy on bank earnings; it could not be pretended that a high or low rate "just happened."

[25] For a sample set of security-reserve recommendations, in which I had a hand, see M. deChazeau and others, *Jobs and Markets* (Committee for Economic Development Research Study, New York: McGraw-Hill, 1946), pp. 91–95.

margin, at the expense of major starting difficulties for a great many banks and of serious crippling of bank lending functions.

With the shift of political attitudes against "controls" of all sorts, and with the "retreat to a higher price line" in late 1946 and early 1947, practical interest in this type of proposal faded.[26] There was less urgency about checking credit expansion, and more concern about financing firms which had not accumulated much cash during the war and which might depend on bank credit. The discussion showed, however, that if desired, a good approximation to the "100 Per Cent System" could be achieved by requiring security reserves. As I noted in Part II, the "credit-creation multiplier," which measures the amount of additional deposits that banks can create per dollar of excess reserves, has already fallen from roughly 10 to 1 in the 1920's to roughly 3 to 1 in the early postwar period as the result of higher reserve requirements and higher proportions of paper money and checking deposits in the cash supply. Thus, we have already traversed most of the way to the 1-to-1 ratio which a "100 Per Cent System" would bring about.[27] A security-reserve system which brought combined reserve ratios (cash plus securities) up to two-thirds might cut the credit-creation multiplier down to 1.4 or 1.3 to 1.

Commodity Reserve Currency. The "Commodity Reserve Currency" scheme (known also as the "Graham Plan" [28]) has been widely discussed among economists in late years, but is not well known to the public. Its central idea is fairly simple: to tie the value of the dollar to that of a "commodity composite" in exactly

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[26] Chairman Eccles's proposals to Congress in December 1947 reflected a revival of interest under the spur of fresh inflation arising from the corn crop failure and the prospect of continued heavy exports under the Marshall Plan.

[27] Perhaps this is the place to ask the reader a teasing question which I was asked several years ago by Mr. Victor Edelberg: In arguing the merits of a "100 Per Cent System," there is a tendency to assume without question that 100 per cent is the best possible reserve ratio. But the concrete arguments brought up aim to show merely that 100 per cent would be better than 20 per cent. Does the same argument show that 150 per cent would be better than 100 per cent? If not, how do we show that 100 per cent is the best place to stop? Why not 90 per cent, or 120 per cent?

[28] The plan was originally put forward by Benjamin Graham in *Storage and Stability* (New York: McGraw-Hill, 1937). It was taken up by Professor Frank Graham (no relation), of Princeton University, in several articles in *American Economic Review*. A revised version, calling for an international rather than merely a United States commodity standard, was published in Benjamin Graham, *World Commodities and World Currency* (New York: McGraw-Hill, 1944).

the same way that a gold standard tied the value of the dollar to that of gold.

The machinery of the scheme is a standing offer to buy and sell several commodities. But there would be no attempt to fix the prices of the commodities singly. What the government (or, under Graham's revised scheme, an international agency) would offer to buy would be *a bundle of warehouse certificates,* each certificate in the bundle giving control over a stated quantity of one commodity.[29] For the bundle, there would be a stated buying price; but this offer would not keep the individual prices from varying. If wheat could be had cheaper, the price of corn *or* rubber *or* coal *or* some other commodity on the list would have to be higher. Fixing the price of the composite would keep all the prices involved from rising or falling *at once;* but some could rise so long as others fell, and relative movements would not be blocked.[30] Graham proposes that the agency responsible for the standard should not merely announce its buying and selling offers and wait for people to come in and accept them, but should actively seek chances to buy and sell on the stated terms. That is, the agency would watch commodity markets hour by hour.

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[29] For example, in *World Commodities and World Currency* (p. 45), Benjamin Graham suggests that a $100 unit of commodities might include:

12 bushels of wheat,	16.3 pounds of tobacco,
12½ bushels of corn,	6.3 barrels of petroleum,
87 pounds of cotton,	7480 pounds of coal,
25 pounds of wool,	204 pounds of wood-pulp,
24 pounds of rubber,	506 pounds of pig-iron,
34 pounds of coffee,	35 pounds of copper,
9¼ pounds of tea,	4 pounds of tin.
300 pounds of sugar,	

(This list is aimed to represent these 15 commodities on a basis which straddles the relative values of their world production and their world exports in 1937.) To save fuss, it would be practical to deal only in large lumps, say, in $100,000 units. By the way, if the scheme were started with prices well above 1937, Graham would propose reducing the quantities. For example, if a price level 150 per cent of 1937 were accepted, the quantities would be scaled down by one-third.

[30] Thus, the scheme avoids the rock which wrecked gold-silver bimetallism: namely, the difficulty of fixing more than one price when trends in costs of production diverge. The fact that silver production was cheapened relative to gold production was a great source of monetary strain just before 1900.

By the way, the famous economist Alfred Marshall proposed to avoid this strain by a method which has much the same logic as the Graham Plan. Marshall's plan (which he called "symmetallism" in contrast with "bimetallism") was to fix the price for a *pair* of metal ingots—a small one of gold mated with a large one of silver, both of fixed weight. The price of silver could then fall on condition that the price of gold rose.

Whenever it observed a combination of prices which enabled it to buy a "hundred-dollar unit" for as low as $95.00, it should place buying orders at once on all the commodity markets involved. Whenever it saw a chance to sell a "hundred-dollar unit" as high as $105.00, it should sell at once on all the markets. And it should continue buying until the price of the "unit" climbed above $95.00—or selling until the price sagged below $105.00.[31]

Obviously, to make good on its selling offers, the agency would have to own a sufficient reserve of commodities—just as a gold-standard government had to own a sufficient reserve of gold and claims on foreign currencies. Thus, it would have to buy *before* it could offer to sell; and it is implied that to start operations, the agency would either have to price the composite above the market or else start buying in a time of recession. In a recession, the shrinkage of private demand would bring commodity prices down and would leave an excess of private supply over private demand at the agency's buying-price level, causing commodities to flow into the reserve.

The chief claim for the plan, of course, is that it would exert a direct stabilizing influence on the price level. If the commodities involved were well chosen and sufficiently important, the specific price level of these commodities could scarcely be stable when commodity prices in general were rising or falling at all strongly. Success in stabilizing the composite would mean that somehow the buying or selling pressure which the commodity-reserve agency was exerting reached out *through* the commodities in the composite to stabilize commodity prices on a wider front.

How could this happen? In the first place, through inter-commodity substitution. For example, meat and dairy products are not on the sample list of commodities that Graham has offered (and could not well be put on it [32]); but the list does include grains.

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[31] The idea of the "spread" between buying price and selling price is to keep every trifling price fluctuation from bringing the reserve agency into the market. A spread smaller than the 95–105 spread used here for illustration might suffice.

[32] To be suitable for inclusion in a commodity reserve, a commodity must be (1) compact and durable enough for storage; (2) well enough standardized and graded to make price quotations definite; and perhaps (3) free enough from monopoly control so that manipulation of its price will not put pressure on the composite. (Point 3 is debatable; some critics challenge Graham's inclusion of tin, on this ground.)

In the realm of meat and dairy products, fluid milk is not highly storable and meat is not adequately standardized. The only items which might be seriously considered for inclusion in a commodity reserve are butter and eggs.

In the price structure, however, grain is the most important cost item for livestock and animal products. Stabilizing the composite would set limits to the fluctuation of grain prices and, thus, somewhat wider limits to the fluctuation of livestock prices. But this result is not just a question of the prices quoted. It has to work out through flows of goods. For example, if meat prices tend to slump (because of a slump in demand, say), grain prices will slump because livestock raisers demand less grain. This lowered demand for grain will push down the price of the composite to the $95.00 buying price. Official purchases will drain off grain *along with the other commodities in the composite,* and thus keep grain prices from falling as far as they otherwise would. Less grain will be fed to animals; the flow of animals will be restricted; and thus meat prices will fall less than they otherwise would. Plainly, this sort of stabilization effect is too indirect to dominate the market for a special group of products like meat. But if demand slumps for *most* finished goods, most of the raw materials which make up the composite will have a reduced private demand; and the effect of official buying will take hold in the same direction on most markets.

We have just looked at the *price* effects of the scheme. There would also be *income* effects. When the composite was pressing against its $95.00 price floor and the reserve agency was buying, the incomes of producers would be maintained just as if private parties were buying. But the funds used for the purchases would not come out of the stream of private expenditure.[33] Therefore, the reserve agency would be adding to the income stream. This increased income would combat and limit the recession of output and of income which was behind the recession of prices. In the other direction, if the composite rose to its $105.00 price ceiling, sales by the reserve agency would withdraw income-account funds in competition with sales of currently produced commodities; but the funds withdrawn would not go back into the income stream.

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[33] The agency would, of course, issue paper money (analogous to gold certificates) against the goods it bought; this paper money could be deposited in the Federal Reserve Banks and drawn against by check to pay for commodities bought. Thus, there would be no taxes to finance these purchases; they would be self-financing in just the same sense that gold purchases are now self-financing. When the agency sold commodities, it would be obliged to retire commodity certificates; but the proceeds of sales would provide checkbook funds to pay for the certificates retired.

Thus, a rise of the composite price would lead to commodity-reserve operations which would combat and limit the inflationary swing which was behind the upward drift of the price level.

Like a gold reserve system, a commodity reserve system could become disorganized. If things went wrong, the reserve might pile up until it burst the warehouses; or, in the other direction, the reserve might run out. If the reserve ran out, of course, the offer to sell a "$100 unit" at $105.00 would have to be suspended. For example, suppose (what is quite likely to happen) that a persistent upward pressure on the price level arises from trade-union and government policies which raise wages.[34] Prices in the composite, being stable, would be falling *relative to other prices.* Thus, reserve commodities would be good bargains, and would be substituted where possible for other commodities. At the same time, the upward drift of wages and nonreserve commodity prices would boost costs of production for reserve commodities, tending to reduce their output. Thus, a gap would open out between the consumption and the output of reserve commodities. This gap could be filled temporarily by draining the commodity reserve; and the resulting deflationary pressure might slow the wage-price advance (by the unpleasant method of creating unemployment). But if the upward push were strong enough (and sufficiently immune to unemployment), the only way to keep a commodity-reserve system in continued operation would be by successive "devaluations"—that is, by reductions in the physical quantities of goods in the "$100 unit."

Need to Combine Monetary with Fiscal Measures. All the possible monetary panaceas just examined (since we left the crank schemes of Social Credit, Ham and Eggs, and crude stamp scrip) have obviously a good deal of sense in them. But critical study shows that no one of them could be trusted to prevent either an inflation or a deflation if other things went wrong. We must

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[34] Another kind of upward pressure which might lead to breakdown would be price-raising applied to commodities in the composite. If the government took direct action to raise all the farm prices in the composite 50 per cent (to illustrate), buyers of the composite would be getting the other commodities (minerals, and so forth) fabulously cheap by buying a composite $100 unit for $105.00 and selling the farm products at high prices. Producers of the other commodities would find their prices disastrously low as long as the reserve agency went on selling. If the reserve was not quickly exhausted, they would try by political means to have the selling price raised or the selling offer withdrawn.

view them, then, as possible elements in *policy combinations* looking toward stabilization.

Which of these schemes are likely to have practical usefulness? The question is debatable, and my conclusions are only tentative. But a sketch of these tentative conclusions should at least be useful to help you locate my prejudices; so here it is:

1. Along the "100 Per Cent" line, it seems to me desirable to *limit* the elasticity of bank credit, although it is not essential to *eliminate* it. Therefore, my policy utopia would include sharply increased bank reserve requirements (using the security-reserve method). But I would settle for a bird-in-hand of 50 per cent or two-thirds as a ratio for cash reserves and security reserves combined, rather than hold out for a faint hope of the 100 per cent bird-in-bush.

2. The commodity-reserve idea strikes me as worth a trial if (*a*) it was started at a time when a reserve could be built up without raising price levels (that is, in a recession) and if also (*b*) there were ground for confidence that it would not be overthrown in the visible future by upward pressure on wages or on prices of commodities included in the composite. I can *imagine* these two conditions being satisfied within the next few years; but I don't *expect* that they will be. Condition (*b*), however, is political; and an economist's forecast about it is far from authoritative.

3. The Dahlberg form of the "melting money" idea strikes me as possibly worth a trial if (*a*) postwar experience confirms the view that the American economy tends to have a chronic depression, if also (*b*) studies of business policy show that very low interest rates would substantially help investment, and if, besides, (*c*) public opinion can be prepared to limit the "shock effect" discussed above. I shall be very much surprised if these conditions are ever fulfilled—much more if they are fulfilled within the next few years.

Of all the schemes that I have sketched, the one which comes nearest to being a complete stabilization policy in itself is the commodity-reserve currency plan. The reason why it is so much more convincing than the other schemes is that it contains a mechanism for getting money into or out of circulation which

promises to work in the right direction at the right time—and to take hold on the incentives of private firms and households effectively.

Looking more closely at this mechanism, one sees in it a way of adding to the *income stream* in a recession and subtracting from the income stream in a boom. In this feature the commodity-reserve plan is like taxes and government expenditures.

The above finding points up the fact that monetary measures have to be combined with measures in the field of public finance if they are to be effective in economic stabilization. Consequently, the next chapter (XXI) will be devoted to "fiscal" plans for stabilization; the chapters after that (XXII and XXIII), to effective combinations.

— *Chapter XXI* —

FISCAL FORMULAS

Range of the Chapter. Like Chapter XX, this chapter deals with relatively simple proposals which purport to be formulas for general stabilization. As in Chapter XX, the proposals considered range from those of "cranks" to those of academic and "practical" sobersides.

On the whole, the schemes analyzed are both more complex and more deeply thought out than those sketched in Chapter XX. While the authors of "money plans" often leave the public-finance counterparts of their plans vague, the authors of fiscal formulas are apt to be more explicit about money. Of the schemes analyzed, only the "Townsend Plan" is strictly crankish.

The Townsend Plan. The "Townsend Plan" is the nucleus of a continuing movement for old-age pensions.[1] It has a chameleon-like way of changing color any time you stop looking directly at it. The description offered here is intentionally that of an early form of the "plan," describing it as of 1935, which was the time when it was a fairly serious factor in American politics, scoring 56 votes in the House of Representatives on a proposal to incorporate it in the Social Security Act (then pending). Do not be surprised if you find the nearest "Townsend Club" supporting rather different measures today.

The central Townsend Plan notion was one of economic perpetual motion.[2] The proposal was to increase the spending power

[1] One of the manifestations of the "reform" tradition is the tendency for semi-permanent organizations to crystallize around economic panaceas. The Henry George "single tax" plan, the Townsend Plan, "Thirty Dollars Every Thursday" (as revised), and "Technocracy" all have organizations with chapters in many parts of the country; and Social Credit has organizations in Britain and Canada. The persistence of the single-taxers traces partly to an endowed "educational" program.

[2] For details and documentation, see the pamphlet *Economic Meaning of the Townsend Plan* ("Public Policy Pamphlet No. 20," Chicago: University of Chicago Press, January 1936). I was responsible for the research underlying this pamphlet

of the aged by paying them "pensions" of substantial amount—$200 a month was the standard figure cited. These pensions were to be financed by a "transactions tax" of 2 per cent on everything bought and sold in the United States. A 2 per cent tax would obviously be far from crushing, and $200 a month for everybody qualified for a pension (estimated at 7 to 8 million people) obviously a very large contribution to consumer spending power—well toward half of consumer spending at the time of the proposal. Hence, it was easy to make out a case that such a scheme would guarantee prosperity.

The trouble with this picture is the usual trouble with perpetual-motion schemes. Either the energy-output of the machine would evaporate if put to the test, or some outside source of energy would have to be wired in. On closer inspection, the charm of the Townsend Plan proved to rest on an ingenious mixture of exaggeration and understatement. The impression was spread that a 2 per cent "transactions tax" would be roughly equivalent to a 2 per cent retail sales tax, which most people regarded as trifling. Actually, of course, it would be a retail sales tax *plus* taxes on wholesalers, manufacturers, and so forth. These other taxes would add greatly to its weight. On the other hand, the yield of the 2 per cent transactions tax would be only a fraction of the pension bill, at $200 per month per head. As of 1936, very roughly, the tax would have been perhaps three times as heavy as a 2 per cent retail tax, and the amount of pensions it would actually finance perhaps one-fourth of the $200 promised.[3]

The bill in Congress which received the 56 votes mentioned above contained an innocent little "joker" calculated to balance the books by sacrificing the promised scale of pensions. It proposed to levy the "transactions tax" plus a few minor taxes and

(which carried the signatures of 22 economists and other social scientists at the University of Chicago), and acted as drafting secretary. Incidentally, this experience suggested that one reason why such a "plan" finds it so easy to accumulate a loyal and convinced following is that counter-propagandists commonly shoot at caricatures of the plan rather than at the actual proposals of its leaders; so that the leaders can readily show the followers that opposition rests on misrepresentation. The true points of vulnerability are often overlooked.

[3] Obviously, the inventor of a scheme for getting perpetual motion by using an electric motor to run a generator could make a very good showing if he had to count only one-third of the kilowatt-hours that went into his motor, but could count the kilowatt-hours on his output-meter at four times the actual power from his generator.

put the proceeds in a special fund. Pensions were then to be paid each month out of the inflow into the fund three months earlier —"not to exceed" $200 per pensioner. A strategic fact widely overlooked in Townsend Plan discussions was that the bill containing this provision was introduced in Congress on April Fool's Day!

The Budget Annually Balanced. From this clear-cut crank scheme, we turn to a fiscal formula of the utmost respectability—the rule of a government budget annually balanced or, if the government is in debt, showing an annual surplus for debt retirement. This rule was the official standard of most western countries until fairly recently, and has been "honored in the breach" much less than most of the guiding rules of government.[4]

From the monetary standpoint of this book, this standard must be criticized. The record shows that it has not worked out too well as an economic stabilizer. The annually balanced budget calls for increasing tax rates and cutting government outlays whenever there is a slump—measures which are apt to intensify the slump.[5] It encourages cutting taxes and relaxing limits on government outlays whenever there is a boom—measures which are apt to intensify the boom. If we want to get effective stabilization, we must improve upon this rule.

The object of discussing the annual-balance standard so early in the chapter, however, is not to ridicule it, but to look for salvage. With all its defects, this standard has had tremendous advantages; and alternative plans must be challenged to see whether they also capture those advantages.

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[4] In the United States, the period 1792–1930 shows only 27 years of deficits (outside of wartime) in 121 years. Between the Civil War and 1930, there were only two peacetime years (1894 and 1909) when as much as 10 per cent of expenditure was financed by deficits.

[5] Before World War I, the adverse effect on domestic stability may have been mitigated by the character of the taxes involved—general property taxes for local governments and principally import duties for the federal government. Local governments were under pressure to raise tax rates or cut expenditures in a slump only as property-tax collections fell into arrears. Federal tariff increases had the effect of shifting the trade-account balance with foreign countries in a "favorable" direction—tending to revive employment here and to "export unemployment" to Europe.

With the recent overwhelming importance of sales and excise taxes and income taxes (all of which are only very indirectly linked with foreign trade, and some of which are very cycle-sensitive), the destabilizing effect of such a fiscal rule is intensified.

What are the virtues of the annual-balance standard? Notably:

1. Giving a yardstick for the worth-whileness of public expenditures.
2. Directing attention to the *composition* (as distinct from the size) of revenue and expenditure.
3. Giving safeguards against inflation.
4. Sustaining "confidence."

These advantages will be taken up in turn.

1. A yardstick for the worth-whileness of public expenditure is essential. There is never any lack of claimants for public money. Most localities have pet development projects in which unlimited amounts of resources could be sunk. "Rivers and harbors" are a hardy perennial: maximizing the navigability of our waterways could absorb tens of billions of dollars a year. Improvement of public buildings, roads, and recreation facilities has immense possibilities. Our military leaders, having discovered billions during World War II, can now readily develop giant projects. In agriculture, there are no clear limits to desirable soil conservation. Housing, public health, and education all have unsatisfied claims. Some of these proposals can be weeded out as doing more harm than good. But, if we had the resources, we could clearly expand government expenditures by tens of billions per annum in directions which would give us real advantages. Furthermore, if the claims of such uses of funds to expand actual government services ever ran out, there are millions of deserving people who would like government "transfer payments" to reinforce their ability to buy things for their private use. Veterans, farmers, the old folks, the unemployed, the physically handicapped, the young in need of education, and government creditors—all have claims with a good deal of moral and economic validity.

Far short of the point where the objects of spending are not worth having on their own account, we have to set limits to what the community can afford. The most desirable projects have to be cut short at a "margin." To judge whether this "margin" is well chosen, we have to weigh one marginal proposal against another. If we can't afford better schools, we say in our saner mo-

ments, then we certainly can't afford free municipal moving pictures. But there are always several sorts of margins. If we expand one line of government expenditures, we can *either* contract some other line of expenditures, *or* raise taxes, *or* increase the deficit. Of these options, most people find it easiest to visualize raising taxes. The question whether a specified tax increase is worth incurring for the sake of a specified outlay is our best touchstone of the seriousness with which politicians or the voters take proposed expenditures.

2. People who drop the idea of a balanced budget out of their thinking fall too easily into the habit of looking only at the total of revenue and of expenditure (or even only at the size of surplus or deficit). The composition, as well as the size, of revenue and expenditure needs analysis—not only from the standpoint of fairness and "value for the money," but from the standpoint of monetary effects. A sales tax, for instance, reduces consumption markets more (per billion of revenue) than an income tax. On the expenditure side, a billion dollars spent in one direction (say, on highways) may increase private investment where a billion spent in another direction (say, on building government "yardstick plants" in a variety of branches of manufacturing) would decrease private investment. Policy analysis gains a good deal by checking over what can be done within the framework of a balanced budget in the direction of economic stabilization, even though in the end other fiscal rules may prove better.[6]

3. While inflation is possible with a balanced government budget (witness American experience in 1947), acute inflation is not. Advocates of old-fashioned "soundness" in public finance generally put a good deal of stress on this fact. The most "modern" views on taxation sound rather different; but you must not overrate the divergence. According to these modern views, the basic justification for taxes is that otherwise the necessary government expenditures would lead to inflation.[7] For the production

[6] In Great Britain a good deal of stress is put on this side of fiscal policy. Cf. U. K. Hicks, *Public Finance* (Cambridge, England: Cambridge University Press, 1947), and the 1944 "White Paper," *Employment Policy* (American edition, New York: Macmillan, 1944), pp. 24–26.

[7] In the utopia implied by this view, public expenditure would be carried to a "margin" at which an extra dollar of public spending in each direction would be just equal in its effect on public welfare to a foregone dollar of private expenditure.

of goods and services to sell to the government generates income, just as does production for sale to private parties. If the entire income of the country is allowed to impinge on the market for the part of goods produced for sale to private parties, that market is bound to feel inflationary pressure. Therefore, taxes must siphon off enough of the income to bring spending power into line with available supplies.[8]

Enough taxation, by this "modern" standard, is enough to avert inflation. Just how much this means varies with the type of tax levied and with the attitudes which affect private spending; and because of the forecasting difficulties cited in Chapter XIX, there is always room for some argument about the figures. It may prove hard to reach a working agreement as to how much taxation is enough. Furthermore, if "enough" is recognized as a matter of judgment, politicians are subject to a steady temptation to set their tax goals too low (taxes being always unpopular), and thus be involved in a series of errors slanted toward the inflationary side.[9] Either of these difficulties may be intense enough to justify annual balance of the budget—as a rule of thumb which will yield smaller errors in tax policy than imperfect following of the more sophisticated "modern" rule.

4. "Confidence" is always a consideration hard to evaluate. On the whole, businessmen are more apt to feel at home in the world if the tradition of sound finance and a balanced budget is followed. Errors on the inflationary side may or may not disturb confidence. But in case of a slump, there may be this dilemma: To boost tax rates to cure a slump-induced deficit will eat into "confidence" by impairing the spending power on which business depends for markets. But to maintain or lower tax rates and accept the deficit will eat into "confidence" by displaying financial "unsoundness." Thus, the "confidence" argument is inconclusive for this crucial case. This brings us to the question of the next section—whether the balanced-budget standard cannot be

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[8] For a neat exposition of this point of view, see the "Functional Finance" chapter of A. P. Lerner's *Economics of Control* (New York: Macmillan, 1944), especially pp. 307–308 and 316–321.

[9] Another temptation, on which advocates of "economy in government" lay much stress, is to let expenditures grow whenever there is any reasonable hope that existing taxes are nearly adequate and new taxes need not be levied.

amended to cure its destabilizing effects without throwing away the virtues which make people think it "sound."

Budgets Balanced But Not Annually: "Swedish Budgets." Some of those who reject the standard of a budget annually balanced are in favor of dropping the idea of balance. But there are two main proposals for trying to preserve the advantages of "balance" and at the same time to get away from the drawbacks by deleting the word *annually* from the formula.

The first of these alternative formulas for balance was a scheme to balance the budget *over a business cycle*—running deficits in depression and surpluses in prosperity, and planning to have the surpluses match the deficits over a stretch of years. Just before World War II, schemes of this sort were widely discussed under the label of "Swedish Budgets." The name testified to Swedish pioneering in this line of thinking and to the actual adoption of such a scheme in Sweden—just in time to be shelved because of wartime difficulties.

Such a scheme would preserve many of the basic advantages of budget-balancing. The symbols would still be there, and "confidence" would probably stand up better than it would if budget-balancing were abandoned. New lines of government expenditure would call for new taxes; and public willingness to accept new taxes would survive as a test of the earnestness of public demands for new government projects. The standard would call for an excess of Treasury cash income over cash outgo in prosperity, giving substantial safeguards against serious inflation.

Of course, there is always uncertainty as to what the next "business cycle" will be like—long or short, with a sharp or a mild depression, and with or without a sharp price rise on the upswing. Consequently, there is bound to be uncertainty both about revenue from specified taxes and about some expenditure items which have a natural tendency to vary with the cycle.[10] To ensure that the balance actually works out calls for some guarantee. One widely favored proposal has been to charge one-fifth of each

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[10] These expenditures have some elements which tend to rise with business volume (notably, the provision of facilities to ease "bottlenecks," such as new post offices and airports). But more important are those which rise as business volume shrinks and unemployment grows—such as payments to the aged, to the unemployed, to veterans, and to farmers.

year's deficit as a debt-retirement expenditure in each of the ensuing five years.

Proposals of this sort commonly run in double harness with proposals to segregate the government's "operating budget" from its "capital budget," and to use the latter as an economic stabilizer. Under the "capital budget," projects for public works, and so forth, would be planned some time in advance, and the authorities in charge of public works would have legislative authorization to carry out a stated list of projects in the next year—always *more* than it is expected will prove urgent. If the economy is prosperous, the lag between authorization and construction may stretch out. If the economy is depressed, the lag may be shortened, so that the list of projects authorized-but-not-in-progress will be worked down. If the operating budget carries a fairly steady flow of funds set aside for the capital budget, this plan will mean that actual *capital outlays* will outrun funds set aside in bad years but fall short of appropriations in good years.

Budgets Balanced But Not Annually: "Agreed-High-Level" Balance. The "Swedish Budget" tones down some of the objections to annual balance. In particular, if a deficit is produced by a slump, the requirement to raise taxes does not take hold very hard until the slump has lasted some time. But this standard does call for raising taxes somewhat if a slump last year has produced a deficit which is apt to interfere with recovery.

A way to get around this difficulty while preserving the virtues of budget-balancing has been suggested by Mr. Beardsley Ruml [11] and taken up by the Committee for Economic Development. "Its basic principle is to set tax rates to balance the budget and provide a surplus at agreed high levels of employment and national income and thereafter to leave them alone unless there is some major change in national policy or condition of national life." [12] This plan differs from the "Swedish" standard because it lacks adjustment machinery to guarantee the averaging out of deficits

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[11] See the pamphlet, *Fiscal and Monetary Policy* by Beardsley Ruml and H. Chr. Sonne (Washington: National Planning Association, 1944).

[12] Committee for Economic Development, Research and Policy Committee, *Taxes and the Budget* (New York: Committee for Economic Development, 1947), p. 22; quoted by permission. Note that the Committee means by "budget" the "consolidated cash budget" which consolidates the accounts of all government agencies and thus eliminates inter-agency payments which confuse some budget pictures.

and surpluses over a business cycle. If the "cycle" should actually contain chiefly prosperous years, there would be a surplus, on the average. If most of the years in the "cycle" should actually be depressed, there would be a deficit, on the average.[13]

This standard would still call for more taxes if government expenditures were expanded, and for expenditures cuts if taxes were reduced. It would thus retain the comparison between taxes and expenditures at the margin on which budget-balancers rely to prevent extravagance in government. Incidentally (a point which will loom large in later chapters), it would be freer than either of the other budget-balancing standards from dependence on business forecasting.

Budgets Deliberately Unbalanced? Both of the two variants of budgets-balanced-but-not-annually take it for granted that business will go on having fairly sharp ups and downs. They are aimed at reducing or eliminating the tendency of government budgets to make fluctuations worse. But they are not aimed at active countermeasures (except to a limited extent through "capital budgets").

Either of the two variants should set a bottom to depressions higher than we would get under budgets-balanced-annually. Under either variant, a slump would reduce the government's drain of money out of the income stream (through taxation) and to some extent increase the government's release of money into the income stream (through expenditure). The shrinkage of markets for consumption goods, and indirectly for investment, would thus be limited. Think of it in this way: If we had such a budget plan and then reverted, during a depression, to budgets-balanced-annually, the required increases in tax rates and the required reductions of government expenditure would plainly weaken the markets for the products of private industry, and would thus intensify the depression. But under either variant of budgets-balanced-but-not-annually, the budget would be passive rather than active. Any force toward recovery which it set up would be weakened as soon as partial recovery brought the budget back toward balance.

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[13] *Proviso:* If prices rose greatly during a prosperity period, a later depression at a high price level might produce a budget surplus, if the basis of taxes were not fully adjusted to the price change.

It is uncertain how such a policy would work out. Conceivably, such a scheme, with good luck (and with good handling of the "capital budget" under the scheme, plus shrewd monetary policy), could hold business fluctuations within narrow bounds. On the other hand, such a scheme might not prevent the lowest troughs of business from lying as low as 75 per cent or 80 per cent of potential output,[14] and output might average well below 90 per cent.

Oddly enough, either extreme optimism or extreme pessimism may find this the best program. If an agreed-high-level budget can practically iron out fluctuations, there is no need to look further. If no combination of policies can prevent business from dropping into really serious depressions, the implication is that forecasting is very unreliable; and the agreed-high-level budget is a program which minimizes reliance on forecasting.

Moderate optimism, however, may give a very different answer. If this type of budget is likely to permit substantial fluctuations of business (or "stagnation" at a low level), whereas a budget policy not tied to "balance" could do considerably better, then budget-balancing is a stumblingblock to policy.

How much can be done with "automatic" devices that would fit within an agreed-high-level budget will be examined in Chapter XXII. How much can be done with forecasting and discretionary policies (some of them incompatible with such a budget) will be examined in Chapter XXIII. But before we start to look at the "automatic stabilizers" of Chapter XXII, we need to survey the formulas which can be adopted if budget balancing is abandoned.

Policies Organized around "the Nation's Economic Budget." If we are going to consider dropping the balance of the government's budget as a standard of policy, we are bound to look for alternative standards. The natural focus for the discussion is what is known as the "Nation's Economic Budget." This is a systematic picture which goes beyond the government's revenue and expenditure and considers also the income and expenditure of firms and of households—all in relation to estimates of potential

[14] This figure seems to be the expectation of the businessmen interested in the scheme. Just before issuance of the Committee for Economic Development statement cited above, Mr. Paul Hoffman (chairman of CED) declared in a public address that "the drop between the peaks and valleys probably can be held to 20 per cent, or perhaps 15 per cent. (*New York Times,* November 1, 1947.)

output. Such a "Budget" is called for by the Employment Act of 1946 as part of the President's annual Economic Report.[15]

As presented in the first of these Economic Reports,[16] the Nation's Economic Budget table was strictly a description of the past (1939, 1944, and 1946). The 1946 figures ran as follows, in billions of current dollars:

Economic Group	*Receipts*	*Expenditures*	*Excess (+), Deficit (—)*
CONSUMERS:			
Income after taxes	142	—	—
Expenditures	—	127	—
Savings (+)	—	—	+15
BUSINESS:			
Undistributed profits and reserves	11	—	—
Gross capital formation[17]	—	27	—
Excess of capital formation (—)	—	—	—16
INTERNATIONAL:			
Net exports	—	5	—
Net expenditures on foreign account	—	—	—5
GOVERNMENT (Federal, State, Local):			
Receipts from the public other than borrowing	57	—	—
Payments to the public	—	55	—
Excess of receipts (+)	—	—	+2
ADJUSTMENTS:			
For government transfers to public[18]	—16	—16	0
For government transfers abroad	—	—4	+4
Total, Gross National Product	194	194	0

[15] See the comment in the First Annual Report of the Council of Economic Advisers (reprinted in *Federal Reserve Bulletin,* January 1947, pp. 13–25), p. 15. The Act calls for a Report "setting forth (1) the levels of employment, production and purchasing power obtaining in the United States and such levels needed to carry out the policy declared in section 2; (2) current and foreseeable trends in the levels of employment, production and purchasing power"; also, a review of the past year and a program for the next. The "policy declared in section 2" focuses on "maximum employment, production and purchasing power."

[16] 80th Congress, 1st Session, House Document No. 49, *Economic Report of the President* (Washington, 1947), p. 7.

[17] This basis implies that business costs (except depreciation) are canceled out in the accounts against corresponding receipts.

[18] This adjustment is made to eliminate duplication resulting from inclusion of veterans' benefits, and so forth, both in government expenditures and in consumers' receipts.

Presenting such a Budget for the recent past (or even a forecast of how it will look in the near future if specified policies are followed) does not provide any such definite rule of policy as presenting a budget in the old-fashioned sense. There is no problem of how to "balance" the Nation's Budget: whatever happens, the receipts and expenditure columns are bound to have equal totals, because of the system of definitions used.[19] The question is whether the balance will be with full employment or heavy unemployment, whether it will be at inflationary or non-inflationary price levels, and what proportion of the total will be found in specific items.

Although the Nation's Budget itself is neutral toward policy, it may be used to focus policy. Two specific formulas—employment guarantee and consumer-expenditure guarantee—can be tied rather directly to the Budget. And even if these formulas are rejected, the Nation's Budget approach may put shape into proposals for "compensatory financing" of government.

Employment-Guarantee Proposals. Almost everybody agrees that unemployment is an evil. The Congressional declaration in the Employment Act of 1946 in favor of "maximum employment, production, and purchasing power" was an expression of national consensus.[20]

If unemployment is an evil, why not *guarantee* full employment? This was the proposal behind the early stages of the Murray Full Employment Bill, which, as amended, became the Employment Act. In terms of the Nation's Budget, the standard was a matching of a forecast of forthcoming expenditures against the nation's capacity to produce. If the sum of the amounts fore-

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19 That is, the two columns are different itemizations of the same total. This is one more example of the long list of "equations" which have to balance for definitional reasons, of which several appeared in Parts II and IV.

20 The vote in the Senate for the Employment Act of 1946 was actually unanimous, although there were dissenters in the House.

Note, however, that the term "full employment" proved too charged with emotion to be kept in the bill. The "maximum" formula finally adopted is rather curious; it has to be carefully construed if it is not to share the disadvantages of the term "full" in more acute form. Does "maximum employment" mean that it is national policy for all housewives, students, and retired people to take jobs? Does "maximum production" mean that we want to use up all our oil reserves as fast as possible? Does "maximum purchasing power" imply continuous inflation? Interpretation can take care of all these questions. But one must suspect that language which is so loose means quite different things to different groups of its supporters.

cast for consumer expenditures, business capital formation, and government outlays fell short of a full-employment gross national product, the Bill provided that policy should step in. Perhaps policy changes could increase private expenditures—for example, by cutting taxes in order to give consumers more money to spend. But any remaining "deficit," under employment-guarantee proposals, would be filled by increasing the government expenditures.

The employment-guarantee policy was considered and rejected by Congress in 1945–1946. In good part, rejection was founded upon grounds apart from the merits of the scheme as economic policy: (1) The scheme was advocated largely by people who were afraid of chronic depression, and many people were against it simply because they objected to giving implied government backing to the "stagnation theory." (2) The scheme was "sicklied o'er with the pale cast of thought," and drew down the opposition of everybody who suspected "theorists." In particular, the proposal was tagged with the names of Lord Keynes, Sir William Beveridge and Henry Wallace, and many people automatically lined up against it through prejudice against such names.[21] (3) Many of the business and professional groups had been struggling, under wartime full employment, with the "servant problem" at home and the "personnel problem" at work, and had formed (or confirmed) a notion that the threat of unemployment was needed to make workers "reasonable." (4) The political campaign for the employment-guarantee plan had tried to build support in 1944–1945 on fears of heavy unemployment right after V-J Day. While the lack of post-V-J Day unemployment did not cause the defeat of the guarantee scheme, it made impossible the revival of that scheme in early 1946 when the bill actually came up for passage.

While the guarantee scheme was not rejected strictly on its merits, it probably deserved to be rejected, for several reasons: (1) The scheme relied heavily on the accuracy of forecasts of pri-

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[21] It is a sad fact that in the press and in business circles (as well as in the academic world) there is an anti-Keynesian "party line" which blinds its adherents to substantive issues. The pro-Keynesian "party line," which is perhaps equally blinding, does not go far outside the academic and civil service worlds—except in labor circles. In the political climate of 1945–1946, a plan linked with both Keynes and Wallace would probably have been defeated if it had merely been a plan to let anybody drop letters in mailboxes when he chose!

vate expenditure. If forecasts were seriously in error, the policies adopted to execute the "guarantee" might actually overshoot and yield inflation, or undershoot and leave substantial unemployment. Forecasting is not reliable enough to carry the load. This point was made not only by conservative opponents of the scheme in politics and business but also by government officials who might have become responsible under the scheme—notably Budget Director Harold Smith. (2) The scheme ignored the price-policy "dilemma." [22] There is a real danger that an expansion policy aimed at forestalling unemployment would run off into price increases without fully curing the unemployment. An employment-guarantee would commit the government to continue stimulating inflation in such a situation—or else to embark immediately on price control. (3) If reliance for adjustment were placed chiefly on government expenditure, we might find government buying many things which were not "worth the money." This objection might be obviated by relying more heavily on taxes, "transfer payments," and monetary policy, but somehow the linkage between the guarantee idea and expenditures was strong. (4) Even though prices did not misbehave, the manipulation of government expenditures, and so forth, might prove too weak to carry out the guarantee. The spectacle of a government unable to carry out a definite commitment would do no good to the cause of economic stabilization, or, more broadly, to public confidence in government.[23]

Expenditure-Guarantee Proposals. A milder form of guarantee has been proposed by Dr. John H. G. Pierson.[24] Instead of trying to hold the whole national product at a full-employment

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[22] See p. 424.

[23] *Political Comment:* Having such a commitment might, of course, force such an improvement of forecasting and control techniques as to bring stabilization goals much closer. But it is far from clear that having a guarantee would actually put the government "on the spot" in a way that would result in the improvement of techniques. A campaign for the adoption of such a guarantee naturally stresses the stabilizing effect of public recognition of the guarantee itself —and the result might be overconfidence in the effectiveness of the techniques available. Furthermore, in the legislative process there is a tendency to trade away some unpopular substantive policies which might help execute the guarantee, in order to keep the guarantee in the bill.

[24] See John H. G. Pierson, *Full Employment and Free Enterprise* (Washington: Public Affairs Press, 1947), pp. 35–73. Note that Dr. Pierson does not avoid policies toward construction, inventories, and so forth; but he limits *guarantee* proposals to consumer expenditure.

level, he proposes to focus on the consumer-expenditure item in the Nation's Budget, and to "underwrite" a stated level of such expenditures. Instead of thinking in terms of plans for a fiscal year ahead (involving 18-month forecasts), he proposes to deal with expenditures for three-month periods (involving roughly five-month forecasts of relatively stable magnitudes). Instead of relying for adjustment on changes in government purchases of the products of industry, he relies on changes in taxes and transfer payments to affect the incentives of consumers through their "disposable income."

The objections to employment guarantees do not, on the whole, apply to this scheme. Its forecasting problems are simpler. The risks of trouble with the inflationary "dilemma" are milder, since the guarantee can presumably start with a relatively modest level of expenditure if necessary. Reliance on transfer payments and taxes is an answer to the argument that government purchases might absorb resources that would be better used to supply private demands. Objectives are more limited than those of a full-employment guarantee.

In addition to building backfires against these arguments, Pierson argues that his scheme would be good for business "confidence." "Underwriting" of a stated level of aggregate consumer expenditure (growing through time with the growth of productive capacity) would be comprehensible and, Pierson holds, reassuring to businessmen. The basis for business calculations being steadier, the scheme should benefit investment. Thus, Pierson argues that the level of activity and employment for any given level of taxes and government expenditures would be higher under his scheme than under alternatives. Consequently, in case private demand proves inadequate to maintain full employment, Pierson expects his scheme to reduce the resulting government deficits and to hold down the growth of public debt.

While this limited-objective scheme is clearly more workable than an employment guarantee, its feasibility is still far from certain. Tax adjustments and adjustments in existing types of transfer payments may prove insufficient. If this is the case, Pierson is inclined to recommend a special type of transfer payment designed for the purpose. As a matter of economics, this plan would work. But political difficulties remain. If the public

can be persuaded to establish a national system of family allowances (which is roughly what Pierson's special transfer payment would amount to), can it be persuaded to *reduce* such allowances if prices rise and *expand* some people's allowances because other people are out of work and some prices are falling?

General Case for Unbalanced Budgets. Even if concrete guarantees are rejected—and the Pierson proposal deserves further consideration—there is a general case for freeing government policy from budget-balancing rules. The argument for the "agreed-high-level balance" system as against the annual-balance system is largely freedom from rules which would call for tax reduction during inflation and tax increases during depression. But the same logic says that it would be still better to secure tax increases during inflation and tax reductions during depression. Thus, even the agreed-high-level balance might obstruct sound policy.

Whether enough could be gained by this additional freedom in using budgets toward stabilization to offset the advantages of budget balancing listed above is debatable. The issue turns largely on questions to be taken up in the next two chapters, and therefore, must be left for Chapter XXIV.

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Note on Alternative Points of View and Supplementary Readings

On the "Swedish Budget," see G. Myrdal, "Fiscal Policy in the Business Cycle" in *American Economic Review,* Papers and Proceedings, March 1939, pp. 183–193.

For strong statements of the case for "compensatory" budgets, see A. P. Lerner, *Economics of Control* (New York: Macmillan, 1944), pp. 302–322, and A. H. Hansen, "Stability and Expansion" in B. M. Anderson, J. M. Clark, *et al., Financing American Prosperity* (New York: Twentieth Century Fund, 1945), especially pp. 206–218.

On the logic involved in the "Nation's Economic Budget," see *National Budgets for Full Employment* (Washington: National Planning Association, Planning Pamphlets, Nos. 43–44, 1945). See also the controversy between Jacob Mosak and myself: A. G. Hart, "Model-Building and Fiscal Policy," *American Economic Review,* September 1945, pp. 519–530; J. Mosak, "National Budgets and National Policy," *ibid.,* March 1946, pp. 20–43; A. G. Hart and J. Mosak, "National Budgets and National Policy," *ibid.,* September 1946, pp. 632–641.

— *Chapter XXII* —

AUTOMATIC STABILIZERS: POSSIBILITIES AND LIMITATIONS

Where to Look for Automatic Stabilizers. As I pointed out above,[1] the uncertainty of forecasting puts a premium on policies which are "automatic." That is, we need arrangements which will stimulate activity in a slump or check it in a boom—and which will go into action without waiting for elaborate processes of factfinding and decision.

To judge whether a particular device is an automatic stabilizer, we can apply several tests:

1. Does it push the government's budget toward deficit in case of a slump and toward surplus as business improves?
2. Does it expand the public's stock of cash in a slump and reduce it in high prosperity?
3. Does it tend to reduce the public's demand for cash in a slump and increase it in high prosperity?
4. Does it go into action without waiting for fresh policy decisions?

According to these tests, the United States has gone a long way in adopting automatic stabilizers—farther than most people realize. Along the way, however, we have picked up a few automatic *de*stabilizers (those procedures which draw opposite answers to the test questions). A splendid example of both processes is unemployment insurance. The basic structure of unemployment insurance is that of a stabilizer. If a worker loses his job, his employer's contributions stop and he begins to collect unemployment benefits. These two effects result in virtue of the detailed

[1] Pp. 437–438.

facts which go to make up a drop in payrolls and a rise in unemployment, *not* in virtue of officials' reading a report on national conditions and deciding to take action. Hence, the process is automatic. But grafted onto the process is a destabilizer—"merit rating." In many states, a separate reserve account is kept for each employer, and benefits to workers whose unemployment is attributed to him are charged against this account. The larger the employer's reserve becomes, relative to his payroll, the more his contribution rates are reduced. Hence, heavy unemployment, draining the reserves, leads to an increase in contribution rates—which tends to make unemployment worse. This destabilizing arrangement is not enough to cancel the stabilizing effect of the unemployment insurance system, but does weaken it.

The discussion of this chapter will open with a sketch of the automatic stabilizers that we already have, followed by a sketch of the destabilizers. Next comes an inventory of possibilities for automatic stabilizers which deserve consideration. On the whole, this discussion is of "fiscal" rather than "monetary" policy devices; although some monetary devices and a few "non-monetary" proposals come in. The chapter closes with a survey of non-monetary "framework" policies as influences on the working of monetary-fiscal stabilizers, and a brief discussion of the limitations of automatic stabilizers.

Automatic Stabilizers Already in Force. Both in operating effectiveness and in public acceptance, automatic stabilizers have come a long way in the last few years. The prime example, on both scores, is the currently collected personal income tax.

Until 1943, the federal income tax was collected in four installments in the year *after* the taxpayer got the income on which he was taxed—that is, with an average lag of over 13 months.[2] In 1943, we went over to a current-collection system, with taxes on wages and salaries withheld at the source and with taxes on other income paid quarterly under "declarations of estimated tax" for the current year.

The change means that, in case of a slump, there will be an

[2] Income received over the 12 months of 1929 led to tax payments on March 15, June 15, September 15, and December 15, 1930. The center of gravity of the tax year was June 30, 1929; the center of gravity of the four tax payments, July 31, 1930.

immediate decline in tax collections. People whose income is reduced get an immediate reduction in taxes. Roughly, the amount available for expenditure and savings is reduced by about 80 per cent of any drop in income instead of 100 per cent, as it used to be. On an upswing, on the other hand, people's taxes rise rapidly, instead of starting to rise only a year later.[3] Thus, an acute boom produces a partial tax corrective.

If you ask anybody you meet whether he would rather go back to the old tax-payment system, he is almost sure to prefer the new one. Ask why, and he will tell you that he would rather pay his taxes while he has the money on which he is being taxed, rather than have tax payment postponed and worry about whether he can hang onto the funds. This argument is a personal application of the general case for automatic stabilizers.

Beyond the personal income tax, our chief automatic stabilizers now in force are:

1. Corporate income taxes. While these are not on a current-payments basis (except as managers elect to cover their accrued taxes by buying "tax notes" or other government securities), managers are very conscious of taxes as they accrue, and probably act much as they would if these taxes were fully current.[4]

2. Social Security. Unemployment insurance was discussed above. The old-age account has contributions based on payrolls and thus varying with business. Old-age benefits do not have any such cyclical flexibility as unemployment compensation, but there is some tendency for elderly workers to hasten or postpone their retirement according to the job market.

3. Farm price supports, which call for increased government outlays if farm prices drop below "support levels."

4. Veterans' benefits—particularly unemployment compensation and benefits to student veterans.

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[3] For wage-and-salary earners subject to withholding, the effect is immediate. Taxpayers on a declaration basis, however, can postpone amending their declarations and need not pay on the increase in their income until the ensuing January or even March. At the latest, however, the whole tax is in by March 15 of the next year instead of the next December 15; and the part withheld is the larger. People who pay under declaration (largely business and professional people) are more likely than wage-earners to set aside funds now for taxes payable next year, so that the date of payment makes less difference in their behavior.

[4] For this argument and its qualifications, see E. Cary Brown, "Pay-As-You-Go Corporate Taxes," *American Economic Review*, September 1947, pp. 641–645.

Whether other taxes should be defined as built-in stabilizers is a question of relativity. All taxes have some tendency to yield more or less revenue at given rates as national income rises and falls. But it is only income taxes which vary more than in proportion to income. Excise and sales taxes have less income-elasticity; property and estate taxes, very little. In the tax field, a shift toward income taxes is, therefore, a shift toward stronger automatic stabilizers.

How do these automatic stabilizers add up? The question may be put in these terms: with a drop of $10 billion in national income, how far is the government's budget shifted in the direction of a deficit? Only a rough answer is possible.[5] Taking the major items:

1. If corporation profits (in prosperity, about 10 per cent of national income) varied in proportion to national income, the "swing" of profits taxes would be about 4 per cent of any change in national income—since these profits at this writing are taxed at roughly 40 per cent. But (*a*) profits change more, proportionately, than national income, even after correcting both series for fictitious profits and losses from revaluation of inventories; and (*b*) fictitious inventory profits and losses are counted as profits for tax purposes and go in the same direction as income. Allowing for these factors, the "swing" in corporate profits taxes must be nearer to 6 per cent or 8 per cent of the swing in income.

2. Personal income tax in prosperity runs about 10 per cent of national income at present rates and exemptions. But the amount of income exempt from tax is more stable than total national income, while taxable income (especially that taxable above the "first-bracket" rate) is less stable. The "swing" is surely not less than 12 per cent and may exceed 15 per cent.

3. Social Security contributions have recently been about 3 per cent of national income, and are apt to vary roughly in proportion; we may call the "swing" about 2½ per cent to 3½ per cent.

4. The rise in unemployment compensation with a $10 billion

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[5] It is odd that there is not a large body of factual studies on this point; but, for some reason, it seems not to have been systematically discussed.

drop in income depends on the composition of the drop; since the resulting estimate is very rough indeed, we may call the "swing" 2 per cent to 5 per cent.

5. Indirect taxes (other than property taxes) have recently run about 8 per cent of national income, but must be expected to have rather low income-elasticity; we may call the "swing" 3 per cent to 5 per cent.

Adding these figures suggests a "swing" of from 25 per cent to 35 per cent. Allowing for benefits to farmers and veterans would raise both ends of the range by one or two percentage points. Thus, a crude over-all estimate of the effect of all the automatic stabilizers would be that they increase the budget deficit (or reduce the budget surplus) of federal, state, and local governments by about a third of any drop in income.

In terms of monetary theory, this means that if a drop in investment and consumption lowers the annual rate of national income by $10 billion, these stabilizers create an "offset to saving" of the order of $3 to $4 billion per annum. Investment may, therefore, drop $3 to $4 billion per annum relative to saving without carrying national income down by more than $10 billion. In addition, the shift toward a deficit means increasing the public's stock of liquid assets (cash plus government debt) by from $3 to $4 billion per annum, which may be enough to affect consumption and investment appreciably if it goes on for a few months. Since both consumption and investment are somewhat volatile, this finding is no guarantee against a slump. But it does suggest that, if the basic lines of government finance are fairly stable, we are not likely to see the bottom drop out of economic life as it did after 1929.

Automatic Destabilizers. An automatic destabilizer is the opposite of a stabilizer. That is, it is an arrangement which pushes the government's budget toward surplus in a recession, or reduces the public's liquidity, or both. One example appears above—the merit-rating side of unemployment insurance.

Obviously, no policy is likely to have been adopted *because* it was an automatic destabilizer. But, then, not all of our automatic stabilizers have a clear history of having been adopted because they were stabilizers. Both have been arrived at "in a fit of

absent-mindedness"—for other reasons, good or bad, which may not be connected with the stabilization problem.

The destabilizers are largely monetary rather than fiscal. As the argument earlier in the book [6] should make clear, bank credit in general is a destabilizer, tending to make the public illiquid in a slump and liquid in a boom. Reserve arrangements and the public's tendency to use more paper money during prosperity (at the expense of bank reserves) offset this destabilizing tendency—but not completely. The tendency for banks, on an upswing, to shift from bonds to installment credit and stock-market loans is a destabilizer.

Some of the public debt arrangements arrived at during World War II might be described as destabilizers. In particular, the public's option to cash Savings Bonds at any time seems to have reinforced inflation during 1946–1947; although many analysts had looked at this arrangement as one likely to sustain spending power in a slump. Similar comments apply to the handling of the market for Treasury bills, certificates, notes, and bonds of marketable issues. But, on the whole, it is more useful to look on these arrangements as restrictions on the discretionary powers of monetary control, which are discussed in Chapter XXIII.

Improvements of Automatic Stabilizers: Taxation. There is a good deal of room for intensifying the working of the automatic stabilizers which we now have, by remedying obvious defects. To begin with the most important item, the personal income tax would be still more effective as an automatic stabilizer if refunds could be speeded up—especially for the unemployed. At present, if the withholding mechanism collects more tax for a year than the taxpayer owes, the taxpayer receives a refund in the spring or summer of the next calendar year. This is especially likely to happen to a taxpayer who is out of work part of the year; for, if he works (say) only three-fourths of the year, he gets the benefit, for withholding, of only three-fourths of his exemption, since the exemption is prorated over the 52 weeks of the year. From the monetary standpoint, the ideal solution would be to tax everybody (through withholding or by declaration) on the full amount of his income with no personal exemption for himself and

[6] See pp. 60–61; also, Part I and Part III, *passim*.

his dependents—and then give the equivalent of the exemption to everybody through weekly or monthly family-allowance checks.[7] In case of unemployment, the tax collection would stop at once, but the per capita exemption-equivalent checks would keep on coming; thus, the effect of unemployment in reducing consumer spending would be damped.[8]

Another possible way to increase the automatic-stabilizer effect of the personal income tax is to allow taxpayers with varying incomes to "average" between tax years. This means setting up the tax structure so that the *average tax* which a taxpayer owes for a stretch of years is proportioned to the *average income* that he receives during these years. Under this system, a taxpayer whose income this year was below his recent average would be entitled to a refund (or an abatement of this year's tax) to equalize his tax position with that of a person with a level income of the same size.[9] Whether the effect would be stabilizing, however, depends on the timing of the refund or tax credit. If you can obtain a refund *now* because your income is low now, the change will make the income tax a better stabilizer. But if you will get a refund *next year* because your income is low now, the stabilizing effect is weakened; in fact, if your income curve shows a regular year-to-year sawtooth shape, this deferred-refund arrangement will make averaging a destabilizer. This finding creates a problem for the tax experts who are trying to design averaging schemes.

In the field of corporate taxation, there is also room for some improvement of the stabilizing effect of taxes through averaging.

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[7] Suppose that the amount of income exempt from tax is $10 weekly per person dependent on the income in question, and the first-bracket tax rate is 20 per cent. Then, the taxpayer can be approximately compensated for reducing the exemption to zero by a weekly check for $2.00 per person. Sending such checks to the whole population would slightly improve the position of people whose income is below the exemption limit. But bringing the exempt income under tax (and pushing part of present taxable income into higher taxable brackets) would clearly bring in just about enough extra revenue to cover the checks when employment was high.

[8] A similar result would follow from the British system of "cumulative withholding," which keeps adjusting the amount of tax withheld *down through* the current week to the amount earned through that week. But the British scheme involves greater bookkeeping difficulties and works out badly for people who are unemployed either very late or very early in the year.

[9] At present, a taxpayer who receives $20,000 a year half the time and $10,000 a year half the time pays more tax than one who always gets $15,000. This is objectionable in equity, as most people would prefer the steady income. In addition, it discriminates against risk-taking, since the way to get a steady income is to eschew risky business.

But the date when a refund or credit can be secured is less crucial, since corporations operate largely on an accrual basis.

In the Social Security field, the chief loose end is the merit-rating arrangement to which I have already referred. Without sacrificing the idea of favoring employers who find ways to stabilize the employment of their own groups of workers, the destabilizing effect of merit rating could be cured by introducing a government contribution to the reserve funds which would be large when total unemployment was high and small when total unemployment was low. Such contribution by the government would eliminate the counter-cyclical fluctuation of employers' contribution rates.

As for other taxes, there is probably not much room for improving the timing so as to make them better automatic stabilizers. But one point should be stressed: As we progress far enough into the peace so that the military budget can be reduced and the "aftermath of war" expenditures on behalf of veterans, and so forth, have tapered off, there will be room for tax cuts. The relative inefficiency, as automatic stabilizers, of such taxes as the excises on tobacco and beer, the tax on theater admissions, and import tariffs is a reason to reduce or eliminate these taxes when there is room for cuts, rather than to reduce income taxes.[10]

Improvements of Automatic Stabilizers—Expenditures. On the side of public expenditures, too, there is room for improvement of automatic stabilizers. The expenditures that come into question, of course, are those which are *conditional*—that is, which result when the government promises to buy something (or make a transfer payment) on stated terms open to all comers who qualify. Veterans' benefits are of this sort, as noted above; so are gold purchases.

Obviously, this is a limited field. Military expenditures have to be fixed almost without reference to domestic economic conditions; so do outlays for rehabilitation abroad. Scope for such

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[10] For a contrary view, see Committee on Postwar Tax Policy (H. Lutz and others), *Tax Program for a Solvent America* (New York: Ronald Press, 1945). As the stress on "solvency" implies, this Committee seems more concerned with the window-dressing of government finance than with its effects on the flow of income and production. Most students of public finance would argue that tax equity as well as stabilization considerations call for heavy reliance on progressive direct taxes with their cycle-sensitive revenue yields.

conditional outlays in education and public health is small. Public works programs are discretionary rather than automatic by nature.[11] The main conditional expenditures which may be automatic stabilizers are veterans' benefits, relief, and so forth, and aid to farmers.

As to veterans' benefits, all that can be said is that from this standpoint unconditional grants are questionable. Benefits which are available when the veteran wishes to train himself for a different job, or to move to a more promising location, are likely to work as automatic stabilizers. Benefits which are most useful to a veteran when he is well off are likely to be destabilizers—as may well prove the case with programs to help veterans finance houses and businesses.

Relief problems faded out of public attention during the war and have not yet come back into focus. If we can avoid acute depressions, of course, we can hope to avoid relief problems of the scale experienced in the 1930's. But if we accept responsibility for even a low minimum subsistence level for families which lack a breadwinner, for the unemployed outside the insurance program, for the aged and incapacitated, there must be a budgetary item for relief. If such a minimum level is really maintained, this item is something of an automatic stabilizer; for unemployment intensifies all the causes for going on relief and weakens the ability of family groups to keep their peripheral members off relief.[12] If (as sometimes happens) the budget contemplates a minimum standard for a minimum number, and any growth in numbers is covered by spreading the budget thinner and going below the minimum standard, the stabilizing effect of relief fades out.[13] Here we have an argument for federal concern with relief; for the states, with their limited resources, are under strong

[11] *Qualification:* It might be possible to design a system of housing subsidies, available for all projects that passed certain tests, which would function as an automatic stabilizer.

[12] The stabilizing effect of this item turns almost entirely on the *numbers* on relief. The *prices* at which they are cared for (notably their rent costs) seem to vary more sharply than prices in general, creating a destabilizing factor.

[13] This statement does not necessarily imply that a minimum standard is not a real minimum. If relief standards are pushed too low, the burden is shifted to relatives (who may themselves be poor), to landlords who fail to collect rents, and to shopkeepers who fail to collect for food and clothing. Aside from its equity aspects, this outcome reduces the amount which these people can spend on their own account, and is thus deflationary.

pressure to hold relief appropriations down as unemployment climbs.

The largest opportunities are on the farm side. Here there are three major possibilities:

1. The system introduced during World War II, under which the government steps in as buyer whenever any major farm product falls below a legislatively set "support price," supplies so bought being destroyed or otherwise removed permanently from the market.
2. A variant type of "support price" program, under which farmers are encouraged to sell for whatever price they can get, but are reimbursed by the government for any gap between this price and the "support price." [14]
3. The Graham "commodity-reserve currency" plan described above.[15]

Any of these systems, if adhered to steadily, would tend to make government expenditure on agriculture rise in depression and fall in prosperity. As compared with system 1, system 2 would have the great advantage of seeing that farm output was put to use. This plan would mean, not only that people would eat food that might otherwise be wasted, but also that the activities of transporting, handling, and processing farm products would be held up to full volume even in the face of depression. The danger that system 1 would make the food industries catch the infection of industrial depression is a serious one.

As compared with systems 1 and 2, system 3 would have the advantage of being more likely to remain automatic, since the prices (or, rather, the price of the commodity composite) would be tied in with the monetary standard rather than left to the mercies of political log-rolling from season to season. Under any system of support prices for individual commodities, there would be the danger that support prices would rise with business activity, creating inflationary pressure. On the other hand, as compared with system 1, system 3 would destabilize the physical rate of use of farm products (diverting them from use to storage

[14] See T. W. Schultz, *Agriculture in an Unstable Economy* (New York: McGraw-Hill, 1945), pp. 220–235, and various statements of the National Planning Association.
[15] See pp. 452–456.

on a downswing, from storage to use on an upswing). Thus, of the three systems, system 2 is the only one which promises to combine a stabilizing fiscal effect with the old-fashioned healthy tendency of stability in farm output to limit fluctuations in non-farm activity.

Improving Automatic Stabilizers: Money. On the monetary side, the steps which would improve automatic stabilizers (or reduce automatic destabilizers) have already been mentioned in other connections. All that is needed here is a list:

1. The commodity-reserve proposal to install an automatic stabilizer in the monetary system. As we saw above,[16] this plan would involve the serious risks of a general breakdown of stabilization policy so long as we lack the means to stop the process which I have tagged "log-rolling inflation." In its farm aspect, furthermore, it seems inferior to the Schultz scheme for compensatory payments to farmers if their prices fall—supposing that the Schultz scheme can be applied without too much boosting of "support prices." On both scores, this proposal must be left off the list of measures which are practical for the near future.

2. Tying our money in more closely with foreign moneys, and thus using the probable greater stability of foreign economies to reduce American fluctuations. This plan might work well from our standpoint if foreign countries were willing to be so used. But, as I pointed out in Part IV, they are apt to feel that they cannot stand the strain. Consequently, we cannot expect to establish and maintain close currency ties unless our domestic stability becomes much more secure.

3. Reducing the elasticity of bank credit by increasing reserve requirements—including, perhaps, requirements to hold government securities.[17]

The Non-monetary Framework and Automatic Stabilizers. Non-monetary arrangements affect the prospects that automatic stabilizers will operate as desired. The tie-in with agricultural policy which I have just discussed is one illustration, but it is far from being the only one.

Obviously, for automatic stabilizers to be effective calls for

[16] See pp. 456–457.
[17] See pp. 449–452.

putting a stop to "log-rolling inflation." Such inflation is bound to throw out the calculations on which a system of stabilizers is planned. Furthermore, it introduces a destabilizing force into private investment—both in inventories and in equipment, buildings, and foreign assets. Thus, this type of inflation increases the load that stabilization policy must carry. At the same time, its political backwash is sure to involve tinkering with stabilization policy as a way of "appeasing" key groups.

Another illustration of the impact of non-monetary policy is the form taken by unemployment. As Sir William Beveridge points out,[18] unemployment may be caused by failure to have good contact between workers and job opportunities as well as by "deficiency of demand." An overload is thus thrown upon stabilization policy if it is expected to cure both kinds of unemployment rather than only the second.

It makes a great deal of difference in the working of stabilization policy, too, whether a growth of unemployment takes the form of *partial* unemployment (reduction of hours) for many workers or of the total unemployment for a few. The working of the automatic stabilizers in a recession relies heavily on the resistance of individual consuming households to a cut in their standard of living. If all households suffer a moderate slump in income through a reduction of working hours, the policy-makers can help them to maintain consumption by easing their tax burdens. At the other extreme, if the slump results from total unemployment of a smaller number of breadwinners, the households directly affected cannot be helped very much by tax arrangements.[19] Thus, tax stabilizers will work better if most employers shorten hours before they lay off workers.[20]

There is no use trying to make a complete inventory of the ways in which non-monetary policies interact with monetary-fiscal stabilization measures. But it should be plain that advocates of stabilization measures are bound to look for such in-

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[18] *Full Employment in a Free Society*, pp. 24 ff.

[19] Obviously, this argument applies with still more force to efforts to relieve a slump by reducing tax *rates;* such a cut helps nobody who ceases to be a taxpayer.

[20] This reasoning suggests that public policy should favor a form of labor contract urged by certain CIO unions, pledging the employer to cut hours to a stated low level before resorting to layoffs.

teractions, and also that non-monetary policy proposals need to be scrutinized for their effect on stabilization problems.

Limitations of Automatic Stabilizers. It would be pleasant if we could devise a neat system of automatic stabilizers and declare the problem of economic stabilization solved. But for several reasons, this easy way out of the problem is not satisfactory.[21]

1. The strength of the automatic stabilizers just after the war depended in good part on the war-expanded federal budget. A very large volume of federal expenditures gives a fulcrum for fiscal policy to work from: if we start with a *large* balanced budget at full employment, and thus with heavy tax rates, a slump of income will rapidly build a deficit (and thus a large "offset to saving"), setting limits to the slump. But heavy taxes are an evil in themselves, justified only by the need for heavy expenditures. Progress toward lower expenditure-and-tax levels must come if the world again becomes peaceful enough to let us cut back our armaments and our aid to Europe and Asia. This progress means reducing the "swing" of automatic fiscal stabilizers. Instead of a "swing" of roughly one third of national income, the automatic stabilizers may presently have only one quarter or only one fifth.[22]

2. While the automatic stabilizers can set a floor to a depression, they cannot in themselves bring recovery. Exclusive reliance on these stabilizers, thus, involves a gamble. It implies assuming that either:

(*a*) The "floor" will prove so high that, even if we are sitting on it a good part of the time, there will not be serious wastage of resources, or serious hardships for those whom the depression affects most sharply; or

(*b*) That "spontaneous" recovery forces will regularly pick us up before we have long been at the "floor" level.

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[21] The criticism which follows *almost* fits the agreed-high-level-balance plan of budget management discussed in the previous chapter. The CED and Mr. Ruml are somewhat vague on the expenditure side, so that they are not quite in the position of proposing a purely automatic policy.

[22] This is one side of the journalistic proposition that it is easy to avoid unemployment in an armament boom. Obviously, it is up to peaceful democratic countries to free themselves from the temptation to use armament as an escape from economic difficulties.

Both of these assumptions may be reasonable hopes. But they are likely to go wrong, and we ought not to rest too much weight on them. Discretionary policies need to be worked out which can either forestall a slump or at least correct it with certainty and promptness.

3. There are major uncertainties about government expenditures (going back to the world's political instability and the likelihood of further economic crises in countries that we are bound to help). The level at which we set our automatic controls may, therefore, have to be altered fairly often—perhaps sometimes on short notice—to avoid letting fluctuating government expenditures create major fluctuations of employment and prices.

Planners of stabilization policies resting almost entirely on automatic devices are living in a fool's paradise. The world where such a policy might work would be one in which government expenditure, foreign trade, and so forth, were predictable and stable. If the machinery is not designed to cope with effects of irregular military outlays, export financing, and the like, it may run into a series of "emergencies" in which policy has to be improvised. Thus, too much reliance on "automatic" controls would create just the evils that "automaticity" is designed to avoid: uncertainty about the future of policy, undefined areas of discretionary authority, and frequent introduction into policy of hastily framed and disturbing novelties to shake business confidence.

4. Even though an adequate policy resting solely on automatic stabilizers might be feasible, it would not necessarily be the best policy. We should consider carefully whether society might not gain from resting less weight on certain automatic controls and more on frankly discretionary controls. As will appear in the next chapter, discretionary stabilization measures can be adapted much more readily than can automatic stabilizers to the concrete circumstances of a slump or a price boom. A slump is likely to center in particular industries and particular localities—not always the same industries and localities. By the same token, the investment opportunities on which recovery prospects rest are rarely the same in two successive depressions. Adaptation of policy to the nature and location of the slump, and to the nature

of investment opportunities, is obvious common sense. Therefore, we have to study discretionary measures.

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Note on Alternative Points of View and Supplementary Readings

A strong statement of the merits of automatic stabilizers in view of forecasting difficulties is in Committee for Economic Development, Research and Policy Committee, *Taxes and the Budget* (New York: Committee for Economic Development, 1947), Chapter I.

For a discussion of automatic stabilizers in relation to other stabilization policies, see E. Hagen and A. G. Hart, "Timing and Administering Fiscal Policy," in *American Economic Review,* Papers and Proceedings, May 1948.

— *Chapter XXIII* —

DISCRETIONARY STABILIZATION POLICY AND FORECASTING

Types and Areas of Discretionary Policy. The object of discretionary policy in economic stabilization is to supply *planned* measures, making for expansion or contraction, to offset unplanned "disturbances." If forecasting is good enough, discretionary measures may forestall a disturbance and keep it from upsetting employment and prices. If forecasting is less perfect, discretionary measures may correct the effects of a disturbance and put employment and prices back where they belong before their fluctuation has had time to do much harm.

The "discretion" involved may lie with Congress or with the executive branch of the government, or jointly with both.[1] Since this is not a book on political organization, it is not necessary here to go into detail as to how discretionary authority can be divided. But the fact is worth stressing that between enacting detailed legislation on every problem and delegating problems to an executive authority with a plea to use good judgment, there are at least three intermediate procedures:

1. Quick-action legislation, within a general framework of policy laid down by underlying laws.
2. Executive action under "legislative veto." This device, which has been used to secure adoption of governmental reorganization measures, has great promise for stabilization policy. It involves a grant of power under which the President must report to Congress exactly what he intends to do, within rather broad Congressional instructions; the President's action goes through *unless* Congress passes a specific resolution of disapproval.

[1] For possibilities of stabilization through the exercise of *private* discretion, see pp. 492–494.

3. Executive action limited by fairly specific Congressional instructions, procedural rules, rights of appeal to the courts, and so forth.

Some of the measures discussed below practically must be of type 3; for example, public works and Federal Reserve operations. But many can be carried out either as type 2 or type 1 measures; for example, emergency tax changes.

This chapter is arranged by *fields* in which discretionary action is possible. I start out with non-monetary possibilities—first for the government, then for private parties. Next come possibilities in public expenditures: public works, transfer payments, and others. Then follow possibilities of taxation. Finally I come to monetary possibilities in the narrow sense. In each section, I consider both prospects for timely action and prospects for reliable forecasting, but avoiding another general discussion of forecasting. A summary co-ordinates discretionary with automatic policy.

Non-monetary Measures. No lengthy discussion of non-monetary measures is called for here, as Chapter XIX carried most of what I have to say about them. On the whole, it strikes me that the great importance of non-monetary measures in economic stabilization is in setting a "framework" within which monetary-fiscal measures can work.

Perhaps the most important exception is price policy. If government permits "log-rolling inflation," economic stabilization is crippled. The price-level objective of stabilization is surrendered piecemeal and employment policy is endangered, for monetary-fiscal measures against unemployment act by increasing expenditure. Rising expenditure is fairly effective in expanding employment if it pushes against stable prices. But if prices keep sliding up, the forces aimed at expanding employment leak away.[2]

Broadly speaking, stabilization policy will work best if the government's influence on prices and wages from time to time favors price stability. There have to be exceptions, of course. *Relative* prices and wages have to be adjusted sometimes, to preserve "equal pay for equal work" as the character of jobs shifts,

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[2] Cf. the comments on policy in 1933, pp. 321–324.

to draw workers and materials into expanding lines of production, and to encourage household and industrial consumers to expand their use of the products of industries which are becoming more efficient. On the wage front, we can expect to manage this adjustment chiefly by wage increases, with very infrequent reductions—and thus with a gradually rising average wage level.[3] But the increase can be kept gradual only if increases are handed out sparingly. On the side of prices, the government is not so directly involved and both increases and decreases are more apt to be made as needed by private initiative. Insofar as the government has responsibility, the rule of stability is harder to apply, since there are more cases calling for drastic increases or reductions in prices of commodities and commercial services than in wage rates.

Proposals for trying to help economic stabilization through wage policy, by changing the distribution of income, were discussed above.[4] I am very skeptical of their merit. Proposals for "direct control" of private investment also were analyzed—again with very moderate enthusiasm.[5] The most promising area here is housing, on which I comment below in connection with public works, since its economics is much the same.

Discretionary Private Action. While we are talking about discretionary non-monetary policies for stabilization, are we right to limit the discussion to *government* action? Is there not also room for *private* (firm or household) policies toward stabilization? And could not such action be mobilized (either by the government or by such private organizations as the Committee for Economic Development) into a powerful stabilizing force? To discuss this possibility involves a digression; but the subject needs an airing, and this is the best place for it.

To begin with, there must be cases where private interest points to actions that would help stabilize the economy, but the private

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[3] In the interwar period, a standard debating subject in economics was the merit of a "gradually rising price level" as a condition for stable prosperity. The case for a gradually rising price level has been translated in recent discussions into one for a gradually rising wage level. The key argument is that a virtual taboo on wage reductions will reduce the danger that an incipient slump will be compounded by widespread labor disputes or by employer speculation on cost-decreases to be obtained by lowering the wage level.

[4] Pp. 426–427.

[5] Pp. 431–434.

parties concerned do not realize the fact. Here is room for leadership based on the spreading of information. There is a useful job for such government agencies as the Department of Commerce and the Council of Economic Advisers: a job of making sure that certain types of opportunities are not overlooked. Leadership may be taken also by individual business firms, by trade associations, or by wider private groupings. The 1943–1945 job of the Committee for Economic Development, in making sure that businessmen realized the probable scale of postwar markets and that they planned to expand their plant and organization to match, is a good example. This activity doubtless helped forestall the anticipated post-V-J Day slump in 1945. Again, in the winter of 1946–1947, a threatened recession may well have been postponed by the leadership of a few key men in business and government, through persuading business to adopt a timely program of tightening up inventory policies.

In the second place, there may be a substantial range of decisions where private business advantage is not much affected one way or the other but where the public interest is affected. If it is immaterial, so far as good business is concerned, whether a firm enlarges its factory now or next year, it certainly makes sense to let the decision be settled by a public interest in having more or less construction this year. Such a situation may arise in the timing or location of construction, in inventories, in decisions whether to export on credit, in negotiations over labor contracts, and so forth. So far as I know, nobody has managed to build up a picture of the size of the "swing" that can be achieved by getting people to go to one end or the other of their range of indifference. The "swing" may be either large or small.

In the third place, some critics of business hold that wherever a public interest in a certain business decision can be seen, private decisions should be overridden. In particular, it is urged that whenever a firm becomes very large (like United States Steel, General Motors, Ford, Pennsylvania Railroad, or American Telephone and Telegraph), it acquires a slice of the public responsibility to avert unemployment and inflation.[6]

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[6] Obviously, if a concern (like these) reaches giant size, its *private* interest calls for looking at the possible backwash of its own action. If one of these giant con-

This proposition is not one to which you can simply say yes or no. If the private loss is small enough, of course, there is an obligation. General Motors is not morally free to impose a million-dollar loss of employment on its workers for the sake of a demonstrated net gain to General Motors of a penny. On the other hand, if business should go to extremes in its willingness to accept private loss for public gain, there would be serious incidental losses which might nullify the public gains sought. For one thing, the people who were making the sacrifices of private interest would insist on gauging the balance of gain and loss; and their judgment could be wrong.[7] For another, the warping of business incentives might do serious damage. You don't have to accept the politics of the National Association of Manufacturers to appreciate that the business manager's urge toward "efficiency" represents a real social interest—the interest of consumers and workers in getting as much stuff produced as possible per unit of work. Insofar as he seeks "efficiency" in the production of his own plant by methods which impair efficiency elsewhere (by dumping wastes into the river, for instance), the manager needs to be guided by health and safety rules or by financial penalties. But I do not see that the businessman should be much influenced in his decisions on investment, purchase of materials, and so forth, by the effects on national employment and price developments. It is up to government to provide a framework of policy within which the businessman can seek "efficiency" single-mindedly without upsetting the national apple cart.

Public Expenditures: Public Works. "Public works" are the first expenditure area to survey. Public works include public buildings, publicly provided housing, dams, bridges, highways,

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cerns (alone or in concert with others) can avert a recession in the economic system as a whole, its own direct gain will be an important one.

This consideration is not the issue in the text. The question is not whether the private interest of these firms is more broadly based than that of smaller firms, but whether these firms have an obligation to act *counter* to their private interests to help the economy in general.

[7] It is noticeable that the field in which businessmen are most willing to take losses in pursuit of advantages not accruing directly to their firms is labor relations, where many will make sacrifices for the objective of an "open shop" or even out-and-out "union-busting." Such are the results of encouraging business to pursue broader interests of its own selection. But if somebody else is to make his selection of outside interests binding upon businessmen, then we must expect to lose the spontaneous business action about which we are talking in this discussion.

navigation works, irrigation works, and so forth. They are often classified into "heavy" public works which have long periods of planning and construction and which call for specialized workers and equipment, and "light" public works which give more room for improvised measures and unspecialized workers. "Light" public works (more or less by accident) are largely earth-moving operations: road-building, earth-fill dams, grading, and landscaping. Interest in public works as economic stabilizers is of long standing. Not only in the Great Depression of the 1930's, but in the depression of 1921–1922, proposals for the use of public works to speed recovery were popular; and they were adopted on a fairly large scale as part of "New Deal" recovery policy from 1933 onward.

"Heavy" public works unavoidably fall into the group of stabilization measures which are discretionary and heavily dependent on forecasting. You can't improvise a Boulder Dam; the site must be surveyed and much of the engineering done before there is any use starting work. Besides, once the work is under way, it cannot easily be stopped. From the time such a project is authorized until practical work starts may be years; from the time work starts until it is complete may again be several years. To be useful in combating unemployment without helping to generate inflation, must not such a job of planning and construction be set in motion several years before the unemployment is expected to set in, and must it not be designed to be finished by the time full employment is restored? And doesn't this pose an impossible problem for forecasting, and limit such measures to very long depressions?

Things aren't quite so bad as this. For one thing, although heavy public works have a certain momentum once they are launched, it is possible to pause between detailed planning and actual operations. Advocates of public works favor having a "shelf" of projects which have been authorized and planned "to the blueprint stage," but on which actual construction is held up awaiting a go-ahead signal.[8] This "shelf" device can reduce the strain on forecasting by making *starts* on public works projects controllable on a few weeks' notice.

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[8] See the discussion of the "capital budget," p. 466.

The rate of *expenditures* on heavy public works is, of course, less adjustable than the rate of *starts,* since in any month almost all of the spending is always on projects started several months earlier.[9] There is some room for slowing down or speeding up jobs in progress, but not very much. Thus, if we want to use heavy public works to offset general fluctuations in business activity (for example, to expand or contract public works as private investment contracts or expands), timing is very likely to go wrong. The only case where the signals will be clear is a depression which is so badly out of control that it is evident that full recovery will take at least a couple of years—as in the mid-1930's—when a well-designed program of heavy public works is sure to stimulate production and employment when stimulation is needed. But either in prosperity or in mild depression, there is bound to be uncertainty as to whether speeding up the public-works machinery will be helpful.

In view of this forecasting difficulty, many advocates of public works favor using "heavy" projects for a more limited objective: "to stabilize the construction industry." This plan is much more feasible. Almost all heavy construction is done under contract, and a fall of private construction expenditures a few months ahead can be forecast from a fall now in the letting of private contracts. If the government can place new public-works contracts quickly enough, it can hope to keep the construction industry busy.

On the other hand, the case for this system of operation is not foolproof. Although it is easy to see when private construction is apt to slump, and to step in with public construction, it is not at all easy to see when private construction is due to pick up, and to get public construction out of the way. The fact that builders are busy with public works may well block an expansion of private contracts. Another difficulty is that to "stabilize the construction industry" implies deciding what the scale of that industry shall be. Offering enough contracts to keep a rapidly growing industry busy is very different from offering enough

[9] *Metaphor:* A fluctuating stream of beer is running through a gutter in a room where you are stationed, and your job is to stabilize the flow. Your equipment consists of a row of barrels of beer and a bung-starter. All you can do to change the flow is to knock bungs out of barrels and let them run (you aren't allowed to put the bungs back in). If your barrels are large and will go on flowing for some time after you tap them, your prospects of stabilizing the flow are dim, unless you have a very good forecast of the inflow from the next room.

contracts to keep a gradually shrinking industry busy. Moreover, the construction industry is peculiarly likely to push its prices up when markets are assured; and anything like a special guarantee of employment for building workers and contractors might have disastrous effects in raising building costs. Thus, careless planning along these lines can easily do more harm than good. The burden of proof is on public-works planners to show that such schemes are adequately safeguarded.

With "light" public works, difficulties are less. Work can be started and stopped on relatively short notice; and many of the jobs involved can be done by relatively unspecialized workers. Thus, such projects can help combat general unemployment. Soundly designed "relief works" of this sort are widely accepted as useful if unemployment rises even three or four million above the working minimum corresponding to "full employment."

For many purposes, all "low-cost housing" enterprises under government influence should be counted as public works. This includes both public housing and private housing which depends on government subsidy, tax privileges, or local government support through the use of the power of "eminent domain" (or of tax sales) to assemble parcels of land for development. In flexibility of timing, such projects fall between "heavy" and "light" public works. They look very different from either in the public accounts, however. Tax abatements and some forms of housing subsidy cost the government in the first year only a very small fraction of the value of the housing project concerned—with further contributions over the whole life of the buildings. People who want the substance of a "functional finance" program, without alarming friends of budget balancing, sometimes advocate such financing methods purely as window dressing to make the government's budget look orthodox.

Taking public works as a whole, the "swing" which they can provide for coping with business fluctuations is less than many people suppose.[10] This does not mean that public works should

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[10] A. H. Hansen, *Economic Policy and Full Employment* (New York: McGraw-Hill, 1947), p. 192, places the total scale of desirable public construction at from $7 billion to $8 billion a year. Much of this program, however, would be quite rigid because of its high social priority or because of its long period of construction or because of its specialized character. To change the annual rate of such expenditures by more than a tenth (say, $\frac{3}{4}$ billion) on six months' notice would be a great feat.

be written off as useless for stabilization purposes. As Dr. Hansen remarks,[11] "We are not likely to succeed if we do not undertake a well-rounded program in which a variety of measures are coordinated and pushed simultaneously." But in thinking of such a program, it is rash to count on public works for a very large net contribution.

Public Expenditures: Transfer Payments. Transfer payments are payments which governments make to private parties without receiving in return at the same time any equivalent in goods or services.[12] The main examples in American practice are interest on the federal government's debt,[13] payments to veterans, farm benefits, and Social Security benefits. Tax refunds might perhaps be classified here; but, on the whole, it makes better sense to treat them as offsets to taxes.[14]

As I argued above, transfer payments lend themselves to schemes for automatic stabilizers.[15] On the discretionary side, existing types of transfer payments are less promising. In case of a severe slump, special distributions to veterans and to farmers may help support consumption markets. But prosperity is not particularly likely to damp enthusiasm for such distributions, so that heavy emphasis on them is likely to produce disturbances rather than stabilizing influence. My judgment is that stabilization policy points to putting both farmers' and veterans' benefits on an if-as-and-when basis, to give them a maximum automatic-stabilizing effect. This judgment, however, is political rather than economic: if you are very optimistic about the prospects that American politics will generate large payments to veterans and farmers in depressions and small payments or none in prosperities, you are bound to disagree.

Public debt interest, looked at as a form of income, probably

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[11] *Ibid.*, p. 184.

[12] Note the phrase "at the same time." Transfer payments may be and often are payments related to *past* services; for example, pensions to retired army officers and civil servants.

[13] By convention, interest on state and local public debt is treated in national income accounting as payment for a service. The distinction is somewhat arbitrary, although it has a foundation in the fact that most local debt is incurred to build service-yielding facilities such as schools and water works, while the federal debt has arisen chiefly from war. In any case, there are few policy options about state and local debt interest; therefore, its classification does not much matter.

[14] See pp. 480–481.

[15] See pp. 483–485.

cannot be other than a destabilizer. The reason is that an expansive monetary policy suitable for depressions calls for low interest rates; while a tight-money policy suitable for acute booms calls for high interest rates. The income effect of such changes is a nuisance from the standpoint of stabilization policy, but can be completely avoided only by giving up the use of interest as a tool of policy—a course which some economists advise for this reason.[16]

It might be possible to set up a new type of transfer-payment account, specially designed for discretionary changes to support economic stabilization. One suggestion is to set up a "manufacturers' or retail sales subsidy"—that is, a sales tax turned upside down, with government *paying* each "taxpayer" a certain percentage of his sales instead of *collecting* a certain percentage from him.[17] The most conspicuous suggestion of this sort is that of John Pierson [18] for "national income security payments," in connection with his proposal for "underwriting aggregate consumer spending." These payments would treat all the people in the country "as though they were the holders of stock in a business enterprise." The "dividends" on their "stock" would be increased whenever the responsible officials forecast a shortfall of consumer spending for the next three months as against the "underwritten" level, and decreased when the officials forecast an excess of consumer spending. Quick action could be managed by having Congress instruct an executive agency to change the dividend rate from quarter to quarter, subject perhaps to "legislative veto." Another alternative would be for Congress to pass a law well ahead of time laying down the framework of the scheme and authorizing later appropriations, and for it then to act quickly from time to time to pass simple bills which appropriated the

[16] The income effect of changing interest can be mitigated, however, by a security-reserve system for commercial banks. (See pp. 449–452.) Such a system would make it unnecessary to use interest changes as a way of influencing *bankers,* so that only interest on *nonbank holdings* of public debt would vary with interest policy.

[17] See Lloyd W. Mints, "Monetary Policy," *Review of Economic Statistics,* May 1946, pp. 66–67. This proposal was made for use under a price level-stabilization standard, but could be used equally well under other standards.

See also Martin Bronfenbrenner, "Sales Taxation and the Mints Plan," *Review of Economic Statistics,* February 1947, pp. 39–42. His proposal amounts to a suggestion for having a permanent sales tax as pretext for having a variable family-allowance payment labeled "personal sales-tax exemption."

[18] John H. G. Pierson, *Full Employment and Free Enterprise* (Washington: Public Affairs Press, 1947), p. 47 ff. For fuller discussion, see pp. 472–474.

sums called for by the basic law.[19] Either way, the length of time that the forecast must run could be held down to from four to six months—the three-month period for which "dividends" were set in advance, plus a few weeks to make the decision and prepare for payments. How effective such a new type of transfer payment would prove as a stabilizer would depend partly on the evenness with which unemployment was spread,[20] partly on the acceptability of rules for moving "dividends" up and down at times that many people would think inappropriate.

Public Expenditures: Miscellaneous. Aside from public works and transfer payments, we cannot count on public expenditures as stabilizers. On the contrary, in our unsettled world, some major items are apt to change erratically and thus to be sources of disturbance. In particular, our military budget may jump about. We may hope for a downward trend, but there are likely to be some year-to-year increases. Similarly, there is likely to be an irregular need for economic aid to our friends abroad. As the start of the Marshall Plan in a period of inflation indicates, the timing of these changes may not suit our convenience.

The staples of domestic government (schooling, law enforcement, and so forth) cannot reasonably be jerked up and down from time to time for purposes of economic stabilization. But in the past these expenditures have been swung down in depression and up in prosperity by the effects of business activity on the revenue of government bodies (especially of local governments). It is reasonable to aim at smoothing out this curve—an achievement which might be a substantial contribution to general economic stabilization.[21]

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[19] *Public Finance Technicality:* Under the rules of Congress, no actual appropriation act can be passed unless *previously* there has been an act authorizing the appropriation. This means that every appropriation is considered twice over. In some instances, the consequence is to block quick action (as happened, for instance, with the emergency program of aid to Greece and Turkey in the spring of 1947). But it can also be used to facilitate quick action if the issues of principle are thrashed out well ahead of time in discussing the authorizing act, so that discussion on the actual appropriation can be focused on the question whether it carries out the policy previously laid down.

[20] See p. 486.

[21] For an analysis, and for proposals to change the incentives of local governments in a stabilizing direction, see A. H. Hansen and H. S. Perloff, *State and Local Finance in the National Economy* (New York: Norton, 1944). The practical problem is not an easy one, as may be seen from the criticisms of Hansen and Perloff in a review of the book by B. U. Ratchford (*American Economic Review,* December 1944, pp. 916–919).

At best, military expenditures and foreign economic aid programs are almost sure to be a source of disturbances—even if the other miscellaneous expenditures can be leveled off. The uncertainty of these items is one major reason for demanding room for discretionary measures which can be used to offset the upsetting effects of these programs on economic stability.

Flexible Taxes. Among the possible lines of discretionary action which the government can use for economic stabilization, the most powerful is taxation. In the discussion of automatic stabilizers in the previous chapter, I traced the "built-in flexibility" which the tax system already has and the ways by which such flexibility could be enhanced. But, in my judgment, we are likely to need still more flexibility. For the stabilization problem seems to be too big for any combination of automatic stabilizers, or of automatic stabilizers plus adjustments in public expenditures.

The case for having a great deal of tax flexibility rests on two main arguments: (1) the probable irregularity of several major items of public expenditures; (2) the likelihood of disturbances from outside the budget which need to be "compensated."

1. When a large lump of expenditure is unexpectedly added to or subtracted from the budget, the level of taxes needed is altered. This is true under any one of the three budget-balancing rules examined in Chapter XXI (annual balance, business-cycle balance, or balance-at-high-employment), and also if we talk in terms of the tax level needed to avert inflation. The change in taxes may not work out *equal* to the change in expenditure,[22] but it will work out to be of the same general dollar size.

To go through such disturbances in public expenditure with constant tax rates is dangerous. When the expenditure-change is downward, this policy might leave taxes too heavy and create unemployment.[23] When the change is upward, this policy might

[22] Cf. the discussion of how much taxation is "enough," pp. 463–464. Even in applying the annual-balance rule there is commonly some slack. Commonly, if an unexpected bulge in expenditure looms up (say) in March for the "fiscal year" beginning July 1, the Congress sets out to balance it by a tax increase of equal size "in annual rate"—with many items often taking effect only in the following January.

[23] This outcome was widely expected just after V-J Day. But, since private investment had been restricted and private saving stimulated by war programs, there was a safety cushion of unknown size, which turned out to be sufficient to give us a net inflationary push in 1946–1947, even though substantially all war taxes continued save the Excess Profits Tax.

generate inflation and/or shortages, forcing imposition of "direct controls" on prices, investment, and foreign trade. And although direct controls may at times be essential, there is general agreement that we do not want either to have them in force much of the time or to turn them on and off very often.

2. Even though tax changes may adequately compensate for the effect of disturbances from government expenditure (so that the net effect of government expenditure and taxes is not disturbing), there is still the question of disturbances coming from foreign trade, inventories, construction, purchase of durable consumer goods, and so forth. As I argued in the previous chapter, the built-in flexibility of our automatic stabilizers can tone down the effects of such disturbances. But this statement implies letting the budget remain *passive*. A passive budget adjustment may act as a drag on downswings and upswings—slowing them down and eventually bringing them to rest. But it cannot exert a counter-push that will put employment and prices back where they belong. If we want security against depressions dragging on (or against price upswings going on after full employment and a surplus in the budget are both attained, as happened in 1946–1948), we need an *active* budget policy. Taxes, as the largest adjustable item in the budget, cannot be frozen if such a policy is to succeed.

There are important arguments to the contrary, however. The case against tax flexibility rests on four main considerations: (1) effects of tax uncertainty on the "climate" of business; (2) political difficulties in putting tax machinery on a flexible basis without undue delegation of power; (3) possible errors of timing; (4) loss of the safeguards of budget-balancing.

The force of the first objection depends a great deal on *which* taxes are flexible. The case for stability to enable business to make firm calculations applies in the first instance to property taxes, corporation income taxes, and the surtax structure of the individual income tax (as it affects unincorporated business, especially). Advocates of flexible taxes generally aim chiefly to affect consumer expenditures. For this purpose, the most appropriate taxes are the first-bracket personal income taxes,[24] possibly em-

[24] That is, the tax on the first $2000 of taxable income per taxpayer in excess of exemptions. Well over half of taxable income is in this bracket.

ployee contributions to Social Security, and any sales taxes or spendings taxes [25] that might be adopted. On the whole, then, the taxes we need to keep stable and those we need to have flexible are separate lists, so that the first argument against flexibility should not be taken too hard.[26]

The second objection and the third are linked. If tax legislation stays on the present slow-motion timetable, flexible tax policy is unpromising. Congress normally spends months considering tax legislation, fixes taxes for periods of a year or more, and feels a strong obligation to act before the tax year begins—or, at the latest, a few months into the year.[27] The likelihood that tax-rate changes aimed at stabilizing business would be based on erroneous forecasts is very high on this basis.[28] Suggestions for the delegation of power to speed the process are widely viewed as dangerous to the key powers of Congress.

Changes in tax patterns could solve these problems. Under our tax-withholding mechanisms, tax rates could be changed as often as once in three months without serious ill effects *if* advance preparation had been made. The problem of delegation of power could be taken care of in framing these preparations, by making the final decision by one of the methods sketched at the opening of this chapter. With tax tables for different possible tax rates printed in advance and ready for distribution to employers who collect taxes by withholding, it would take only a few days' notice to make new rates effective.

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[25] A spendings tax would be a levy based on a household's total expenditure on consumption. Under proposals made during the war, spending would be measured for tax purposes indirectly: by subtracting certain stated uses of funds received (to buy securities, build up bank balances, and so forth) from total receipts of income plus proceeds from sale of property. In principle, such a tax would be a wonderful anti-inflation device; but I am skeptical that it could ever be made to work as intended by any practicable enforcement machinery.

[26] I pass over the possibility of introducing useful flexibility into business taxation by "fancy" proposals such as periodic bargain-days on depreciation. Their discussion leads too far over into the economics of public finance; and, at that, these proposals have the look of blind alleys.

[27] In the interwar period, with modest tax rates, Congress felt free to fix rates any time during the tax year; and even now such freedom may exist for tax *reductions*.

[28] An illustration at hand is the decision of the Republican leaders in Congress (dating some months before the election of 1946) to cut 1947 personal income taxes. A probable business slump in 1947 was given as a major ground for this cut. But the actual 1947 situation was inflationary. Insistence on deciding tax rates well in advance would have led to a serious policy error had it not been for President Truman's veto.

The fourth objection is one already discussed.[29] The loss of safeguards against wasteful expenditure policy is a real loss. Yet, on the whole, it seems to me that the loss of inadequate tax flexibility would be worse. But to enjoy the benefits of tax flexibility, we must be able to count on our political leaders for understanding of the stabilization problem and for determination to make it work. Actual abandonment of budget-balancing principles may be premature in the present state of political opinion on stabilization.

Monetary Policy: Lerner's Proposal. Before coming to my own suggestions on monetary measures, another "formula" for policy needs study. This formula, presented by A. P. Lerner,[30] did not fit into Chapter XX or Chapter XXI above because it involves co-ordinated monetary and fiscal policy rather than either alone.

As a fulcrum for policy, in Lerner's view, come certain decisions in public finance which are made irrespective of economic stabilization. There are "particular reasons" for hiring schoolteachers, taxing "sinful" products such as playing cards, and so forth. When these reasons are added up, they will determine the government's routine public spending and parts of its tax policy.[31] Further taxes will be needed, probably, to hold consumption spending below an inflationary level. Investment will be affected by the state of markets and by interest rates. As to interest rates, Lerner holds that they are directly controllable: the government may set any rate that it wants, and may make that rate effective by offering to borrow or lend unlimited amounts at that rate.

Lerner proceeds to argue that any policy that happens to be adopted at the outset will yield "definite values of the level of consumption, of the rate of interest, and of the level of investment." If the outcome is unemployment, consumption may be expanded by tax cuts (or by payment of "bonuses"), and private investment may be expanded by lowering interest. Therefore, the government should "lend money (or repay debt) to lower the rate of interest until the rate of investment is at the level it con-

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[29] Pp. 462–465.

[30] See his *Economics of Control* (New York: Macmillan, 1944), Chapter 24, "Interest, Investment and Employment III (Functional Finance)," pp. 302–322.

[31] *Ibid*, pp. 314–315.

siders proper, and . . . reduce taxes or increase bonuses until the level of consumption is enough, together with the investment, to produce full employment. The government may, in such a situation, also increase its own buying, which will contribute to the desired increase in total demand." [82] This argument offers a simple formula for assigning separate tasks in stabilization policy to taxes, and so forth, and to monetary operations. Taxes are assigned as regulator of consumption; monetary and public debt policy (acting via interest), as regulator of private investment. Public works are assigned as a sort of assistant to monetary policy, to offset any deficiency in private investment which lowering interest rates cannot repair.

Unfortunately, this formula pushes too many difficulties between the lines. "The interest rate" is apparently taken to mean the whole combination of financial incentives to invest which is offered by the size of cash balances, terms on which loans can be had or stock sold, size and price of government-security holdings, expectations about future security prices, and so forth. What can be controlled by government borrowing and lending is, at most, the market rate of yield on government securities, which is not the same thing at all. It does make sense to say that monetary policy should be aimed chiefly at investment. But the control pattern involved has to be much more complex than the formula suggests.

On the tax side, again, it does make sense to say that the main question is the effect on consumption. But all the doubts on timing cited in the last section remain to plague us. We can always *try* to be pushing consumption spending forward or holding it back at the proper moment. But honest error in forecasting may lead us to do the right thing at the wrong time—which isn't necessarily any better than doing the wrong thing.

Monetary Policy: Bank Reserves, Open-Market Operations and So Forth. The key powers of monetary control, as I argued in Chapter II, lie in measures which affect the margin between the reserve requirements and the owned reserves of commercial banks. In a depression, easing the reserve position may expand

[82] Both quotations from A. P. Lerner, *Economics of Control* (New York: Macmillan, 1944), p. 315. Copyright, 1944, by The Macmillan Company and used with their permission.

bank loans and raise the liquidity of the nonbank public, encouraging investment. In a prosperity which is threatening to turn into a top-heavy boom,[33] tightening the reserve position can check loan expansion and damp inflationary fervor.

As many observers have pointed out, monetary policy is more effective in checking a boom—or starting a depression—than in securing revival from depression. True, the direct deterrent effect of high interest rates on a boom in inventories or securities or real estate is limited: once speculative zest (or fear of being caught short if buying is delayed) is thoroughly aroused, two or three percentage points of interest per annum do not look very important. An interest rate high enough to check speculation is apt to be so high as to kill off less speculative investment. On the other hand, the real pinch on the "speculative" focus of a boom tends to come through the "credit rationing" mechanism of banks. The tendency to take care of regular customers shifts the pressure of a shortage of reserves to types of borrowing which are expanding fast. The implication is that if a boom has to be tamed, a short-and-sharp monetary check through tightening credit may do the job at an early stage, before a break will be so serious as to involve a general depression.[34] Supplementary "qualitative" controls may help concentrate the squeeze on the offending speculative sector.

The by-products of monetary operations on the nonbank public work in the right direction. An anti-speculation drive through open-market sales of securities, for example, pulls down bond prices. Reduced prices lower the "moneyness" of the bonds held by the nonbank public, so that investment is bound to be slowed down.[35] In the other direction, a drive to ease credit by open-market purchases of securities increases the moneyness of bonds.

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[33] For the meaning of "top-heaviness," see the analysis of the 1920 boom, pp. 302–304.

[34] The implication for 1929 is that policy may have erred in starting too late to check stock-market speculation (and, of course, in failure to bring other agencies—including the White House itself—into line with Federal Reserve policies of restriction). And, having started, if it could not do the job with a short-and-sharp squeeze, it might have been wiser to drop the anti-speculation drive. Prolonged tight money was likely to accentuate the downturn which the threatened stock-market collapse itself was bound to produce. See pp. 311–313.

[35] See the argument about the effect of bond prices, pp. 209–211. In an inflationary situation, "price support" for long-term government bonds, offering insurance against capital losses, may make things worse by enhancing the moneyness of bonds.

Thus, it may set up a stimulus to investment even though it does not cause much expansion of bank loans.

All this argument, of course, assumes that the monetary authorities can always identify the situation with which they are dealing. A depression (even a mild one) is readily recognized while we are in it. But it is not so easy to be sure when there is reason for trying to pinch off a speculative boom. In 1937, for example, the monetary authorities were struck by the rapid rise of prices, and their restrictive monetary policy must carry some of the responsibility for the sharp 1937–1938 slump.[36] By hindsight, it might have been wiser to carry an easy-money policy throughout 1937. Furthermore, the timing of the effects of monetary measures is somewhat uncertain. Effects on investment presumably result largely from cumulative changes in the public's cash and money substitutes. Since investment *commitments* are ordinarily made some time ahead of investment *operations* (especially in building construction), the results of monetary measures may lag by some months, and thus may take hold after the situation at which the monetary authorities were shooting has changed.

We must not be too sanguine, then, about monetary measures always doing just what is intended. But as a minimum, we should require that money not be working in the *reverse* direction from fiscal policy. Tight money in a depression and easing of monetary conditions in a boom should be taboo.

Public Debt Management and Long-Run Monetary Alternatives. Where does management of the public debt fit into monetary-fiscal policy? How serious are the dangers of letting public debt mount up? To what extent is public policy helpless with debt problems, and to what extent has it real alternatives?

Public debt is the subject of many needless worries. (1) We can spare ourselves the fear that, if the federal government's debt gets too large relative to our national assets, everybody will find himself bankrupt; for every dollar of this debt appears in the nation's balance sheet as somebody's asset. (In fact, the real danger in this direction is not that debt may make us actually too poor, but that it may make us fictitiously too rich.) (2) We can also spare ourselves the fear that, if the government rejects the

[36] See pp. 324–325.

policy of "paying off the national debt," the individuals who hold the debt will be swindled. Nobody proposes that maturing bonds should not be paid off according to contract. Economists who say that in some situations "the national debt should not be repaid" are saying something much more innocent. They are merely raising the question whether Paul should be repaid by borrowing from Peter, or by taxing both Peter and Paul. (3) We can also spare ourselves the fear that our banking system will blow up in our faces because such a large part of its assets consists of government debt. We might have been better off if the war had not increased the stock of liquid assets so much—or if individuals had put more of their savings into bonds and less into bank balances. But, given the size of the cash supply, we are in some ways safer in having bank deposits rest on government debt than we would be if they rested on private debt (bank loans). The danger that a business recession may be compounded by bank-credit contraction is much reduced: our cash supply is largely deflation-proof.

While people worry too much about these fictitious bugaboos, they may be worrying too little about some more substantial dangers from the debt: (1) The interest charge, at about $5 billion a year, is equivalent to about a quarter of individual-income-tax revenue. Its presence necessitates higher tax rates, which will make it harder to sustain investment in plant, equipment, and housing, once the postwar backlog of demand is worked off. (2) Because the interest charge is so heavy, the authorities are tempted to hold down interest *rates*. This practice weakens the monetary tools of policy. Directly, it reduces the availability of interest-rate changes as a policy tool. Indirectly, it tempts the authorities to give up the use of bank reserves as a regulatory device. Low-interest policy produced the "open-ending" of bank reserves through guaranteed redemption of Treasury certificates during and just after World War II.[37] Even after that effect is cured, there is a danger that low-interest policy will lead to a fresh "open-ending" through price supports for long-term government bonds. (3) It is conceivable that the public may develop strong

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[37] See pp. 115–116 and 450–451.

"bearishness" on the prices of government bonds; and, since holdings of these bonds are so important, this attitude could conceivably develop into a state of panic which would extend to real investment.[38] (4) The swollen mass of liquid assets makes our price-level stability dependent on continued strong demand for liquid assets relative to current incomes and to other assets. If the public ever decided to move back toward the ratios of liquid assets to income and other assets which were regarded as normal before 1929, the shrinkage in the demand for liquid assets would mean a sharp inflation.

As a long-run matter, monetary policy may affect the debt. Suppose that our monetary policy is slanted to maximize the public's demand for liquid assets, and at the same time to minimize the growth of bank loans. This combination of policies would create a vacuum for a growth of public debt to fill. In fiscal terms, it would reduce the amount of taxes that the economy could stand (with public expenditures fixed) without sliding into deflation, and thus would increase the deficit needed. Such a policy would be a maximum-debt-minimum-tax policy.

At the other extreme, suppose that monetary policy is slanted to minimize the public's demand for liquid assets, and to maximize the growth of bank loans. The effect would be to make the monetary situation strongly inflationary. In fiscal terms, it would strongly increase the amount of taxes which the economy could stand. Such a policy would be a maximum-tax-minimum-debt policy.

Each policy would involve risks for the future. The maximum-debt policy would enhance the danger that a weakening of the demand for liquid assets might set off later inflation. The minimum-debt policy would rapidly build up the proportion of bank deposits resting on loans, and thus increase our vulnerability to credit deflation. I should favor a middle course—trying to

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[38] This danger is given as the rationalization of Treasury reluctance to see higher interest rates. I suspect that it is overrated. In my view, the main argument against higher interest (aside from its income effect) is that we may presently need low interest to help combat a depression. Unfortunately, *interest now* affects the anticipations which people will hold about *interest presently*. If they experience (say) 4 per cent long-term rates in 1948 or 1949, they will be unwilling in 1950 or 1951 to accept a 2½ per cent or 2 per cent rate as permanent. After a period of high interest, reduction of rates is likely to generate strong "bearishness" on bond prices, increasing the demand for cash in time of depression.

avoid long-run growth *both* in the demand for liquid assets and in business dependence on bank financing. This course would point in the direction of greater stability—giving us the minimum public debt consistent with a deflation-proof banking system.

Policy for an Uncertain Future. Uncertainty about the economic future presents a policy dilemma. Any policy which is too rigid and unadaptable is sure to turn out wrong. On the other hand, a policy which relies too much on improvisations will become a source of uncertainty in itself and make matters worse. Incidentally, going to either extreme now is likely to lead us to the other later. A highly rigid policy will create emergencies in which policy has to be improvised; too much improvisation will create a politically irresistible demand for tying policy down. Therefore, if we once are caught by this dilemma, we shall be tossed from horn to horn.

The way out of the dilemma obviously is to design a stable core of policies, but have planned flexibility in some lines of policy to keep down the need for improvisation. Obviously, some of the unexpected developments of the future will be so very surprising that no answer can be worked out in advance. But for major classes of surprises, advance planning for flexibility can give pretty good answers. Specifically, we can expect to meet sometimes with (1) slumps in private activity, going back to investment, or the "propensity to consume," or both; (2) inflationary bulges in private demand when we already have substantially full employment, arising in the same sources; (3) drastic shifts in items of government expenditure which cannot be controlled for stabilization purposes. A policy which does not provide for adjustment to meet these cases is designed for a fool's paradise, not for our United States.

The more we enlarge the stable core of policies, the more flexibility we must provide in other lines of policy. Luckily, there are some places where we can kill both birds with one stone. In corporation income taxes, for instance, the need for stability attaches to tax *rates*. A policy of stable *revenue* from corporation tax would involve "perverse flexibility" of rates—a policy causing them to be up in depression, down in prosperity. This variation of rates would be worse than stable rates both from the economic-stabilization standpoint and from the standpoint of busi-

nessmen who want to know what to plan for. All the "automatic stabilizers" studied in the previous chapter compromise the advantages of stability and flexibility in this way: they have "built-in flexibility."

We cannot hope to escape the dilemma, however, merely by developing "built-in flexibility." The job of economic stabilization is too big.[39] We can count on the built-in flexibility of our automatic stabilizers to set a floor to a slump. But the floor may prove to be intolerably low. Perhaps we can count on "natural forces" to raise production again after automatic stabilizers have stopped the recession. But the revival may be intolerably slow. Moreover, there is the unpleasant possibility that the pessimists may be right about a tendency toward "stagnation" which might stop a recovery well short of full employment (as happened, for example, in 1936–1937).[40]

There are several areas where the need for stability is very strong. First (what is too often taken for granted), people need to be able to count on positive fulfillment of definite promises by the government. Performance is essential notably with respect to the promises for repayment of debt embodied in government securities [41]; specific pledges of Social Security benefits; and specific pledges of farm supports, veterans' benefits, and so forth. Second, the nonbank public should be shielded against monetary changes which call on them to do things in radically unfamiliar ways. Third, to achieve business planning which has a reasonably long "horizon" and which is not too sensitive to alarms, we need to develop a stable frontier between public and private enterprise. Fourth, for similar reasons we need stability in those tax rates which most affect business calculations. The last three of these rules for stability need not be unconditional; gradual change is not too disturbing, and, in any case, cannnot be completely avoided.[42] Only the first should be taken as an absolute taboo on policies which conflict with it.[43]

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[39] See p. 487.

[40] See pp. 323–326.

[41] See pp. 507–508.

[42] See p. 420.

[43] *Implication:* If by imprudence or bad luck we cannot *both* pay claimants on government the number of dollars called for by their contracts *and* keep the commodity-purchasing power of the dollar up to expectations, it will be the lesser evil to pay the contractual dollars and let rising prices sap their purchasing power.

This area of desirable stability in policy is so large that we need also to find large areas of flexibility. This is the justification for the stress placed above on flexibility in personal taxes and in monetary operating policy.

Anti-Fluctuations or Anti-Stagnation Policy: The Gong and the Whistle. In view of the alleged "stagnation" danger, should stabilization policy be framed primarily as anti-stagnation policy? Or should it be framed primarily as a way of dealing with fluctuations? You may have sensed this question between the lines of the discussion above, and also my leaning toward the anti-fluctuations answer. But it is time to deal with the question explicitly and directly.

To begin with, the evidence on "stagnation" is inconclusive. The "stagnation" hypothesis offers a temptingly simple explanation of "chronic depression" in the interwar period: in the 1930's in the United States; in the 1920's in Britain; and so forth. But there are other promising lines of explanation. Moreover, the interwar period may not offer very good clues to the working of the postwar period. From the evidence, I think we have no right to treat the "stagnation" thesis as proved. But neither do we have the right to treat it as disproved: it may be correct. The only way to find out is by postwar experience.

On the other hand, we definitely know that there is a tendency toward fluctuations. During the "new era" prosperity of the 1920's, it was possible to believe that this tendency was fading.[44] But during the period of alleged "stagnation" (1930 onward) there were also sharp fluctuations; and by hindsight we can see the "new era" growing out of the violent cycle of 1919–1922 and leading into the violent downswing of 1929–1933.

Obviously, this is a politico-economic rather than a purely economic judgment. It rests on the notion that "sanctity of contracts" is essential for our type of economic system and that the government should be even more particular about its own contracts than about private ones. This judgment may be wrong; it cannot be proved right by pure economics. In a country where public and private contracts have both been tampered with by outsiders (as in Belgium and elsewhere in Europe under Nazi occupation), the case for rewriting contracts may become overwhelming.

[44] When I first studied money and banking (in 1928–1929), I somehow picked up the impression that economists felt that the business cycle was at last extinct—and felt a certain professional regret, as they were just getting to understand it! Going back over readings and lecture notes, I find little trace of this view in the course: it somehow seeped in from newspaper reading, and so forth. But it was certainly in the air in those days.

I conclude that we certainly have a fluctuations problem, and that we may also have a stagnation problem. On the other hand, if stagnation ever sets in, it must take the form of a recession followed by an incomplete recovery. That is, in practice, the stagnation problem will present itself in terms of the fluctuations problem. If we can design an anti-fluctuations policy which prevents deep and long depressions, then we shall find that we have an effective anti-stagnation policy. On the other hand, adoption of an anti-stagnation policy would be likely to involve such a shock to business "confidence" that investment would indeed stagnate. Thus, such a policy would mean taking avoidable risks.

In this situation, it is urgent to improve our automatic stabilizers as much as possible. For the rest, it seems to me that we must start from where we find ourselves. In fiscal policy, for example, we should not worry too much at the outset as to whether we have found the ideal level for tax rates, or public works activity, or transfer payments. What is more important is to list the shifts in policy which will help against a deflationary bulge in unemployment or an inflationary bulge in prices, and to reach a political consensus as to when to do what.

My recommendation would be what I have called a "gong-and-whistle" system.[45] The "gong" would be set off by a rise of unemployment beyond a moderate minimum—perhaps 4 million workers, as measured by the monthly Census labor-force estimates. The "whistle" would be set off by a price rise in excess of some fairly moderate rate: say, a rise exceeding 4 per cent in six months as measured by the cost-of-living index. So long as neither sounded, control could be left to the automatic stabilizers. But the "gong" would be the signal for reducing excises toward destination levels, for a temporary cut amounting to $1 or $2 billion per annum in individual income tax rates, and so forth. The "whistle" would be the signal for tightening bank credit and for temporary tax increases. Advance preparation might also be made for intensifying these actions if unemployment grew worse or if

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[45] A. G. Hart, "The Problem of 'Full Employment': Facts, Issues and Policies," *American Economic Review*, Proceedings, Vol. XXXVI, No. 2 (May 1946), pp. 280–290, especially 289–290. For another point of view, see John H. G. Pierson's discussion of this paper, *ibid.*, pp. 318–326, reprinted in his *Full Employment and Free Enterprise* (Washington: Public Affairs Press, 1947), pp. 174–179.

rapid price advance continued. With such a policy structure, we can safely leave it to experience to determine the danger of "stagnation." If the need for anti-unemployment measures proves chronic, it will be time enough to convert an anti-fluctuations policy into an anti-stagnation policy.

What if the gong and the whistle both sound at once? That is, what if prices begin to climb fast while unemployment is fairly heavy? For this case there is no easy prescription. If unemployment is still heavy, to boost taxes, cut back public works, and tighten bank credit is almost sure to make it worse. But if prices are climbing fast, we can see that the spending power which monetary-fiscal policy is putting into the markets to improve employment is running to waste: the more it boosts prices, the less it is taking hold on the physical volume of output and on employment. If both signals sound at once, then, we should declare an emergency in the field of price policy. The remedy is somehow to remove the factors which are making prices rise before full employment is reached: to improve the mobility of labor, to curb the farm-price-boosting activities of Congress and the Department of Agriculture, to discourage rapid wage increases under collective bargaining, and to put pressure on business to expand sales rather than raise selling prices.

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Note on Alternative Points of View and Supplementary Readings

A whole gallery of "postwar plans for full employment"—resting largely on discretionary measures—is described in L. Fitch and H. Taylor, *Planning for Jobs* (Philadelphia: Blakiston, 1946). This collection rests on some 200 essays filed in the Pabst Brewing Company's "Postwar Employment Awards" competition. The 17 essays that were granted "awards" are printed complete (although without the supplementary "exhibits" filed with some of them) in W. Alderson and others, *Winning Plans in the Pabst Postwar Employment Awards* (Milwaukee: Pabst Brewing Company, 1944).

For a view of "compensatory fiscal policy" centering chiefly on "public investment," see International Labour Office, *Public Investment and Full Employment* (Montreal: International Labour Office, 1946), pp. 1–58 and 291–305.

— *Chapter XXIV* —

THE MONETARY CONSTITUTION

Machinery versus Attitudes. Most of the policy discussion of this book has naturally been about what measures would prove appropriate in what conditions. In closing the book, I feel bound to say something about the political organization and attitudes that it will take to make stabilization effective.

These political requirements of stabilization are partly for machinery. No form of organization, of course, can obtain wise policy from men who have no wisdom in them. But poor organization can obtain unwise policy from men who have wisdom in them. This isn't merely a possibility—it is probably the actual situation!

More fundamental than the question of machinery is the question of attitudes. We shall get nowhere with stabilization unless the public and the government mean business. If any special interest which is affected by public policy can hang out a little "Do not disturb" sign which will block policy action, it is a safe forecast that economic stabilization will not succeed. Economic stabilization thus calls on the major interest groups ("big business," unionized labor, organized farmers, and, last but not least, organized politicians) to accept a stabilization program—and to forego using the "veto" which in practice each of these groups possesses. I do not mean that stabilization policy should be arrived at by calling "business, labor, and farmers" in conclave and adopting any program on which they can agree. But somehow we must get a sort of agreement to stop domestic economic warfare [1] among these groups which will clear the track for the necessary government policies and give us safeguards against private pricing policies which would make monetary-fiscal policy ineffective.

Stabilization Mechanics. In terms of mere governmental mechanics, the needs of stabilization policy can be read off from

[1] There are many parallels between the international economic warfare which came up for discussion in Part IV and the domestic conflicts of interest groups.

the discussion of the last few chapters. To name the main items, the situation requires:

1. Changing reserve rules (by introducing "security reserves" and making combined security-reserves-and-cash-reserve requirements 50 per cent or more) to restore Federal Reserve control over commercial bank reserve positions, and to reduce the "credit-creation multiplier."
2. Practical working out of the "reserve shelf of public works" idea on a large scale.
3. Arrangements for making well-timed temporary adjustments in tax rates: chiefly, first-bracket personal income taxes; perhaps also, Social Security contributions.
4. Arrangements for making well-timed reductions toward destination levels in excises, and so forth.

Machinery for Policy Formulation. More important than mere mechanics for putting policy into force is the improvement of the government as a machine for deciding about policy. A good deal of progress was made in this field during the early post-war reconversion period, but more is needed.

To begin with the executive end of the government, we find a conspicuous hiatus between the Federal Reserve and the Treasury. Most monetary operations in the narrow sense and a large share in the broader sense (including taxes and expenditures) come under these two organizations. But the war seems to have produced a semi-permanent subjection of the Federal Reserve to the Treasury. At the same time, the Treasury seems to take a narrow rather than a wide view of its responsibilities, centering on the size of the interest on the national debt, and the protection of security-holders. Thus, there is no operating agency which really works at economic stabilization via monetary-fiscal policy.[2]

[2] The Office of Economic Stabilization in the latter part of the war, under Judge Vinson (now Chief Justice), showed signs of filling this gap. But when the office lapsed, this function also lapsed. Vinson himself, while Secretary of the Treasury in the autumn of 1945, seems to have treated excess-profits tax repeal as a "pure" tax problem rather than a piece of the economic-stabilization program. As I see it, the repeal of the excess-profits tax made continuation of wage control impossible, so that, in turn, continuation of price control was made impossible; thus, the decision was rather a momentous one, marking the end of the wartime stabilization compromise among the interest groups.

The Council of Economic Advisers apparently feels a strong concern with stabilization issues; but it has a great many other irons in the fire, and is too new and too insecurely placed to have a decided influence.

On the Congressional side, legislation of 1946 marked a great advance. A joint committee of both Houses (representing both the committees on taxes and the committees on appropriations) was set up by the Congressional Reorganization Act to study the President's budget and report a "legislative budget" with a coordinated tax and expenditure policy. As I write, it is still uncertain how effective this joint committee will be; in the end, its 1947–1948 budget-making fell through. The Full Employment Act (which also set up the Council of Economic Advisers) called upon the President for periodic reports on the economic situation and needed policy measures, and created standing House and Senate committees "to receive the economic report." By composition (including ranking members of several key committees), these committees are capable of acting as steering committees on economic policy, and they have shown signs of reaching out for this position.

Perhaps the most serious weakness of government machinery in this field is one which does not show up in the organization charts: the question how the people involved make their careers, and what their political incentives are. With the notable exception of Chief Justice Vinson, Congress has not been the training ground of any of the men called on to frame monetary-fiscal policies in recent years. One way of putting this criticism is that the Congress has not developed men of the stamp who would take the desired kind of leadership in the Treasury, Federal Reserve, Bureau of the Budget, and so forth. Another way of putting it is that the failure to develop a channel of promotion *through* Congress into the top posts makes the incentives of Congress unhealthy. An opposition member of Congress who points out what is wrong in administration policies in these matters does not have the prospect of taking over the job of policy-making if his side wins the next election. An administration Congressman who defends actual policies and makes suggestions for rendering them more defensible does not thereby become an eligible for Undersecretary of the Treasury or for a post on the Board of Governors of the

Federal Reserve System. In short, there is neither the reward of promotion nor the penalty of having to carry out the policy he frames to ballast the monetary-fiscal thinking of a member of Congress. He is left to think in terms of the relatively narrow local constituency which may re-elect him, rather than of national leadership. This handicap on Congress (for which, obviously, there is no easy remedy) is one of the main barriers to improvement of policy.

Long-Run Prospects. Despite the gains recently scored in public concern and in government machinery, it does not look as though the unemployment-inflation problem were under control. The fumbling approach to the inflationary situation of 1946–1948 is discouraging—particularly since the difficulty in laying out a policy came because we were in prosperity and a downturn seemed a lively possibility. This is exactly the position we are apt to be in much of the time if stabilization policy succeeds!

At the same time, real headway has been made. In a few years, when we have enough postwar experience behind us to answer some of the puzzles about the way our economic system acts with peacetime full employment, it will be possible to frame better policy advice than economists can offer now. If experience is also a good teacher for the public and the politicians—and democracy is supposed to rest on their ability to learn by experience—the time will be ripe for designing a really adequate program for stabilization within our free economy. But if experience is to prove a good teacher, we must use it to good advantage. If we insist on warping our interpretation to prove that our forecasts were perfect and our policy advice infallible, the main thing which the public will learn will be distrust of those who analyze the course of business. But if we are really prepared to admit mistakes and look for our sources of error, we can hope to grow in wisdom until we are able to eliminate the dangers of inflation and unemployment.

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Note on Alternative Points of View and Supplementary Readings

On the role of economics and economists in stabilization policy, see E. A. Goldenweiser, "The Economist and the State," *American Economic Review,* March 1947, pp. 1–12, and E. G. Nourse, "Economics

in the Public Service," *ibid.*, Papers and Proceedings, May 1947, pp. 21–30. The latter is particularly interesting as the view of the chairman of the Council of Economic Advisers. See also the first annual report of the Council (reprinted in *Federal Reserve Bulletin*, January 1947), which presented the Council's interpretation of the Employment Act of 1946 and of its functions.

— Appendices —

— *Appendix A: For Chapter VIII* —

The Margin-of-Safety Motive in Relation to Inventories and Insurance. In Chapter VIII, the relation of uncertainty to the demand for cash assets is focused on the "margin-of-safety motive." In order to put monetary theory in proper relation to general economic theory, it should be stressed that the margin-of-safety motive applies to other things besides cash holdings. The same logic (and lack of logic) is at work in inventory decisions and insurance—to take two fields for illustration. In fact, the margin-of-safety motive for holding cash turns out to be only a special case of a very general principle: that of meeting uncertainty by preserving freedom to change a course of action as fuller information comes in.

The holding of inventories is like the holding of cash in many ways. Inventories (of materials, of semi-finished goods awaiting further processing, and of salable products) are held partly because of "transactions needs": because inflow and outflow of goods are irregular and cannot be made to synchronize perfectly.[1] But there is also an important margin-of-safety element. If inventories of materials of any type are cut too close, delay in an expected delivery (or discovery of defects in materials on hand, or acceleration of output) will throw operations out of stride. Workers may stand idle and other materials may deteriorate through the change in schedule. If inventories of salable goods are cut too close, delay in output means that orders cannot be filled and that sales will be lost to competitors. As with inadequate cash, inadequate inventory intensifies *linkage of risks,* so that any one misfortune will generate others. Furthermore, as with inadequate cash, inadequate inventory prevents seizing favorable opportunities (for example, filling unexpected selling orders).

Insurance is the clearest case of allowing a margin of safety to cover uncertainty. There would be inventories in the absence of uncertainty, but it takes uncertainty to make it *mutually* advantageous for the insurance company and the policyholder to do business with each other. If the house were sure to burn, the company couldn't afford to insure it; if it were sure not to burn, the owner couldn't afford to pay premiums. Insurance, as a pure uncertainty phenomenon, is a good place to study the uncertainty motives we have seen affecting cash.

A key fact about insurance is that it necessarily involves premiums

[1] The well-known influence of seasonal fluctuations on inventory is one example of forces creating such "transactions needs."

exceeding "actuarial value." [2] A fire insurance company, for instance, has to cover losses of two types. There are losses from fires which its policyholders couldn't avoid. There are also fraudulent losses where policyholders intentionally destroy property or pad legitimate claims. The company has to set limits to fraudulent losses by enforcing safety rules, by scrutinizing claims, and, on occasion, by going to law. Besides meeting losses of both types and covering the expenses of limiting fraudulent losses, the company has to cover its office and selling expenses; and it aims to make a profit, too. Records for the last years of the interwar period suggest that fire insurance and "casualty insurance" (chiefly automobile liability insurance and employers' liability insurance against industrial accidents) sold at over double actuarial value,[3] and life insurance substantially above actuarial value.[4]

Now *why* do people annually pay billions of dollars for insurance, when the odds are against them in this way? Partly, perhaps, because they do not realize the odds. Partly, perhaps, because they hope that insurance will ward off the danger insured against. A superstitious feeling that to lack protection is to "tempt providence" is very widespread. We make a joke of this, telling people who go on vacation trips without raincoats that they will bring on the rain; but in most people's attitude there is an undercurrent of seriousness. More objectively, insurance companies try to combat the hazards they insure against. Thus, taking insurance may be a way to get valuable safety advice; but such advice is often handed out impartially to the insured and the uninsured.

Willingness to insure probably comes largely from the factors used in the text to explain the "margin-of-safety motive" for holding cash—namely, the principle of linkage of risks and financial respectability. On the side of respectability, those who do not insure against certain hazards are considered rash. Where the risk is physical injury to an-

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[2] By this term is meant the "objective probability" of a loss—or the percentage of the sums at risk which the company's experience shows it will probably have to pay on the class of risk in question.

[3] For 1940, for example, "stock casualty companies" paid losses (including adjustment expenses) of 47.9 per cent of premiums; for "stock fire insurance companies" the corresponding ratio was 40.4 per cent (excluding adjustment expenses). For mutual insurance companies, deducting dividends to policyholders from premiums, the ratios were similar. (Data on insurance are conveniently presented in *Statistical Abstract of the United States.*)

[4] For life insurance, figures corresponding to those given in footnote 3 cannot be computed, since life insurance writes long-term contracts and premiums are not comparable with losses in the same year. But in 1940 the total paid to policyholders (excluding dividends) was $2.2 billion, and $1.5 billion was added to reserves for the eventual benefit of policyholders. The sum of these two figures ($3.7 billion) was about 75 per cent of the sum of these two items plus expenses. Very roughly, this suggests that premiums were about 1⅓ times actuarial value for life insurance as against about 2½ times for fire insurance and about double for casualty.

other person (automobile insurance [5] and employers' liability), insurance is often compulsory. Conventional standards of prudence do not cover all kinds of insurance on the market (for example, prospective parents are not thought rash if they fail to insure against having twins). But people who overlook life insurance, fire insurance, automobile liability insurance, and so forth, endanger their credit rating, and will pay a price in higher interest and in intensification of risks of "illiquidity."

The "respectability" argument for insurance brings to light a factor often overlooked in relation to the margin-of-safety motive for holding cash—namely, standards for handling *other people's money.* Consider a salaried business manager thinking about fire insurance. He is almost forced to take out insurance, whether or not he thinks the risk is worth the premium. If the firm has a fire, he will be thought prudent if he has taken out insurance, but may find his whole career blighted if he has taken out none. If there is no serious fire loss during the term of the policy (as, of course, happens more often), he will find it hard to get praise and promotion for saving needless insurance premiums. But so long as he has not paid more than the usual premium for the sort of policy he took out, it is unlikely that he will be blamed for taking out needless insurance. In the theory of money, the same force makes it prudent to hold too much cash rather than too little. Punishment of a manager for getting the firm into trouble by keeping too little cash is much more certain than the reward for enhancing the firm's earning power by putting more assets into forms that contribute to earnings.

The linkage-of-risks factor is also brought out very clearly by life insurance. Suppose that a professional man has a son who purposes to take long and expensive training to become a doctor. Think what will happen to the son's training if he has been a year in medical school when his father dies and leaves a widow and younger children without life insurance. The loss of the father's earning power will lead to a second loss—the son's abandoned professional training. This linkage of risks must be taken into account when the son starts his premedical work. Unless the family can plan so that the son may continue his studies, whatever happens, it may not be worth making sacrifices to finance medical training. A life insurance premium will divorce the risk of the father's death from the risk that the son cannot finish his training—a fact which raises the value of life insurance.

[5] With automobile insurance, social policy is influenced by the suspicion that some people who fail to insure are expecting to take refuge in bankruptcy if they run over somebody, having no property which the courts could seize for the benefit of the injured party. Commonly, people who do not choose to insure are excused if they can prove that they have enough property to make good such a claim.

— *Appendix B: For Chapter IX* —

Algebraic Treatment of Expected and Realized Flows of Payments. To illustrate the relationships between expected and actual receipts described in the text, and to provide a foundation for the results briefly sketched in Chapter IX, pages 216–222, calls for an algebraic discussion. The procedure used represents an improved version of that developed in two of my articles in 1937–1938,[1] which, in turn, are developed from Swedish ideas.

A mimeographed paper on the savings-investment problem by Professor Erik Lindahl (1934) suggested much of the analytical structure and especially the useful device of subtracting an *ex post* from an *ex ante* equation. Professor Lindahl's *Money and Credit* (London, Allen and Unwin, 1939, pp. 74–136) contains an elaborate development of his ideas. My divergence from his exposition results partly from my efforts at simplification, partly from the fact that I try to steer clear of *income account* concepts, on the ground that "income" for a period is not finally on an *ex post* basis at the end of the period, since later experience may lead to revaluations of assets which alter income accounts retrospectively. The *cash account* in which I deal can be finally closed the moment that the period studied comes to an end, so that the *ex post* basis is more definite.

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[1] "Failure and Fulfillment of Expectations in Business Fluctuations" (*Review of Economic Statistics,* May, 1937, pp. 71–72); "Consumption Markets" (*American Economic Review,* supplement, March, 1938, pp. 122–125).

TABLE 13

Generalized Cash Account

$*m(0)$	: Cash held at the beginning of the period—always known from the outset, of course;
$+_r g$	: receipts from sales of *goods* and services;
$+_r d$	: receipts from *dividends* and other receipts from business profits not paying for specific productive services, including interest;
$+_r t$	: receipts of *taxes* (for a government);
$+_r f$	: receipts from *financing* (borrowing or sale of securities);
$+ n$	: creation of *new* money (printing by a government; net expansion of credit by a bank);
$=$	
$_p g$	: payments for purchases of *goods* and services;
$+_p d$	: outpayment of *dividends* and other profit payments;
$+_p f$	: outpayments for *financing* (lending or purchase of securities);
$+_p t$	: outpayments of taxes;
$+ m(1)$	: cash held at date t_1 (i.e., end of period).

Meaning of Symbols in Tables 13–16

m : Dollars of cash (coin + paper money + bank deposits + accounts receivable less accounts payable), held at date (0) or (1).

g : Dollars paid for *goods* and services.

d : Dollars paid for *dividends* or other profit distributions.

t : Dollars paid in *taxes.*

f : Dollars paid in *financing.*

n : Dollars of *new* money created.

$M, G, D, T, F,$ or N: A *combined* total of corresponding items for *all* economic units in the group indicated by the small letter to the right of the $M, G, D, T, F,$ or N. These letters denote:

h : *households* (including farmers), treated as consumers and as suppliers of labor and farm products;

e : *enterprises* (corporations and unincorporated nonfarm businesses, excluding banks);

b : *banks;*

w : the *world* outside the country under study;

s : the *state* (central and local governments).

An asterisk (*) to the left of the $M, G, D, F, T,$ or N indicates *ex post* measurement of actual sums experienced.

Absence of an asterisk indicates *ex ante* measurement. A small $_p$ to the left of the $G, D, F,$ or T indicates an estimate by the *payer;* a small $_r$, by the prospective recipient of payment. M's are estimated by the holder; N's, by the money-creators.

Payment terms ($G, D, F,$ or T) have two subscripts at the right: the first shows who is to receive the payment; the second, who is to make payment, by class of dealer.

Generalized Cash Account. A general system for handling these relations is embodied in the "generalized cash account" presented on page 528. Each item in the cash account is assigned a letter; so that the cash account becomes an equation which holds between two sets of algebraic symbols. Following the rule that "equals added to equals are equal," we can combine accounts by adding corresponding amounts over the accounts of all the dealers in a group. These "groups" are taken, for present purposes, to be five: households; enterprises other than banks; banks; the outside world; and the state (central and local government).

The resulting equations are very simple in structure, since the only relationships with which we are dealing here are additive. We carry out only additions, subtractions, and transpositions from one side of an equation to the other (with change of sign); there is not a division or a multiplication in the whole operation.[2]

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[2] This simplicity results from the modesty of my objectives. You will observe that I am always content to stop with measuring one variable or the sum of a set of variables as the algebraic sum of a long list of other variables. An analysis which aimed to arrive at unique solutions in terms of specific magnitudes would have to find a large number of other relationships among the variables besides this set of cash-account equations; and some of these other relationships would be algebraically much more complex.

TABLE 14

COMBINED *Ex Ante* CASH ACCOUNT FOR ALL BUSINESS ENTERPRISES (EXCLUDING BANKS) FOR THE PERIOD FROM t_0 UNTIL t_1

$*M_e(0)$	: Cash held by businesses at the outset;
$+_rG_{eh}$	: Prospective receipts of business from sales of goods and services to households, as estimated at t_0 by respective sellers;
$+_rG_{ew}$	: Prospective receipts of business from export sales to the outside world (sellers' t_0 estimates);
$+_rG_{ee}$	: Prospective receipts from sales of goods and services by one business to another (sellers' t_0 estimates);
$+_rG_{es}$	: Prospective receipts of business from sales to government (sellers' t_0 estimates);
$+_rF_{eb}$	: Prospective receipts of business from borrowing at banks (borrowers' t_0 estimates);
$+_rF_{eh}$	: Prospective receipts of business from financing by consuming households (borrowers' t_0 estimates);
=	
$_pG_{he}$	: Prospective payments of business enterprises to households for goods and services (chiefly labor services and farm products) as estimated at t_0 by prospective buyers;
$+_pG_{we}$	: Prospective import purchases (buyers' t_0 estimates);
$+_pG_{ee}$	: Prospective inter-business purchases (buyers' t_0 estimates);
$+_pD_{he}$	: Prospective dividends, etc., to households (payers' t_0 estimates);
$+_pT_{se}$	: Prospective tax payments by business (taxpayers' t_0 estimates);
$+_pF_{be}$	: Prospective repayments of business loans, etc., at banks (t_0 estimates of debtors);
$+_pF_{he}$	: Prospective repayments of loans, etc., at households (t_0 estimates of debtors);
$+ M_e(1)$	: Prospective business cash holdings at t_1 (t_0 estimates of prospective holders).

Business Account *Ex Ante*. The first application of our generalized account is to draw up a combined account for all business enterprises other than banks, *ex ante*. The result appears in Table 14. The *ex post* account (not reproduced) would look exactly the same, except that the estimator subscripts would vanish and asterisks would appear on all terms to show their *ex post* character; thus, the term ${}_rG_{eh}$ would become $*G_{eh}$.

Attention may be concentrated on the terms showing business receipts from nonbusiness customers: the G terms on the receipts side, excluding ${}_rG_{ee}$. To make these terms stand out, the equation may be rearranged by transposing the other terms on the receipts side to the other side of the equation and changing the order of terms. The result is:

${}_rG_{eh}+{}_rG_{ew}+{}_rG_{es}$	: Prospective receipts from sales to nonbusiness customers;
$=$	
${}_pD_{he}+{}_pG_{he}$	: Prospective income payments by business;
$+{}_pG_{ee}-{}_rG_{ee}$	: The discrepancy between buyers' and sellers' estimates of inter-firm dealings;
$+{}_pT_{se}$	: Prospective tax payments;
$+{}_pG_{we}$	: Prospective import purchases;
$+{}_pF_{be}-{}_rF_{eb}+{}_pF_{he}-{}_rF_{eh}$	: Prospective net repayment of financing;
$+M_e(1)-*M_e(0)$	: Prospective net growth of business cash holdings.

TABLE 15: COMBINED *Ex Post* RECEIPTS OF BUSINESS FROM NONBUSINESS, DERIVED FROM NONBUSINESS ACCOUNTS

Account	Households	Rest of World	State	Banks	Combination
Business receipts	$^*G_{eh}$	$^*G_{ew}$	$^*G_{es}$	0[a]	$^*G_{eh}+{}^*G_{ew}+{}^*G_{es}$
	=	=	=	=	=
Taxes	$-{}^*T_{sh}$	0[a]	$^*T_{se}+{}^*T_{sh}+{}^*T_{sb}$	$-{}^*T_{sb}$	$^*T_{se}$
Income payments, etc.	$+{}^*G_{he}+{}^*G_{hs}+{}^*G_{hb}$ $+{}^*D_{he}+{}^*D_{hs}+{}^*D_{hb}$	$+{}^*G_{we}$ 0[a]	$-{}^*G_{hs}$ $-{}^*D_{hs}$	$-{}^*G_{hb}$ $-{}^*D_{hb}$	$+{}^*G_{he}+{}^*G_{we}$ $+{}^*D_{he}$
Financing, not touching business directly	$+{}^*F_{hb}+{}^*F_{hs}$ $-{}^*F_{bh}-{}^*F_{sh}$	$+{}^*F_{wb}$ $-{}^*F_{bw}$	$+{}^*F_{sh}+{}^*F_{sb}$ $-{}^*F_{hs}-{}^*F_{bs}$	$+{}^*F_{bh}-{}^*F_{hb}$ $+{}^*F_{bw}-{}^*F_{wb}$ $+{}^*F_{bs}-{}^*F_{sb}$	0
Financing touching business	$+{}^*F_{he}-{}^*F_{eh}$	0[a]	0[a]	$+{}^*F_{be}-{}^*F_{eb}$	$+{}^*F_{he}+{}^*F_{be}$ $-{}^*F_{eh}-{}^*F_{eb}$
Initial cash	$+{}^*M_h(0)$	$+{}^*M_w(0)$	$+{}^*M_s(0)$	0	$+{}^*M_h(0)+{}^*M_w(0)+{}^*M_s(0)$
Final cash	$-{}^*M_h(1)$	$-{}^*M_w(1)$	$-{}^*M_s(1)$	0	$-{}^*M_h(1)-{}^*M_w(1)-{}^*M_s(1)$
Money creation	0[a]	0[a]	$+{}^*N_s$	$+{}^*N_b$	$+{}^*N_s+{}^*N_b$

[a] Assumed zero for simplification. Other zeros are "genuine." The zero in the "Combination" column must come from the addition by definition; the zeros in the "Banks" column arise from the logic of the credit-creation equation: see the text.

Derivation of Actual Business Receipts from Nonbusiness Accounts. The actual *(ex post)* receipts of business from nonbusiness buyers can be obtained either from the business accounts or from the accounts for nonbusiness dealers. The second procedure is adopted in the table on page 532 opposite

Each column of the table represents the application of the generalized cash account to one of the major nonbusiness groups. The outlay items which constitute business receipts are put on one side of the equations. On the other side are the receipts of the group in question, together with the other outlay items (with minus signs because they are transposed to the receipts side). The fourth column is the only one calling for special explanation. Banks do not figure significantly as customers of business. But their dealings with others have to be brought in to unsnarl the national accounts. This column is drawn up as a "credit-creation equation"; its interpretation is that the sum of credits extended and expenses, taxes, and dividends paid *less* loan repayments received (to be taken inclusive of interest) equals the amount of credit created.[3] In combining the equations, many of the terms which are positive for one class of nonbusiness dealers appear with minus signs in the columns of other dealers, and thus cancel.

Looking at the "combination" column, one's first impulse is to rub his eyes. It seems at first sight to say that in business "it is more blessed to give than to receive"; for it asserts that actual business receipts will be larger as business:

> Pays more taxes;
> Pays more to employees and suppliers;
> Pays more dividends;
> Increases its loan repayments relative to its borrowers; and as nonbusiness holders have larger initial cash balances!

The apparent paradox, however, is a fraud. The interpretation of the result is that each business firm gains if *others* make large outpayments. For business as a whole, of course, if paying out more will bring in more the results are neutral, to a first approximation. The *composition* of outpayments will, of course, affect the profit situation.

[3] See Chapter I, pp. 63–76.

TABLE 16

COMBINED EXCESS OF *Ex Ante* OVER *Ex Post* RECEIPTS OF BUSINESS FROM NONBUSINESS

$-{}_{r}G_{eh}+{}_{r}G_{ew}+{}_{r}G_{es}$ $-{}^{*}G_{eh}-{}^{*}G_{ew}-{}^{*}G_{es}$	: Excess of anticipated over actual sales receipts of business from nonbusiness
=	
$-{}_{p}D_{he}+{}_{p}G_{he}$ $-{}^{*}D_{he}-{}^{*}G_{he}$	: Excess of planned over actual income payments by business to consuming households; (1)
$+{}_{p}T_{se}-{}^{*}T_{se}$	: Excess of planned over actual business tax payments; (2)
$+{}_{p}G_{we}-{}^{*}G_{we}$	: Excess of planned over actual import purchases; (3)
$+{}_{p}F_{he}+{}_{p}F_{be}-{}_{r}F_{eh}-{}_{r}F_{eb}$ $-{}^{*}F_{he}-{}^{*}F_{be}+{}^{*}F_{eh}+{}^{*}F_{eb}$	: Excess of planned over actual *net* repayment by business to households and banks of outstanding loans; (4)
$+{}_{p}G_{ee}-{}_{r}G_{ee}$	: Discrepancy between buyers' and sellers' estimates of inter-firm dealings; (5)
$+M_{e}(1)-{}^{*}M_{e}(0)$	: Planned increase of business cash holdings; (6)
$-{}^{*}N_{b}-{}^{*}N_{s}$	: Actual decrease in stock of cash; (7)
$+{}^{*}M_{h}(1)+{}^{*}M_{w}(1)+{}^{*}M_{s}(1)$ $-{}^{*}M_{h}(0)-{}^{*}M_{w}(0)-{}^{*}M_{s}(0)$	: Actual increase in portion of cash held by nonbusiness groups. (8)

Items numbered (1), (2), and (3) represent *cutbacks* as against plans in *current-account* outpayments to nonbusiness groups;

Item (4) represents a *cutback* in planned *financial* outpayments to nonbusiness groups;

Item (5) represents *inconsistencies* in plans as among businesses;

The sum of items (6), (7), and (8) represents *inconsistency* in business plans for their cash balances with the actual monetary situation: creation of cash by government and banks, and demand for cash balances on the part of consumers, government, and foreigners.

Shortfall or Overshot of Business Receipts as against Estimates. It is very illuminating to compare the *actual* receipts of business from sales to nonbusiness groups (as derived in Table 15) with the *prospective* receipts (as derived in Table 14). This comparison may be made in the form of an algebraic subtraction of actual from prospective receipts. The difference, if positive, represents a shortfall of receipts as against estimates—an *unpleasant surprise* for business. If the difference is negative (that is, if actual receipts exceed estimates), it is an overshot—a *pleasant surprise.*

The subtraction of the two equations leads to the equation shown in Table 16. This is most readily interpreted by taking the numbered terms, singly and in appropriate groups of terms, and asking what it means if this term (or group of terms) is positive while all others are zero:

(1) Receipts will tend to fall short of estimates to the extent that business cuts back its planned payments of income to consuming households.

(2) Receipts will tend to fall short of estimates to the extent that business pays less taxes than planned—*assuming* all other terms in the list to be zero. But note that this implies $*N_g$ and various terms involving government financing to be zero—that is, that government will cut back spending because tax receipts are off. If government spending is unaffected, $*N_g$ will offset a cutback of taxes, or government cash holdings will fall off, or government will borrow at banks (creating a positive $*N_b$), or government will draw funds away from individuals by borrowing.

(3) Receipts will tend to fall short of estimates to the extent that import purchase plans are cut back. (Here note the proviso that the cash of the "rest of the world" is not changed, which implies that exports will drop to match imports.)

(4) Receipts will tend to fall short of estimates to the extent that business cuts back planned repayments or increases borrowings as against plans, giving consumers less spendable funds. (Note the effects of the proviso that other terms be constant: zero values for $*N_b$ and for the change in cash of consumers are involved.)

(5) Receipts will tend to fall short of estimates to the extent that inter-business purchasers estimate transactions higher than inter-business sellers.

(6) Receipts will tend to fall short of estimates to the extent that business plans to increase its cash. (The proviso means here that there is no growth of cash stock, and that nonbusiness groups do not prove willing to let their portion of cash run down.)

(7) Receipts will tend to fall short of estimates to the extent that the total stock of cash is reduced.

(8) Receipts will tend to fall short of estimates to the extent that nonbusiness groups insist on increasing their cash holdings.

Or, using *groups* of these terms:

(1, 2, 3) Receipts will tend to fall short of estimates to the extent that business cuts back its current-account outpayments to nonbusiness groups.

(6, 7, 8) Receipts will tend to fall short of estimates to the extent that business plans for building up cash are inconsistent with the actual building up of the cash supply by credit creation and the willingness of nonbusiness groups to change their holdings.

Evidential Value of the Findings. Care is necessary to avoid claiming too much for these findings. They do not contain enough evidence to tell us what will be the results of a decision affecting any of these terms; for such a decision will ordinarily have by-product effects on others. (For example, a tax cut affecting term (2) will also affect terms (4), (7), and (8), as noted above.) The most that we know definitely from this kind of analysis, running in terms of truisms based on accounting definitions, is that *statements inconsistent with the truisms must be false.* But this is actually a good deal of knowledge: it condemns a large proportion of the statements we might otherwise find plausible about business fluctuations.

— *Appendix C* —

SOURCES OF MATERIAL IN TIME-SERIES DIAGRAMS

A detailed statistical appendix is scarcely necessary for this book, as almost all the figures used are published elsewhere (or else are simple combinations of figures published elsewhere). The only independent compilations which I have made are that of cash assets, shown in Table 17, and that of industrial national income in Table 18. For the rest, I offer a listing of sources, arranging the series by the symbols used to identify them on the diagrams. In many instances I list secondary rather than primary sources, where the form of publication makes them more convenient.

Price Series

	Diagrams Where Used
P-1. Wholesale Prices, 1926 = 100, Bureau of Labor Statistics, Annually, 1860–1947. From 79th Congress, 1st Session, Senate Committee Print No. 4, *Basic Facts on Employment and Production* (Washington, 1945), p. 16; recent data from *Federal Reserve Bulletin*.	2
P-1A. Wholesale Prices, 1910–1914 = 100, Monthly Figures Reduced to Quarterly Averages, 1870–1903. From G. F. Warren and F. A. Pearson, *Prices* (New York: Wiley, 1933), pp. 12–13. By permission of the publisher. . .	22, 23
P-1B. Wholesale Prices, 1926 = 100, B.L.S., 1899–1947, Monthly Figures Reduced to Quarterly Averages. The 1890–1937 figures are published conveniently in F. R. Macaulay, *Movements of Interest Rates, Bond Yields, etc.* (New York: National Bureau of Economic Research, 1938), pp. A2 58 ff. By permission of the National Bureau. Recent data conveniently available in *Federal Reserve Bulletin*	24, 25
P-2. Wholesale Prices, Metals and Metal Products, B.L.S., 1926 = 100, Annually, 1890–1947. *Statistical Abstract of the United States*, 1946, p. 284; recent figures from *Federal Reserve Bulletin*.	15

TABLE 17: Cash Assets of the Nonbank Public, 1866–1947

(In billions of current dollars)

Year	Coin & Paper Money	Commercial Bank Deposits		Mutual Bank Deposits	Total Cash	Year	Coin & Paper Money	Demand Deposits Adjusted	Means of Payment	Time Deposits		Total Cash
		Nat'l	Other							Commercial Bank	Mutual & Postal Savings	
	A	B	C	D	E		F	G	(F+G) H	I	J	K
1866	.72	.44		.27		1892	1.02	2.9	3.9	0.47	1.47	5.8
1867	.67	.42		.32		1893	1.07	2.8	3.8	0.46	1.54	5.8
1868	.59	.43		.37		1894	.99	2.8	3.8	0.46	1.55	5.8
1869	.58	.41		.43		1895	.97	2.9	3.9	0.49	1.60	6.0
1870	.61	.43		.51		1896	.98	2.9	3.8	0.53	1.68	6.1
1871	.62	.47		.60		1897	1.03	2.9	4.0	0.56	1.74	6.3
1872	.67	.49		.67		1898	1.14	3.4	4.6	0.58	1.83	7.0
1873	.68	.51	.55	.70	2.43	1899	1.20	4.1	5.5	0.67	1.97	7.9
1874	.67	.54		.74		1900	1.32	4.5	5.8	0.88	2.1	8.8
1875*	.64	.56	.57	.80	2.56	1901	1.39	5.2	6.6	1.05	2.3	9.9
1876	.62	.55	.56	.82	2.54	1902	1.44	5.7	7.1	1.18	2.4	10.7
1877	.64	.55	.53	.81	2.53	1903	1.53	6.0	7.5	1.30	2.5	11.3
1878	.64	.53	.47	.76	2.40	1904	1.57	6.3	7.9	1.46	2.6	12.0
1879	.64	.57	.48	.74	2.43	1905	1.64	7.0	8.7	1.71	2.7	13.1
1880	.75	.71	.59	.79	2.84	1906	1.74	7.5	9.3	1.90	2.9	14.0
1881*	.86	.83	.72	.86	3.3	1907	1.71	7.8	9.5	2.3	3.0	14.8
1882*	.92	.88	.83	.93	3.6	1908	1.71	7.5	9.2	2.5	3.1	14.8
1883	.97	.92	.88	.98	3.8	1909	1.70	7.8	9.5	3.1	3.1	15.7
1884	.96	.92	.90	1.01	3.8	1910	1.72	8.3	10.0	3.6	3.3	16.9
1885	.95	.97	.92	1.04	3.9	1911	1.72	8.7	10.4	3.9	3.4	17.7

TABLE 17: CASH ASSETS OF THE NONBANK PUBLIC, 1866–1947 (*Cont.*)

1886	.91	1.05	1.05	1.09	4.1	1912	1.77	9.1	10.9	4.3	3.6	18.7
1887	.93	1.14	1.12	1.14	4.3	1913	1.80	9.3	11.1	4.5	3.8	19.4
1888	.98	1.20	1.23	1.21	4.6	1914	1.58	9.9	11.5	4.6	3.9	20.0
1889	1.00	1.30	1.38	1.28	5.0	1915	1.61	10.1	11.7	5.3	4.0	21.0
1890	1.07	1.39	1.51	1.34	5.3	1916	1.89	11.9	13.8	6.1	4.2	24.1
1891	1.13	1.43	1.63	1.40	5.6	1917	2.4	13.5	15.8	6.9	4.5	27.2
1892	1.20	1.61	1.76	1.47	6.0	1918	3.2	15.0	18.2	7.3	4.6	30.1
						1919	3.7	18.0	21.7	8.8	4.9	35.4
						1920	4.1	19.5	23.6	10.4	5.3	39.3
						1921	3.7	17.4	21.0	10.9	5.6	37.6
						1922	3.4	17.8	21.2	11.2	5.9	38.3
						1923	3.7	19.0	22.7	13.2	6.3	42.2
						1924	3.7	19.6	23.3	14.5	6.8	44.6
						1925	3.6	21.4	25.0	15.8	7.2	48.1
						1926	3.7	21.9	25.6	17.0	7.6	50
						1927	3.6	21.9	25.5	18.2	8.1	52
						1928	3.6	22.3	25.9	19.5	8.7	54
						1929	3.6	22.5	26.1	19.6	9.0	55
						1930	3.4	21.7	25.1	19.5	9.3	54
						1931	3.8	19.4	23.2	18.4	10.2	52
						1932	4.6	16.0	20.6	14.4	10.7	45.7
						1933	4.8	13.6	18.4	10.7	10.8	39.8
						1934	4.7	16.8	21.5	11.8	10.9	44.1
						1935	4.8	20.2	25.0	12.8	11.0	48.8
						1936	5.1	23.7	28.8	13.7	11.2	54
						1937	5.6	24.9	30.5	14.4	11.4	56

TABLE 17: Cash Assets of the Nonbank Public, 1866–1947 (*Cont.*)

Year	F	G	H	I	J	K
1938	5.6	24.6	30.1	14.9	11.5	56
1939	6.0	27.6	33.6	15.0	11.7	60
1940	6.8	32.0	38.8	15.5	11.9	66
1941	8.3	37.1	45.5	15.9	11.9	73
1942	11.4	42.8	54	16.8	11.8	83
1943	16.1	56	72	17.8	12.8	102
1944	20.9	64	85	21.5	14.6	121
1945	25	73	98	27	17.1	143
1946	26	80	106	32	19.3	158
1947	26	83	109	35	21	164

Sources:

A. June 30 figure for currency outstanding other than bank notes, plus call-date average for national bank notes, less call-date average of national bank vault cash.

B. Average of call-date figures, "adjusted" for checks in collection.

C. 1873–1882, data from tax on bank deposits (starred years have best evidence). 1882–1892, extrapolation with aid of state figures (from *Annual Report* of Comptroller of the Currency) for states available throughout, namely: Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, California, New Jersey, Maryland, Kentucky, Wisconsin, Iowa, Minnesota, and Missouri.

D. From figures in *Annual Report* of Comptroller, with a few guesses for missing entries.

E. Sum of A through D.

F, G, I, J, 1892–1917, annual averages approximated from June 30 figures in Federal Reserve Board, *Banking and Monetary Statistics* (Washington, 1943), p. 34.

F, G, I, J, 1918–1941, Federal Reserve data adjusted to give more accurate averages for years by use of coin and paper-money figures of A. J. Schwartz and E. Oliver, *Currency Held by the Public, the Banks and the Treasury* (New York: National Bureau of Economic Research, 1947), and call-date figures for member banks.

F, G, I, J, 1942–1947, from *Federal Reserve Bulletin:* annual averages of monthly figures.

H. Sum of F and G.

K. Sum of H, I, and J.

Price Series (*Continued*)

Diagrams Where Used

P-3. Wholesale Prices, Textile Products, B.L.S., 1926 = 100, Annually, 1890–1947. Same source as P-2. 15

P-4. Wholesale Prices, Farm Products, B.L.S., 1926 = 100, Annually, 1890–1947. Same source as P-2. . . . . 15, 16

P-4A. Wholesale Prices, Farm Products, 1910–1914 = 100, Annually, 1860–1895. Estimates of G. F. Warren and F. A. Pearson, in *Prices* (New York: Wiley, 1933), p. 26. By permission of the publisher. 16

P-5. Construction Costs, U. S. Department of Commerce, 1939 = 100, Annually, 1915–1946. From U. S. Department of Commerce, *Dollar Construction Estimates, 1915–1946* (Washington, May 1947), p. 25. 15

P-6. Commercial Paper Rates in New York City, Per Cent Per Annum, Monthly Averages of Rates Reduced to Quarterly Averages, 1870–1933. From F. R. Macaulay, *op. cit.*, pp. A145 ff. By permission of the National Bureau. 22, 23, 24, 25

Cash Series

M-1. Total Cash (Means of Payment Plus Time Deposits in Commercial and Mutual Banks and Postal Savings), in Billions of Current Dollars, Yearly Averages, 1875–1947. From Table 17. . . . . 2, 3, 21

M-1A. Total Cash, End of Half-Year, in Billions of Dollars, 1929–1947, Federal Reserve Board. From *Federal Reserve Bulletin.* 25

M-2. Means of Payment (Coin and Paper Money Outside Banks Plus Demand Deposits Adjusted), in Billions of Current Dollars, Yearly Averages, 1892–1947. From Table 17. . . . . 2, 3

M-3. Monetary Gold Stock of U.S.A., in Billions of Current Dollars, 1880–1947. From *Statistical Abstract of the United States,* 1930, pp. 246–247, and *Federal Reserve Bulletin.* 2

M-4 Individual Deposits in National Banks, Adjusted, in Billions of Current Dollars, Call Dates, 1870–1914. Reprinted by permission of the publishers from A. A. Young, *Analysis of Bank Statistics for the United States* (Cambridge: Harvard University Press, 1928), pp. 8–13. . . . 22, 23, 24

M-5. Deposits Other Than Interbank in All Member Banks,

Cash Series (*Continued*)

Diagrams Where Used

Adjusted, in Billions of Current Dollars, Call Dates, 1915–1939. From Federal Reserve Board, *Banking and Monetary Statistics* (Washington, 1943), pp. 73–75. . . . . 24, 25

Wealth Series

W-1. "Reproducible Wealth Outside Households." From Simon Kuznets, *National Product since 1869* (New York: National Bureau of Economic Research, 1946), p. 228. See footnote, page 212 above. By permission of the National Bureau. 12

Velocity Series

V-1. Ratio of Undeflated Bank Clearings Outside New York to Total Cash (M-1), Annually, 1875–1918. Bank clearings from F. R. Macaulay, *Movements of Interest Rates, Bond Yields, etc.* (New York: National Bureau of Economic Research, 1938), pp. A255 ff. By permission of the National Bureau. 3

V-2. Ratio of Undeflated Bank Clearings Outside New York to Total Means of Payment (M-2), Annually, 1875–1918. Clearings series same as in V-1. 3

V-3. Ratio of Gross National Product in Current Dollars to Total Cash (M-1), Annually, 1909–1947. Gross National Product from *Basic Facts on Employment and Production,* p. 12. For 1945–1947, from *Survey of Current Business.* 3

V-4. Ratio of Gross National Product in Current Dollars to Means of Payment (M-2), Annually, 1909–1947. GNP series same as in V-3. 3

Employment Series

E-1. Manufacturing Employment (index, 1899 = 100), Annually, 1889–1914. From E. R. Frickey, *Economic Fluctuations in the United States* (Cambridge: Harvard University Press, 1942), diagram opposite page 180. By permission of the author. 13

E-2. Number of Full-Time Equivalent Employees and Entrepreneurs Excluding Farming and Government (in Millions), Annually, 1914–1947. 1919–1938 data from Simon

Employment Series (*Continued*)

Diagrams Where Used

Kuznets, *National Income and its Composition* (New York: National Bureau of Economic Research, 1941), pp. 314–317. Extended back to 1914 and ahead to 1943 by data in Simon Kuznets, *National Product in Wartime* (New York: National Bureau of Economic Research, 1945), pp. 145–146. Estimates for 1946–1947 with aid of census data. By permission of the National Bureau. . 13

E-3. Gainfully Occupied Workers, Excluding Farming and Government (in Millions), Decennially, 1870–1940. Figures for 1870–1930 from U. S. Bureau of the Census, *Comparative Occupation Statistics for the United States* (Washington, 1945), p. 100. Figures for 1940 (only roughly comparable) from *Statistical Abstract of the United States,* 1946, p. 178. 13

E-4. Population of Continental United States (in Millions), Annually, 1860–1945. Census estimates from *Statistical Abstract of the United States,* 1946, p. 8. 13

E-5. Labor Force in Construction (in Millions), Annually, 1890–1925. From P. H. Douglas, *Real Wages in the United States* (Boston: Houghton Mifflin, 1930), p. 455. By permission of the author. 17

E-6. Workers Employed in Construction (in Millions), Annually, 1897–1925. Same source as E-5. By permission of the author. 17

Output Series

O-1. Industrial and Commercial Production, 1899 = 100, Annually, 1860–1914. From E. R. Frickey, *Economic Fluctuations in the United States* (Cambridge: Harvard University Press, 1942), diagram opposite p. 180. By permission of the author. 13, 14, 15, 16, 17, 18, 21

O-1A. Peak figures from Series O-1. 12

O-2. National Income (Excluding Farming and Government), 1929 Dollars, Annually, 1909–1947. From Table 18. . . . . 13, 14, 15, 16, 17, 18, 21

O-2A. Peak figures from Series O-2. 12

O-3. Industrial Production (Manufacture and Mining), 1899 = 100, Annually, 1863–1930. "Day-Persons Index"

TABLE 18

National Income, Excluding Farming and Government, 1909–1947

Year	Current-Dollar Figures (in billions)			(1929 = 100)	Industrial National Income, in Billions of 1929 Dollars
	National Income	Government and Farm Income	Industrial National Income		
	A	B	C	D	E
1909	28.7	5.6	23.1	65	36
1910	30.4	5.8	24.6	66	37
1911	30.5	5.3	25.2	63	40
1912	32.9	5.9	27.0	66	41
1913	34.8	5.8	29.0	66	44
1914	33.9	5.8	28.1	65	43
1915	37.0	6.2	30.8	66	47
1916	44.9	7.3	37.6	70*	54*
1917	55.8	10.0	45.8	80*	57*
1918	61.5	14.9	46.6	92*	51*
1919	70.4	15.4	55.0	109*	51*
1920	71.1	13.1	58.0	125*	46*
1921	52.4	10.1	42.3	108	39
1922	60.3	10.4	49.9	101	49
1923	70.4	11.3	59.1	102	58
1924	70.0	11.8	58.2	102	57
1925	74.9	12.9	62.0	103	60
1926	77.8	12.8	65.0	104	63
1927	77.0	12.8	64.2	102	63
1928	79.9	12.9	67.0	101	66
1929	84.5	13.5	71.0	100	71
1929	87.4	13.1	74.2	100	74
1930	75.0	11.4	63.6	97	66
1931	58.9	10.1	48.8	88	56
1932	41.7	8.3	33.4	77	43
1933	39.6	8.9	30.7	75	41
1934	48.6	9.9	38.8	79	49
1935	56.8	13.0	43.8	80	54
1936	66.9	15.7	51.3	81	63
1937	73.6	15.0	58.6	84	70
1938	67.4	14.6	52.8	81	65
1939	72.5	14.7	57.9	80	72
1940	81.3	15.4	66.0	82	80

Year	A	B	C	D	E
1941	103.8	19.4	84.5	91	93
1942	136.5	29.3	107.2	#	#
1943	168.3	41.8	126.5	#	#
1944	182.4	49.1	133.3	#	#
1945	181.7	52.6	129.1	#	#
1946	179.3	40.7	138.6	114*	123*
1947	202.5	38.0	164.5	130*	127*

* Deflator unreliable because of rapid price change.

No acceptable deflator available.

Sources:

A. 1909–1929, *Basic Facts on Employment and Production,* p. 12, plus an addition for corporate income tax accruals. 1929–1947, *Survey of Current Business* (National Income Supplement, July 1947, and November 1947).

B. 1909–1929, partly from *Basic Facts,* partly from Simon Kuznets. 1929–1947, same as A.

C. A minus B.

D. 1919–1941, Ratios of current-dollar and 1929-dollar net national product in Simon Kuznets, *National Product Since 1869* (New York: National Bureau of Economic Research, 1946), pp. 55–56. The "peacetime concept" is used. Extrapolation back to 1909 with aid of Simon Kuznets, *National Product in Peace and War,* and of B.L.S. wholesale-price data. 1946–1947, with the aid of the cost-of-living index. Kuznets' figures used by permission of the National Bureau.

E. C divided by D.

Output Series (*Continued*)

	Diagrams Where Used
reprinted by permission from *Forecasting Business Cycles* by W. M. Persons, published by John Wiley & Sons, Inc., 1931, pp. 169–177.	14
O-4. Bank Clearings Outside New York, Deflated (in Millions of 1913 Dollars Per Month), Annual Averages, 1875–1918. From F. R. Macaulay, *Movements of Interest Rates, Bond Yields, etc.* (New York: National Bureau of Economic Research, 1938), pp. A255 ff. By permission of the National Bureau.	14
O-4A. The same—Quarterly Averages of Seasonally Adjusted Monthly Figures.	23, 24
O-5. Industrial Production, 1885 = 100: Annual Averages of Quarterly Index, 1870–1907. From L. P. Ayres, *Turning Points in Business Cycles* (New York: Macmillan, 1939), diagram on p. 123. Copyright, 1939, by The Macmillan Company and used with their permission.	14
O-5A. The same. Quarterly figures.	22
O-6. Manufacturing Production, 1935–1939 = 100, Annually, 1919–1947. Federal Reserve Board index, from *Federal Reserve Bulletin.*	14
O-6A. The same (quarterly averages of seasonally adjusted monthly figures), 1919–1947.	25
O-6B. The same (quarterly averages of durable-goods component), 1919–1947.	20
O-6C. The same (quarterly averages of non-durable component), 1919–1947.	20
O-7. Manufacturing Production, 1899 = 100, Annually, 1899–1930. W. Thomas backward extension of Federal Reserve index, from *Federal Reserve Bulletin,* January 1931, p. 46.	14
O-7A. The same, quarterly averages of monthly figures, interpolated by L. P. Ayres, from *Turning Points in Business Cycles* (New York: Macmillan, 1939), p. 203. Copyright, 1939, by The Macmillan Company and used with their permission. Durable and non-durable components reduced to points of total index and added together. Shows some divergence from O-7.	24
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O-7C. Non-durable goods component of O-7A.	19
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Value of Commodity Output Since 1869 (New York: National Bureau of Economic Research, 1947), pp. 70–77. By permission of the National Bureau.	14
O-9. Manufacturing Output, 1899 = 100, Annually, 1899–1939, from S. Fabricant, *Employment in Manufacturing, 1899–1939* (New York: National Bureau of Economic Research, 1942), p. 331. By permission of the National Bureau.	14
O-10. Farm Crops, 1899 = 100, Annually, 1866–1914. From E. R. Frickey, *Economic Fluctuations in the United States* (Cambridge: Harvard University Press, 1942), diagram opposite p. 180. By permission of Professor Frickey. . .	16
O-11. Farm Crops, 1935–1939 = 100, Annually, 1909–1946. Bureau of Agricultural Economics series from *Agricultural Statistics,* 1946, pp. 560–561.	16
O-12. Farm Crops and Livestock Combined, 1935–1939 = 100, Annually, 1909–1946. Same source as O-11. . . .	16
O-13. Construction Contracts (1913 Dollars), Annually, 1875–1929, from W. H. Newman, *Building Industry and Business Cycles* (Chicago: University of Chicago Press, 1935), p. 63. By permission of the University of Chicago Press.	17
O-14. Total Construction Activity, 1939 Dollars, 1915–1947. From U. S. Department of Commerce, *Dollar Construction Estimates,* 1915–1946 (Washington, May 1947), p 25.	17
O-15. Private (Non-Government) Component of O-14. *Ibid.,* p. 26.	17
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O-17A. The same, quarterly averages of seasonally adjusted monthly figures.	20
O-18. Coal Production, Tons, Annually, 1870–1947. Older figures from A. F. Burns, *Production Trends in the United States Since 1870* (New York: National Bureau of Economic Research, 1934), pp. 288–289, with permission of National Bureau of Economic Research. More recent figures from *Statistical Abstract of the United States,* 1946, p. 749.	20

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