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WEALTH AND INCOME

WEALTH AND INCOME

An Analysis of the Economic and Financial Systems of Australia and Great Britain

BY

BRIAN TEW

B.Sc. (Econ.) (London), Ph.D. (Cantab.)
Professor of Economics, University of Nottingham
Formerly Professor of Economics, University of Adelaide



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PREFACE TO THE THIRD EDITION

The main changes I have introduced since the first edition are:

1. There now follows after the prefaces a short note on the use of certain technical terms.

2. Chapters 10 and 11 have been largely rewritten, to bring them into line with my article on 'The Structure of Britain's Monetary System' published in the November 1957 issue of the Bulletin of the National Bank of Belgium.

3. In Chapter 14, the story of how expenditure generates income is now based on a brief description of the basic principles of business accounting. This should make the whole chapter much more readily comprehensible.

4. In Chapter 15, the argument is made clearer by introducing a 'price-output' schedule' (Figure 7).

5. Chapter 19, on the theory of investment, has been largely rewritten.

6. In Chapter 21, on inflation, I have remedied an omission by dealing with inflation in cases where prices are cost-determined, as well as where they are demand-determined.

7. I have omitted all discussion of international monetary arrangements. Anyone wishing to pursue the application of the theories in Part Three of *Wealth and Income* to present-day problems in the international field will find my views in my *International Monetary Co-operation.*

I have in addition made innumerable changes in details, mainly designed to simplify the exposition.

Thus it will be realized that *Wealth and Income* has now been substantially rewritten. In its present form its scope is broadly the same as Mr A. C. L. Day's admirable *Outline of Monetary Economics* (Clarendon Press, 1957), but the exposition has been kept at a more elementary level and has been more specifically related to British and Australian conditions.

I acknowledge with gratitude the kindness of the Bank of Belgium in permitting me to quote extensively from my article, published in the Bank's Bulletin, to which I have alluded above.

BRIAN TEW

Yale University
December 1958

PREFACE TO THE FIRST EDITION

WEALTH AND INCOME is an outline of the behaviour of a country's economic system as a whole, as distinct from the behaviour of particular commodity markets or of individual producing firms. In particular, the book attempts to describe the workings of the financial institutions of Australia and Britain and to provide, in as simple and realistic a form as possible, the essential basis of economic theory required by an intelligent student of current affairs. Special attention is given to certain major problems of the contemporary world, such as unemployment, inflation, the dollar shortage, and so on. No prior knowledge of economics is expected of the reader, but anyone completely ignorant of business affairs is advised to read Philip Tovey's *Balance Sheets*[1] or any elementary introduction to the same subject.

The book is divided into three parts. Part One is mainly concerned with those remarkable pieces of paper, bank notes, and with paper titles such as bills, bonds and shares, most of which are in the last resort promises of bank notes in the future. Surely nothing would seem more mysterious to a visitor from Mars than these bits of paper that we value so highly without in most cases really understanding why. Yet paper money and titles are among man's most felicitous inventions. They facilitate the exchange of commodities and the organization of production. They allow people to be remunerated by means of tokens which can be exchanged for commodities of whatever kind the recipient pleases. They enable an income-receiver either to save or alternatively to spend beyond his income. And, greatest marvel of all, being merely small pieces of paper they cost virtually nothing to produce. Part One deals with paper wealth in its numerous varieties, how it comes into existence, what it is used for, and the terms on which one variety is exchanged for another.

Parts Two and Three deal with the terms on which paper wealth is exchanged for goods and services, and the scale on which such exchanges occur. Thus they have regard to such matters as the general price-level of goods and services, the amount of expenditure on such goods and services in any month or year, and the amount of income and employment generated by this expenditure. They also show how expenditure is financed, especially in circumstances

[1] London, Pitman, 1946.

which involve the creation of new paper wealth. In Part Three these questions are viewed from a particular aspect, namely in respect of the financial relations between the home country and the rest of the world. Hence, among other things, this last part deals with the machinery for international payments, the terms of exchange both between different countries' currencies and between different countries' goods, and the volume of imports and exports.

I believe this book to be to a considerable extent unorthodox in its arrangement and exposition, and to some extent original in matters of detail, but the fundamental relationships which underlie my argument are taken from Keynes' *General Theory of Employment, Interest and Money* and from the works of other economists of the Keynesian school, such as Harrod, Kalecki and Mrs Robinson. I am also greatly indebted to that exceptionally erudite newspaper, *The Economist*, and to Professor Hicks, whose 'Suggestion for Simplifying the Theory of Money' *(Economica, 1935)* was the origin of the 'balance sheet' technique of argument which I have adopted in Part One. To a lesser extent I am indebted to all the authors mentioned in the bibliography, for I own to have profited greatly by reading all the works I have listed. Lastly I acknowledge with sincere thanks the assistance of Mr F. G. Opie, who kindly drew the diagrams, and of Dr H. Arndt, Mr Roy Cameron and my wife, all of whom have read my manuscripts and made valuable criticisms.

BRIAN TEW

Adelaide

A NOTE ON THE USE OF TERMS

A great deal of confusion arises in economics on account of the lack of a generally accepted vocabulary. The following notes may be helpful to the reader.

The term *obligations* which I introduce on page 3 as a generic label for paper money, fixed-interest securities, loans, and equity, has in common usage a rather more restricted meaning, in that most people would not take it to include equity. Unfortunately however it is difficult to find a suitable alternative. One economist has used the term 'IOUs', but this too would normally be taken to exclude equity. Another has used the word 'securities', but this normally means only *marketable* obligations, and is indeed used in this sense throughout this book. Other possible labels are 'titles' or 'paper titles' or simply 'paper'. These I think would be suitable, if only we could all agree to use them, but the use of them now in the unfamiliar sense of 'paper money, fixed-interest securities, loans, and equity' is liable to cause more confusion than the use of my word 'obligations'.

The term *enterprises*, which I introduce on page 4, means the same as 'businesses'. Many economists use the word 'firms' as a synonym, but in common usage this may be taken to mean only partnerships and sole proprietorships, whereas what we need is a label that clearly includes companies.

My label *monetary sector* is used in Chapter 10 and subsequently to denote the central government and the central, commercial and savings banks, together with (in the case of Britain) the discount houses, all taken as a single group.

My *material* investment, introduced on page 109, in contra-distinction to *financial* investment in securities or other obligations, is a synonym for what many economists call *real* investment. However the adjective 'real' has another meaning in economics, namely 'adjusted for price changes'. Since 'real' is used in this sense later on, beginning on page 150, I had to have another adjective to mean 'non-financial', and chose 'material' as being very nearly self-explanatory.

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PART ONE

ASSETS AND LIABILITIES

CHAPTER I

THE WEALTH OF NATIONS

WHAT IS *wealth*? What are the different types of wealth and how do they differ? Let us begin by considering these questions with respect to the wealth of a private citizen. What is Mr John Smith's wealth? Mr Smith's wealth consists of his possessions, it is what he owns. What types of possessions are owned by Mr Smith? We can classify them in numerous ways, depending on the purpose we have in mind, but as economists the primary distinction which we must make is between Mr Smith's *material* wealth and his *paper* wealth. In the former category are his house, his car and his refrigerator—all useful, durable goods, for the most part brought into existence at some time in the past by the efforts and ingenuity of mankind. In the latter category are possessions with little or no material value and which, indeed, exist materially only as paper and ink. Mr Smith's paper wealth may take a large number of different forms: bank notes, a deposit at a bank, Savings Certificates, innumerable varieties of stocks and shares, and so on. All these types of paper wealth have, however, one feature in common: though they are wealth to Mr Smith they are *negative* wealth to somebody else. Negative wealth may at first sight seem rather a strange concept, but a moment's thought will show that it is the distinction between positive and negative wealth which we have in mind when we use the familiar terms, assets and liabilities. Assets are positive wealth, liabilities are negative wealth, and Mr Smith's paper assets (unlike his material assets) have the common characteristic that they are all liabilities to somebody else. Thus his bank notes are the liability of the bank which issued them, his bank deposit is the liability of the bank at which he keeps his account, his Savings Certificates are the liability of the government and his shares in the Smith Manufacturing Company are the liability of that company. All pieces of paper and all book entries which have the characteristic of being assets to one party (the *holder)* and liabilities to another (the *issuer* or *ower)* will henceforth in this book be referred to under the generic title of *obligations*.[1] A list of the more important types of obligations is given at the end of this chapter, together with an

[1] See the 'Note on the Use of Terms', p. ix.

indication of who are the chief holders and who are the chief issuers or owers of each type of obligation.

To return to Mr Smith. His wealth, we have concluded, consists partly of material assets, partly of obligations held as assets. But our conclusion tacitly assumes that Mr Smith has not incurred any obligations as liabilities, and this assumption may not be true. He may, for instance, have a bank account which is not a deposit, but an overdraft, or he may have an outstanding mortgage on his house. In either of these cases, he has an obligation which is a *liability* to him and an *asset* to somebody else. Thus Mr Smith's *net* wealth may have to be shown as the balance of his assets in excess of his liabilities.

Mr John Smith's Wealth

LIABILITIES	ASSETS
Obligations incurred	1. *Material Assets*
Bank Overdraft	House
Mortgage on House	Car
	Refrigerator
	2. *Obligations held*
	Bank Notes
	Savings Certificates
	Stocks and Shares

Let us now pass from the wealth of a private citizen, typified by Mr John Smith, to the wealth of a business enterprise. A business enterprise may take the legal form of a sole proprietorship, a partnership, a joint-stock company, or a government-owned corporation operating on a commercial basis; but whatever its legal form its economic function is to produce goods or perform services *for sale*. Enterprises[2] may engage in manufacturing, mining or farming, transport, trade or distribution, banking, insurance or finance; they may (as, for example, in the case of estate companies) hire out factory or dwelling accommodation or (as in the case of dentists or lawyers) they may offer their professional services for a fee. In all cases, however, they produce some commodity or perform some service by the sale of which they hope to pay their expenses and, with luck, to make a profit as well. A secondary but none the less very interesting feature of all, or nearly all, enter-

[2] See the 'Note on the Use of Terms', p. ix.

prises is that they keep accounts and in particular draw up at least once a year a statement of their wealth as on a specified day. This statement is known as a balance sheet. Let us consider the balance sheet of a typical enterprise, say the Smith Manufacturing Company, arranging the items so as to conform as closely as possible to the lay-out we adopted for our statement of Mr John Smith's wealth.

Balance Sheet of the Smith Manufacturing Company

LIABILITIES	ASSETS
Obligations incurred Owed to Trade Creditors Bank Loan or Overdraft Fixed-interest Stocks issued Preference Shares issued Equity (defined below)	1. *Material Assets* Plant and Building Stocks of Goods and Work in Progress 2. *Obligations held* Bank Notes Bank Deposits Owed by Trade Debtors Stocks and Shares 3. *Intangible Assets* Goodwill Patent Rights

The balance sheet of the Smith Manufacturing Company has several features which are not common to our statement of Mr John Smith's wealth. First, the Smith Manufacturing Company may hold certain kinds of assets, notably goodwill and patent rights, which are neither material wealth nor obligations, and which must therefore be put in a class by themselves as 'intangible assets'. Second, a balance sheet, as its name implies, *balances;* the total value of the liabilities on any balance sheet is always shown as exactly equal to the total value of the assets, so by implication the net wealth of any enterprise is invariably *nil.* Why should an enterprise's liabilities always equal its assets, and by what accounting device is the equality achieved? The answer in principle is simple: the liabilities of an enterprise include whatever is due to the proprietors, and the proprietors are entitled to the balance of the assets, after meeting all debts due to outsiders. Thus a balance sheet balances because of the inclusion of items which collectively represent what (according to the accounts kept by the enterprise) is owed by the enterprise

to its proprietors. The balancing item is sometimes conveniently labelled 'capital' or, in the case of a company, 'shareholders' funds', but more frequently it appears under a number of aliases, such as 'nominal share capital', 'reserves', 'profit and loss', and so on. For our purposes we can include the balancing item under a single heading, *equity*, except in the case of companies which have issued preference shares, when the balancing item should for convenience be sub-divided into what is due to preference shareholders (usually the nominal value of preference shares issued) and what is due to the ordinary shareholders, the latter liability being the equity of the enterprise.[3]

So far we have considered the wealth of a typical private citizen and a typical business enterprise. There is, however, yet another class of wealth-owners to be considered, namely the public authorities, whether federal, state or local. Let us consider them all together and label them *the government*. (We must, however, exclude from 'the government' such government-owned corporations as can be classed as business enterprises, since we have dealt with them already.) We can now adapt our statement of Mr Smith's net wealth so as to make it refer to the government's net wealth. The result of this operation is set out below. It should be borne in mind when considering this account that the government is like Mr John Smith (but is unlike the Smith Manufacturing Company) in that its assets and liabilities are *not* necessarily equal. The government's net wealth may be either positive or negative.

The Government's Wealth

LIABILITIES	ASSETS
Obligations incurred	1. *Material Assets*
Treasury Bills issued	Gold (if any)
Savings Certificates issued	Arms and Munitions
Fixed-interest Stocks issued	Public Buildings
	Roads
	Land
	2. *Obligations held*
	Bank Deposits
	Equity of Government-owned Enterprises

[3] The distinction between preference and ordinary shares is described in chs. 4 and 5.

TABLE I

Classification of Obligations

Type of Obligation	*Whose Liabilities*	*Whose Assets*
Money		
Bank Notes	Central Bank	Private Citizens Enterprises Commercial Banks
Deposits at the Central Bank	Central Bank	Commercial Banks Central Government
Demand Deposits at the Commercial Banks	Commercial Banks	Private Citizens Enterprises State and Local Governments
Fixed-interest Securities and Loans		
Bills	Government Traders Banks	Commercial Banks Discount Houses Central Bank
Time Deposits at the Commercial Banks	Commercial Banks	Private Citizens Enterprises
Deposits at Savings Banks	Savings Banks	Private Citizens
Advances by Commercial Banks	Enterprises	Commercial Banks
Trade Credit	Enterprises Private Citizens	Enterprises
Savings Certificates	Government	Private Citizens
Government Bonds, Stocks or Loans	Government	Private Citizens Enterprises Savings Banks Commercial Banks Central Bank
Long-term Loans, Debenture Stocks and Industrial Bonds	Enterprises House Purchasers	Private Citizens Financial Enterprises
Preference Shares	Enterprises	Private Citizens Enterprises
Equity		
Proprietor's Capital in a firm	Enterprises	Private Citizens
Ordinary Shares in a company	Enterprises	Private Citizens Enterprises
Actuarial Obligations		
Insurance Policies	Insurance Companies	Private Citizens
Pension Rights	Pension Funds	Private Citizens

We are now able to draw together the threads of our argument by giving consideration to the net wealth of a country as a whole. In any country virtually all assets are held, and all liabilities incurred, by private citizens, by enterprises and by the government. Thus the net wealth of a country must consist of the net wealth of its citizens plus the net wealth of the government—the net wealth of enterprises being *nil.*

It is, however, possible to reach the same answer by a different method of calculation. Every obligation involves two parties: A, to whom it is an asset, and B, to whom it is a liability. Hence if A and B are *both* resident in our country the obligation can be ignored when calculating the wealth of our country as a whole, for whatever value it may have as an asset it must also have as a liability. If, therefore, it so happened that each one of the obligations in existence in our country resembled the one just described, that is to say, if both parties to each obligation were home residents, it would necessarily follow that the net wealth of our country would be equal to the value of all assets other than obligations held in our country. When, however, we recognize that one party to an obligation may be a foreigner, we must then include in our country's net wealth a further item, *net overseas assets,* representing the excess of the value of obligations issued abroad and held in our country over the value of those issued at home and held abroad, or *net overseas liabilities* if the item is negative.

CHAPTER 2

THE STRUCTURE OF INDEBTEDNESS

WE HAVE SEEN that obligations are held as assets and incurred as liabilities by private citizens, by enterprises and by the government. By and large, however, obligations are *incurred* mainly by enterprises and the government and *held* mainly by private citizens.

The only private citizens who would like to incur obligations are those who want to spend beyond their income and borrow the difference. But such people usually have difficulty in finding a willing holder of their obligations except in circumstances where they can offer some tangible guarantee against default. Hence obligations incurred by private citizens are for the most part limited to loans raised on the security of durable property, the lender having the legal right to take over the property in case of default. On the other hand, the opposite kind of private citizen, namely the man who wants to live within his means and save the difference, usually prefers in practice to accumulate not material assets (such as ingots of copper or bales of wool) but obligations of one sort or another issued by enterprises or the government. Thus, it is not surprising that private citizens are relatively unimportant as owers of obligations but highly important as holders.

Let us turn to the major issuers and owers of obligations. The *government* incurs obligations (such as Treasury Bills, Savings Certificates and medium- and long-term stocks or bonds) in order to undertake expenditure in excess of its current revenue. These obligations remain in existence, or are replaced by others, unless the government's expenditure falls short of its current revenue. In the case of *enterprises,* we must distinguish between financial enterprises (such as banks, trusts, discount houses and insurance companies) and industrial enterprises (engaged in manufacturing, mining, farming, transportation and distribution). The latter incur obligations mainly to acquire income-earning material assets, whether plant and buildings or stocks of goods. This operation is feasible whenever the additional profits expected from owning the new material assets enable the enterprise to incur obligations (e.g. to borrow or to issue shares) on terms which are satisfactory to potential holders. The obligations created in this way remain in existence, or are replaced by others, unless the enterprise (1) is

able to redeem them out of undistributed profits, or (2) winds up all or part of its business, or (3) goes bankrupt or otherwise defaults.

Industrial enterprises to a limited extent also incur obligations in order to acquire not material assets but other obligations. Virtually all enterprises, for instance, keep a stock of bank notes and hold a deposit at a bank, for all enterprises must have the means for making payments. Often an industrial enterprise extends credit to its customers, thus creating obligations which are liabilities to the customers but assets to the enterprise. Quite frequently one company hold a majority of the ordinary shares in another company, thereby enjoying the dividends, and, more important, exercising the effective control, of the so-called 'subsidiary' company. Many enterprises hold obligations of one sort or another (but particularly bank deposits and government securities) as a general reserve to be drawn upon whenever it is necessary to make disbursements in excess of current earnings. For these and other reasons one always finds that a certain proportion of the assets of an industrial enterprise consists of obligations of one sort or another.

The distinguishing feature of a purely financial enterprise is that virtually all its assets are obligations, its material assets usually being limited to its office buildings and furniture. However, with several important exceptions, a financial enterprise builds up its business in much the same way as an industrial enterprise: it incurs obligations as liabilities in order to acquire assets, though in this case the assets are mainly paper ones instead of being mainly industrial property. For example, the trust or 'holding company' issues shares in order to finance the purchase of shares issued by other companies, and the savings bank incurs obligations in the form of deposits accepted from private citizens in order to acquire other obligations, particularly government bonds. The discount house, a financial enterprise peculiar to London, makes its profits by incurring obligations, in the form of short-term loans from the banks and elsewhere, in order to be able to buy bills and government bonds.[1] Finally, the insurance company incurs a rather special kind of obligation in the form of policies sold to the public, the premiums from which (after paying claims) are used (for the most part) to buy stocks and shares issued by the government and by enterprises. In all these cases the enterprise concerned incurs obligations in order to acquire other obligations.

[1] Though usually only bonds which are due for repayment within the next five years.

There are, however, certain financial enterprises of which it is misleading to say that they incur obligations in order to acquire other obligations; rather we must say that they acquire obligations and thereby incur other obligations. The enterprises in question are those banks, namely central banks and commercial banks, whose liabilities include bank notes and demand deposits, both of which are in common use as means of payment, that is to say, *as money*. The central and commercial banking facilities usually take the form of one central bank, such as the Commonwealth Bank in Australia or the Bank of England in Britain, and a number of commercial banks (called Trading Banks in Australia and Joint Stock Banks in Britain) operating under the supervision of the central bank. If, for convenience, we call any country's central and commercial banks that country's *banking system*, it can be shown[2] that a banking system has the ability at any time to acquire additional assets (such as advances, securities, gold, or foreign currencies) *merely by creating new money*, and that this new money then appears as an additional liability of the banking system, in the form either of bank notes or bank deposits.

Let us now summarize this brief outline of the structure of indebtedness. By and large, obligations are held as assets mainly by private citizens and incurred as liabilities mainly by the government and by enterprises. This general rule is, however, subject to many exceptions, of which the most important arises from the existence of financial enterprises, which have virtually nothing but obligations on *both* sides of their balance sheets. Most financial enterprises operate as straightforward intermediaries, incurring obligations as liabilities in order to hold others as assets; examples are trusts, savings banks, discount houses and insurance companies. However, two kinds of financial enterprise, central and commercial banks, are rather more mysterious and are able, by a process which we have not yet attempted to investigate, to put (as it were) the cart before the horse and increase their liabilities *as the result* of acquiring new assets.

[2] See chs. 8, 9 and 10.

CHAPTER 3

MONEY

PERHAPS the most striking feature of the genus *obligations* is the great variety of species and sub-species. Obligations can differ one from another in so many respects that any classification is in a sense arbitrary, for the classification which would be appropriate for one purpose may be inappropriate for another. The classification adopted in Table 1, by which obligations are segregated into four main species, money, fixed-interest obligations, equity and actuarial obligations, should therefore be regarded as only one way of marshalling the facts. Let us consider the first three of the four species in turn, beginning with money. (Any detailed treatment of the last of the four species would take us beyond the scope of this book.)

Money is usually but not invariably defined as any asset which is in general use as a *means of payment* or, as some writers put it, as a 'medium of exchange'. This is the definition which is best suited to our purposes. In present-day Australia and Britain, and indeed in most advanced countries, the only assets which qualify as money (apart from the coins used as small change) are certain types of obligations, namely bank notes issued by the central bank and demand deposits (otherwise called current accounts) at both the central and the commercial banks. (Such deposits can of course be readily used for making payments simply by drawing cheques; this has the effect of transferring an appropriate amount of the deposit to the people in whose favour the cheques are drawn.) Since obligations of these types are in all cases the liabilities of banks, we can label them 'bank money', distinguishing between central bank money (bank notes issued by the central bank and demand deposits at the central bank) and commercial bank money (demand deposits at the commercial banks). These types of bank money are mutually interchangeable:

1. The central bank will always on demand change its notes into deposits or deposits into notes.

2. The commercial banks are always prepared to increase a customer's deposit by the amount of any bank notes he pays in and on the other hand are always careful, if prudently managed, to keep

enough central bank money (and claims to central bank money) on hand to satisfy customers who may wish to withdraw their demand deposits in the form of bank notes.

What significance is there in the fact that the different types of bank money are mutually interchangeable? Most members of the public, if they thought about it at all, would probably take the view that the use of bank notes as money does not depend on their being convertible into demand deposits, whereas demand deposits are acceptable as money solely because they are convertible into bank notes. In other words, bank notes are popularly regarded as *ultimate* money, demand deposits only as secondary money. When, for instance, an Australian has a demand deposit of £100 at his bank he probably looks upon it as a claim, exercisable on demand, to a hundred £1 notes. It never even occurs to him that deposit-money and note-money could be measured in different units, or that deposit-money need not be convertible on demand into note-money. Yet neither of these possibilities can be ruled out on purely theoretical grounds, though clearly they would be decidedly inconvenient in practice and would be regarded by the man-in-the-street with bewilderment and suspicion.

However, granted that on practical grounds all types of bank money must be mutually interchangeable and expressed in the same units, what basis is there for the belief that note-money is, as it were, more fundamental than deposit-money? Firstly, in most countries note-money has the advantage, denied to deposit-money, of being *legal tender*, that is, of being the type of money recognized by the law as satisfactory for the discharge of all debts contracted in money terms. Secondly, it was in the past the practice of governments to supervise the creation of deposit-money much less thoroughly than the creation of note-money, and while this is no longer true in present-day Australia or Britain, the habits of thought appropriate to the past may have lingered into the present. Thirdly, it was at one time the practice of governments (under the so-called *gold currency standard*) to charge the central bank with the duty of redeeming its bank notes on demand in terms of gold coin, and though this is no longer the case, the attitude of Australians and Englishmen to their respective bank notes still derives from the time when each of these notes was a written promise to pay the holder, on demand, a golden sovereign.

What is the explanation of the persistence of the habit of using bank notes and demand deposits as money, when neither is con-

vertible into gold?[1] The habit persists partly because bank money is so convenient as a means of payment. Bank notes are sufficiently durable, easily transmissable, storable and of obvious denomination. Demand deposits, transferable by cheque, are equally, or even more convenient. But despite these advantages the habit of using intrinsically worthless notes and deposits as money is unlikely to persist *unless people are confident that the purchasing power of bank money over goods and services will be reasonably maintained in the future.*[2] It is therefore the responsibility of the monetary authorities of a country, particularly the central government, to try to keep the purchasing power of bank money at least as stable as the purchasing power of any other assets which could conveniently be used in its place.

The more important precautions which a country's monetary authorities can take to prevent or reduce a fall in the purchasing power of money are discussed later on, and we need not therefore consider them here. But clearly, in so far as the public is satisfied that the monetary authorities will succeed in preventing a collapse in the purchasing power of money, it would be absurd for anyone to attempt to popularize some other asset as an alternative to bank money. The transition would for a time completely unsettle all business relationships and might cause indescribable confusion; hence everybody would say: 'Why upset the present arrangements?' On the other hand, if the public could see that the purchasing power of bank money was diminishing and thought the monetary authorities unable or incompetent to stop the rot, then there almost certainly would be a popular move to substitute some other asset for the discredited bank money. A movement of this kind developed in Germany after the Second World War, when the cigarette to a considerable extent superseded the Mark as a means of payment. Obviously anyone would be reluctant to accept payment in Marks when he thought he would not be able to spend them, or to spend them only on goods whose prices were rapidly rising.

[1] Though all non-resident sterling became convertible in December 1958, bank notes and deposits held by Englishmen and Australians still remained inconvertible.

[2] I have not raised the question of whether Australians accept Australian bank money because they believe it to be convertible into English bank money. For even if Australians are influenced by this consideration (which is most unlikely) we then must ask the second question: 'Why do Australians habitually use a type of bank money which is convertible only into another type of bank money?'

Contrast now the situation in Germany in 1947 with that in Australia. The typical Australian is so confident that the purchasing power of his bank money will be maintained that he is in no great hurry to part with the money he receives. Demand deposits at the Australian commercial banks turn over about once in three weeks,[3] so that on an average the Australian recipient of a cheque retains the money as a demand deposit for three weeks before using it to make a payment to someone else.

This suggests that some Australians, at any rate, are prepared to hold more money than is strictly needed on account of the minimum interval between the receipt of money and its disbursement. In the language of economics, Australians are willing to hold money not only as a means of payment but also as a *store of value*. This is so despite the fact that their money has virtually no material value and is not a legal title to anything else of material value. Nor are Australians unusual in their monetary habits; in Britain, too, and indeed in many other countries, the same situation obtains.

Besides being a means of payment and a store of value, money fulfils two other functions. We have already seen how in each country bank money of all kinds is expressed in a common national monetary unit, which in Australia and Britain happens to be called by the same name, the pound (£). The national monetary unit is, however, put to a far more extensive use than for measuring amounts of money; it is the *unit of account* in general use for measuring the value of all kinds of obligations and of all goods and services. Thus in Australia the market prices of goods and securities and the current rates of wages are all expressed in £A's, all costing is done in units of £A's, and all business accounts are kept in £A's. Moreover the monetary unit is in very widespread use as a standard in which promises of future payments are expressed and money is the medium in which such promises have to be discharged. Thus Australian government bonds not merely have their current prices quoted on the stock exchanges in £A's but the bonds themselves are promises to pay certain sums of money, expressed in £A's, at specified dates in the future. In technical language the £A is used, not only as a unit of account but as a *medium for deferred payments*. It is, however, important to note that these two functions of money do not require that money

[3] The average weekly amount of cheques debited to customers' accounts in Australia in the year 1946-7 was £159 millions. In the same year demand deposits averaged £480 millions.

should be *held as an asset.* A unit of account is simply a standard of measurement, like an inch or a ton, and as such has no physical existence; while the use of money as a medium for *deferred* payments does not require that either the debtor or the creditor need hold money *now.* Thus only in two of its four roles does money have to be held as an asset: as a means of payment and as a store of value.

CHAPTER 4

FIXED-INTEREST OBLIGATIONS

WE NOW PASS from money to the second species of obligations, namely fixed-interest obligations. The common characteristic of these obligations is that they are all promises of specified sums of money at specified dates in the future, and all therefore make use of money as a medium for deferred payment.

Apart, however, from this one very important common characteristic, fixed-interest obligations are more remarkable for their variety than for their uniformity. Moreover the student cannot but be bewildered by the multiplicity and confusion of labels which are commonly applied to different sub-species of this general class of obligation. Let us therefore attempt to marshall the facts into some semblance of order.

We can begin by drawing a distinction, which incidentally applies to equity as well as to fixed-interest obligations, between obligations which are *marketable* and those which are not. A marketable obligation has the distinguishing characteristic that though it is throughout its life the liability of the issuer, Mr A, the original purchaser and holder, Mr B, can at any time sell his rights to some other holder, Mr C, who in turn can sell out to Mr D, and so on. The transferability of a marketable obligation from holder to holder is in practice usually facilitated by embodying the promise of the issuer in a document, which can be passed from hand to hand. Such documents are known under various names, many of which (e.g. bills, bonds, shares) we shall adopt to designate particular types of marketable obligations, and one of which, *securities,* we shall reserve as a comprehensive label for all marketable obligations.

Government Securities

What kinds of obligations come under the heading of fixed-interest securities? With few exceptions, such securities are issued either by the government or by companies, so let us consider government securities first, and then go on to the others. The simplest government security to describe is the *Treasury Bill,* which (at any rate in Britain and Australia) is a piece of paper bearing a written promise by the government to pay £*x* to whoever presents the document to

the central bank three months after the date of issue. In the words of an Australian Treasury Bill,

This Treasury Bill entitles the Bearer to the payment at the office of the Commonwealth Bank of Australia . . . of (a specified number of) Pounds on (a certain date) and such sum is secured on the Consolidated Revenue of the Commonwealth of Australia.

Such bills are sold for what they will fetch, or alternatively offered for sale at what the government thinks is an appropriate price; in either case the issue price will fall short of the maturity price quoted on the face of the bill by the amount of the interest which the government has to pay the purchaser to induce him to part with his money. The interest on a bill is in practice always expressed as a percentage rate of discount per annum on its face or maturity value, but this rate can for practical purposes be identified with the percentage rate of interest obtained by the purchaser on his monetary outlay, for the term of the bill is so short that unless the rate of discount is very high the difference between the two rates must be trifling. Thus, supposing the government can sell enough bills by offering 4 per cent per annum discount, the interest on a three months' bill with face value of £10,000 will be £100 and the issue price £9,900; the corresponding rate of *interest* is therefore 4·04 per cent per annum.

In London, though not in Australia, there is a flourishing market in old bills, and the higgling of the dealers results in there always being a uniform current or market price for bills of a similar description and hence a uniform current rate of discount (or rate of interest) on Treasury Bills which have the same number of months to run before they are repaid or 'mature'. There is, for instance, on any day a uniform current rate of discount on one month Treasury Bills (bills with only one month to run), another and possibly a different rate on two month bills, in addition to the rate on new (three months) bills. Thus the purchaser of a British Treasury Bill could sell or *discount* it at any time he pleased at a price depending partly on the period the bill had still to go before maturing and partly on the then current rate of discount on Treasury Bills of that maturity. If, for example, the current rate of discount on two months Treasury Bills happens to be 3 per cent per annum, a £10,000 Treasury Bill of this maturity would sell for £9,950.

The (marketable) securities other than bills issued by the British

and Australian governments can all be comprehended under the general heading, *government bonds.*

Government bonds masquerade under many aliases—such as Treasury (or Inscribed) *Stock* and Funding (or Conversion or Consolidated or Security) *Loan*—but they all consist essentially of a promise of an annual payment of £*x* as interest for a stated period (usually five years or more) plus a lump sum of £*y* at the end of that period. Frequently the government is allowed a certain limited latitude as to the period of the bond; for example a bond issued in 1945 might be dated 1970-75, in which case the holder would receive £*x* a year until some date (chosen at short notice by the government) in the period 1970-75, at which time he would get as a final payment the agreed sum of £*y*. A special kind of government bond is the *undated* bond, an example of which is the British 2½ per cent Consolidated Loan or (more briefly) 2½ per cent Consols. The holder of an undated bond is simply promised £*x* a year *for ever.*

Government bonds, like almost all securities, are issued in batches or *issues* consisting of a large number of homogeneous securities, each with a comparatively small issue price. Moreover it is often possible for securities to be bought and sold in subdivisions. The fact that any given issue of government bonds can be traded in small amounts greatly facilitates the operation of organized markets, and in practice there is a flourishing trade in government bonds on both the British and the Australian stock exchanges. An important result of this brisk trade and of the competition among dealers is that there is at any time an almost uniform current or 'quoted' price for the securities comprising each issue.

The annual interest on a government bond, £*x* in our example, is invariably expressed as a percentage of the bond's so-called *nominal value.* The nominal value of the bond is, however, merely a convenient fiction, since it is not necessarily equal either to its original value (its issue price), or to its current price as settled from day to day on the stock exchange, or even to its redemption value on maturity (£*y* in this case). Thus ten year 4 per cent bonds might, for example, be issued in 1943 at £101 per £100 nominal: their current market price at mid-day on 1 February 1949 might be £98 and they might mature in 1953 at £102. Here the nominal price (£100) and the nominal rate of interest (4 per cent per annum) merely serve to explain that the holder of an amount of bonds which in February 1949 could be bought in the market for £98 is

entitled to £4 a year interest until the date of maturity. Thus the nominal rate of interest on a bond must be distinguished from its *yield,* i.e. the percentage rate per annum which would be received on the money outlay currently required to buy the bonds. This yield is easiest to calculate in the case of an undated bond, like Consols. The owner of £100 (nominal) of 2½ per cent Consols is promised by the British government £2½ a year for ever: thus if the current price of Consols happened to be £100 the yield would be the same as the nominal rate of interest, but if the current price were £50, the yield would be 5 per cent, or double the nominal rate, while if the price were £200, the yield would be 1¼ per cent, or half the nominal rate. In other words the yield is given by the formula:

$$2\tfrac{1}{2} \text{ times } \frac{100}{\text{current price}} \text{ per cent per annum,}$$

and varies in inverse proportion with the current price.

In the case of a dated bond, its yield also varies inversely with its price, but in *greater,* not equal, proportion. If for example the current price of Consols fell from £100 to £95, this would increase the yield from 2½ per cent to

$$2\tfrac{1}{2} \text{ times } \frac{100}{95} = 2\tfrac{7}{19} \text{ per cent (approx.)}$$

whereas a bond similar in all respects except that it was due to mature in five years' time at £100, would have its yield increased from 2½ per cent to about 3⅔ per cent when its current price fell from £100 to £95. For the yield of the dated bond[1] must take into account not only the annual interest of £2½ a year, but also the 'bonus' which arises when the current price falls short of the redemption value. The purchaser of our dated bond buys for his £95 not only £2½ in each of the next five years but a 'bonus' of £5 (the excess of the redemption value of £100 over the current price of £95) at the end of the five years. This bonus, spread over the five years, amounts to about 1 per cent per annum,[2] bringing the yield up from 2⅔ per cent (the yield on Consols when their current price is £95) to about 3⅔ per cent.

[1] In the case of a dated bond, what is called here its yield may also be called its 'redemption yield'.

[2] The 'spreading' of the £5 over the five years has to be done on a compound-interest basis. The 'bonus' works out at about £1 per cent per annum, because £100 five years hence corresponds approximately to £95 allowed to accumulate for five years at 1 per cent per annum compound interest.

It will be clear from what has already been said that much the most important way in which issues of government securities can differ one from another is in the period they have to go to maturity, or (more simply) in their 'maturities'. British government securities, for instance, range from the Treasury Bill at one end of the scale, with three months or less to run, to Consols at the other. Moreover, if we allow for certain complications which arise owing to the way in which the British government taxes its citizens,[3] British government securities of the same maturity are, with the notable exception of *eligible* securities (described below), more or less equally attractive to all investors, so that the higgling of the buyers and sellers on the stock exchange tends to establish at any time one rate of yield corresponding to each maturity. The investor wishing to buy British government securities is thus mainly concerned to select that combination of maturity and yield which best suits his requirements. Whether, assuming the rates of yield were the same, he would prefer a short to a long maturity depends mainly on whether he is seeking a stable money-income or a stable money-capital. If for instance he wants the former, he would be inclined to choose Consols or some other long-period bonds; these would assure him a constant money-income for the rest of his life. On the other hand they would *not* assure him a stable money-capital; any rise in the yield would be reflected as a nearly proportionate (exactly proportionate in the case of Consols) fall in the current price of his asset, so the monetary value of his wealth would always be at least potentially subject to wide fluctuations. If, however, what he most values is a stable money-capital he should buy securities with a very short maturity, such as Treasury Bills. Since a Treasury Bill automatically turns into money not more than three months ahead the current price cannot fall very much below the face value; hence the holder of Treasury Bills is almost fully protected against fluc-

[3] Unless an investor is assessed as a professional dealer in securities, that part of the yield of a security which represents the excess of the redemption price over the market price is not subject to taxation. Likewise, if the redemption price falls short of the market price the difference is not chargeable against taxation. Hence the bond in our example, with a yield of $3\frac{1}{2}$ per cent, of which some part was due to an excess of the redemption price over the market price, would be more attractive to some investors than a $3\frac{1}{2}$ per cent bond with market price of £100 and due for redemption five years hence. These principles of taxation apply in both Britain and Australia. Moreover in Australia certain government bonds have been issued in the past, the interest on which is subject to taxation at a rate lower than that applicable to other income from securities. Such bonds are naturally preferred to those which are subject to the normal rate of tax.

tuations in the monetary value of his wealth. He is not, however, protected against a fall in money-*income;* he can invest continuously in Treasury Bills only by constantly buying new ones as his old ones mature, and he has no guarantee that the yield on bills will remain stable in the future. The unfortunate investor cannot have it both ways; he can have a stable money-income or a stable money-capital, or (by buying medium-term bonds) select some suitable compromise between the two; but he cannot assure himself both a stable money-income *and* a stable money-capital.[4]

An asset which can in all circumstances be turned quickly into a known and almost unvarying amount of money is a highly liquid asset, or, as we shall call it, simply a *liquid* asset; and other assets which are less able to fulfil these stringent requirements are called 'moderately liquid' or even 'illiquid', depending on how far the asset seems to be from the ideal (realized only in money itself) of perfect liquidity. *All* British government bonds and bills can at any time be turned quickly into money, by being sold on the London stock exchange or in the London bill market. But only the shorter maturities can be turned into a fairly accurately known and nearly unvarying amount of money. In other words, the shorter the maturity, the greater the liquidity. For this reason alone the Treasury Bill would have to be placed high in the scale of liquidity, for its maximum maturity is only three months. There is, however, another reason why British Treasury Bills are even more liquid than their short maturity would indicate—they are what is known as *eligible paper.* This means that the central bank (the Bank of England) is always prepared to buy them at an official published rate of discount, the so-called Bank Rate. Nor is this an empty promise on the Bank's part for, as we shall see in a later chapter, a central bank can always buy securities for money by creating new money; thus the Bank can honour its undertaking in all circumstances, even in circumstances of financial panic. Hence British Treasury Bills and other eligible securities[5] are highly prized because of their exceptionally high liquidity, and on this account always sell for a better price (that is to say, have a lower yield) than non-eligible securities which are otherwise similar in all respects.

Though most of the above description of government securities

[4] This statement does not hold without qualification in the case of Savings Certificates, which have a guaranteed interest if held to maturity, but which can be turned into a known amount of money at any time at short notice.

[5] Eligible securities in Britain include Treasury Bills and Bank bills (see p. 24).

has been made to refer explicitly to British conditions, it can also be applied, with one important reservation, to Australian conditions. The reservation is that Australian Treasury Bills (which are incidentally the only securities 'eligible' at the Commonwealth Bank) are issued exclusively to, and held exclusively by, the banking system and government departments; there is no organized market in these securities. However, as in Britain, government bonds are extensively bought and sold on the stock exchanges; moreover many issues are outstanding, giving the investor quite a wide choice of maturities. Thus almost everything that has been said about British government bonds is strictly relevant to their Australian counterparts.

Corporate Fixed-interest Securities

Having devoted so much space to describing fixed-interest securities issued by governments, we should be able to dismiss more briefly the varieties issued by companies. Corporate fixed-interest securities consist of promissory notes, commercial bills, bonds and preference shares. The first (and in practice least important) of these, promissory notes, are short-term I.O.U.'s, comparable in every way, except the financial standing of the issuer, with Treasury Bills. Commercial bills, despite the involved procedure by which they are brought into existence,[6] are again essentially short-term I.O.U.'s, issued in this case as the liability of the acceptor, and usually based on specified consignments of goods. The fact that a commercial bill is based on a specified consignment of goods makes such a bill a safer asset than most promissory notes, for the proceeds of sale of goods in question are normally available to redeem the bill on maturity. In cases where the goods are being traded from one country to another, it is common for the purchaser, instead of accepting the bill himself, to persuade a bank or acceptance house[7] (for a fee) to accept

[6] Mr Creditor sells goods to Mr Debtor. The latter signifies his willingness to pay £1,000 for them in three months' time, whereupon Mr Creditor *draws on* him a three months bill for £1,000 and sends it to Mr Debtor for his *acceptance*. 'Drawing' the bill consists of writing on a piece of paper some such legend:

1 January 1948. To B. Debtor: three months after date please pay to J. Creditor or order, the sum of One Thousand Pounds.

(Signed) J. Creditor.

Mr Debtor accepts the bill by writing his name across it, or alternatively persuades a bank or acceptance house to accept it for him. Once accepted, the bill constitutes a promise by the acceptor to pay £1,000 to whoever presents the bill for payment on maturity.

[7] There are in London a number of financial enterprises which make a speciality of acceptance business. They include the world-famous Merchant

the bill for him; this the bank or acceptance house will readily do, provided that it is satisfied that the transaction is in good faith and that the purchaser, by the re-sale of the goods, will be able to provide the funds with which the bill can be redeemed when it falls due. Thus a commercial bill may be either a trade bill accepted by the purchaser of the goods on which the bill is based, or a *bank bill,* accepted by a bank or acceptance house. Bank bills are notably free from risk of default, and if in addition such bills qualify as eligible paper, as in Britain they usually do, then they can be regarded as being as desirable an asset as a Treasury Bill.

Corporate bonds, alias 'debentures' or 'debenture stock', are comparable in all respects, except the prestige and financial standing of the issuer, with government bonds. The best corporate bonds, issued by companies of the highest repute, are indeed almost as attractive to investors as government bonds, but at the other extreme the bonds of little known companies with dubious prospects are decidedly less marketable and more risky. Let us consider first the question of risk. Usually a company issuing bonds makes over to its bond-holders a legal claim on certain of its material assets should the promised interest not be paid; this of course is reassuring to the holders, but not completely reassuring, for a reason which perhaps requires some explanation. Corporate bonds are considerably longer lived than bills, usually having a term of some five years or more, and consequently it would be impracticable for bonds to be secured on specific consignments of readily marketable commodities, such as wool or wheat. Instead they must usually be secured by a claim on specified plants or buildings, which generally speaking are not so readily marketable as wool, wheat or similar commodities. The corporate bondholder should therefore beware of attaching undue importance to any legal claim he may have on the assets of the companies whose bonds he holds: frequently his rights to interest and eventual repayment may be dependent on the profits earned by the companies, and no company's future profits are as assured as the government's revenue from taxation. In other words, corporate bonds may be more or less risky, and none are quite as safe as government bonds. This raises another

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Banks, such as Rothschild and Sons, Hambros Bank, Erlangers Ltd, Morgan Grenfell and Co., etc., as well as some smaller houses. No comparable institutions exist outside London. The *raison d'être* of the acceptance house is that its financial standing is much higher and better known than that of the clients on whose behalf it accepts; hence drawers of bills prefer to draw on an acceptance house, rather than on a customer direct.

aspect of the concept of liquidity. Safety, as well as shortness of maturity, is clearly necessary for liquidity; and conversely illiquidity can arise from either or both of the factors, length of term and risk.

We have still to consider the marketability of corporate bonds, but before doing so let us take note of the last of the four types of corporate fixed-interest securities, preference shares, most of which differ from corporate bonds only in being, on the whole, more risky. Preference shares may be either participating or non-participating. The latter, like bonds, entitle the holder to a fixed annual interest and, again like bonds, they may be either redeemable or perpetual.[8] They differ from bonds only in that they have a lower ranking; that is, the preference shareholders cannot claim any dividends if profits are insufficient to pay the interest on any outstanding bonds; also in case of a dissolution they have no claim on the realized proceeds of the company's assets unless these are more than adequate to redeem the outstanding bonds.

We can conclude then that, for our purposes, non-participating preference shares and the more risky corporate bonds have much in common, and indeed we shall find it convenient in later chapters to limit the term 'bonds' to high-grade bonds and to class inferior bonds with non-participating preference shares.

Participating preference shares, which are not very common in practice, differ from the shares just described in that they entitle the holder not only to fixed annual interest but also to a share in the remaining profits of the company. Hence a participating preference share is a hybrid security, part fixed-interest, part equity.

We can now consider the question of the *marketability* of both bonds and preference shares. At one end of the scale of marketability we have government bonds, which are the most readily marketable of all long-term securities, at the other the preference shares of those companies whose terms of association place legal restrictions on the transfer of their shares.[9] In between these ex-

[8] Redeemable preference shares are, however, much less common than irredeemable ones. Preference shares, besides being participating or non-participating, redeemable or irredeemable, may also be cumulative or non-cumulative. In the case of cumulative preference shares, no dividends may be paid to ordinary shareholders so long as there are any outstanding arrears of preference dividends. In the case of non-cumulative preference shares, the shareholders merely have the first claim on profits (after paying bond-holders' interest) *in any year*, so that arrears of preference dividends are not carried forward.

[9] Such companies are very numerous, though usually small, and are commonly known as private companies. The restriction on the transfer of shares most

tremes we have the whole range of corporate bonds and of the preference shares of companies whose shares can be transferred without restriction. Within this range, the degree of marketability of the securities in question depends on a number of factors, such as whether or not the issue is dealt in on a stock exchange, whether the issuing company is well known, and so on. Bonds or preference shares which are only indifferently marketable can be bought or sold quickly, in any but the smallest amounts, only at the cost of provoking an adverse change in price. The market is too small to absorb a sudden sale without a fall in price or a sudden purchase without a rise in price; hence the holder of such securities has at any time to take into account *two* prices, the price at which he could sell what he already holds and the (higher) price at which he could buy more. Perhaps the best dividing line between the more and the less marketable issues of bonds and preference shares is provided by the criterion: Are they quoted (that is, dealt in) on a stock exchange? Permission to deal in any issue of securities is granted by a stock exchange only if it is clear that the securities will have a reasonable turnover; hence *quoted* securities may be taken to be at least moderately marketable. On the other hand securities which are not traded on an organized market cannot be readily bought or sold, so that the term *unquoted* implies poor marketability. We shall therefore use the words 'quoted' and 'unquoted' to distinguish the more from the less marketable issues of securities.

The marketability of a security introduces yet a third aspect to the notion of liquidity. A bond or other long-term security, as we have seen, is likely to be less liquid than a short-term security, such as a bill. But the relative illiquidity of the former is less to the extent that the security is readily marketable, for ready marketability tends to reduce the loss which would be suffered in the case of a hurried sale.

Non-marketable Fixed-interest Obligations

Having considered those types of fixed-interest obligations which have at least some degree of marketability, we turn to the *non*-marketable types. These are a rather miscellaneous collection. First there are the short-term loans and deposits which are the liabilities

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frequently takes the form that any shareholder wishing to sell his shares must first offer them to some or all of the existing shareholders, or to other specified persons.

of certain financial institutions—the savings banks, the commercial banks and (in London) the discount houses. These obligations are in all cases liquid, owing to the fact that the institutions in question themselves keep a reasonably adequate proportion of their assets in the form of liquid obligations, such as money or eligible paper, and are therefore normally in a position to repay their liabilities in money if called upon to do so. Take, for instance, the London discount houses. They incur short-term liabilities mainly in the form of daily or weekly loans obtained mostly from the English commercial banks and the London offices of overseas banks. The money thus obtained is used to acquire bills, mostly of the eligible variety, and, to a lesser extent, British government bonds with fairly short maturities (usually less than five years). Having assets such as these, the discount houses can always meet their liabilities at the shortest notice, and it is not therefore surprising that in Britain loans to the London 'discount market' or 'bill market' are regarded as the next most liquid asset after central bank money. The commercial banks, in both Britain and Australia, are in a somewhat similar position. The public regards the deposit-liabilities of the commercial banks as liquid obligations, as money now or money in the near future,[10] because it is known that these banks themselves hold an adequate liquid reserve in the form of bank notes, deposits at the central bank, eligible paper and (in Britain) short loans to the discount houses. The deposit-liabilities of savings banks are similarly regarded as money-in-the-near-future, since savings banks are known to have adequate reserves of liquid assets, or alternatively to have their deposit-liabilities guaranteed by a highly liquid guarantor—usually either another bank or the central government. (The central government is always liquid, since it can issue eligible paper—Treasury Bills—and thus get new money from the central bank.)

In the light of what has already been explained, it is possible to draw up a list of obligations which can fairly be regarded as liquid:

Bank notes
Demand deposits at the central bank
Loans to the London discount market
Eligible paper
Demand deposits at the commercial banks
Time deposits at the commercial banks
Deposits at the savings banks

[10] In Australia time deposits are in some cases for terms of as long as one or two years, but in practice the banks will always repay at a slight interest penalty. In Britain time deposits are all repayable at only one week's notice.

This list can be completed by the addition of a further item, Saving Certificates,[11] which are a non-marketable, fixed-interest liability of the central government. Savings Certificates are highly liquid, being repayable at short notice by a borrower who can always get new money from the central bank. Being liquid, they assure the investor a stable money-capital; but (and here they are unique) they also assure him a given payment of interest over a long period. The explanation of this anomaly is that Savings Certificates are designed as an unusually attractive investment for the small saver; that is, the government deliberately offers more generous terms than borrowers normally offer to lenders. However, to prevent all lenders from exploiting these favourable terms, the government sets an upper limit to the number of certificates any one person may acquire.[12]

We must now consider two types of non-marketable fixed-interest obligation which are short-term but cannot reasonably be regarded as highly liquid; these are advances by commercial banks and trade credit extended by industrial enterprises to their customers. Both of these obligations are at best moderately liquid, for in most cases both are the liability of enterprises which do not themselves hold a large reserve of liquid assets. If we look at the balance sheet of a typical industrial enterprise, we rarely see any liquid assets other than a relatively small holding of bank notes and bank deposits. Our representative enterprise may hold *marketable assets,* like bonds or shares or commodities, but such assets can be sold only for what they will fetch, which in certain circumstances may be very little. Our enterprise may also show an asset 'trade debtors', but since the debtors in question are very probably enterprises in much the same position as our own, this asset is no more liquid, from our enterprise's viewpoint, than are our enterprise's debts from the viewpoint of the banks and other enterprises to whom they are owed. Hence bank advances and trade credit fall considerably short of perfect liquidity on account of *risk,* this risk being due to the fact that a widespread attempt to call in short-term credit quickly would force the widespread sale, for what they would fetch, of the marketable assets held by the debtors; as a consequence the

[11] Here and elsewhere in this book 'Savings Certificates' should be taken to include Premium Bonds and 'British Government securities on the Post Office Register'. The latter, of which the most important example is Defence Bonds, are in all relevant respects closely akin to Savings Certificates.

[12] There is also an upper limit to individual holdings of savings bank deposits, and (in Britain) of Defence Bonds and other securities on the Post Office Register.

prices of such marketable assets would fall catastrophically and many of the debtors would be forced to default on their debts. Short-term credit can in the main be withdrawn quickly on a small scale or slowly on a larger scale, but not quickly on a large scale, for that would merely precipitate a financial crisis and give rise to an ever-widening circle of forced sales, falling prices, and insolvency. Trade credit and bank advances can thus both be said to suffer from the *risk of extended maturity;* for though short-term in the eyes of the law they have an unfortunate habit of becoming long-term in practice at just those times of financial stringency when the lenders would most like to have their loans repaid.

We now come to medium- and long-term non-marketable obligations. These consist of loans, for periods ranging upwards of several years, made by insurance companies, savings banks and other financial enterprises, or even by private individuals. Such loans are for the most part to house-purchasers, to farmers (to finance the purchase of land) and to industrial enterprises (to finance the purchase of factories, shops and other buildings). The lender usually obtains a legal claim on the material asset whose purchase is financed by the loan, in which case the loans may be called mortgage loans. Their only significant difference from corporate bonds is that they do not constitute a readily marketable asset, and on that account are less liquid.

The Meaning of Illiquidity

Though the adjective 'liquid' applied to an asset is quite unambiguous, it need hardly be stressed, in view of what has already been said, that there are different kinds, as well as different degrees, of *illiquidity*. Illiquidity in a short-term asset arises to some extent from the possibility of outright default, but mainly from the risk of extended maturity, the risk that the asset may become long-term in fact even though it remains short-term in law. The illiquidity of a long-term asset arises primarily because it *is* long-term, but the illiquidity due to length of maturity may be mitigated by marketability or aggravated by risk of default. Thus in the case of long-term obligations there is no unique measure of illiquidity; whether obligation A is judged to be more or less liquid than obligation B may depend on who is the judge and on the circumstances prevailing at the time.

CHAPTER 5

EQUITY

WE NOW MOVE on to the third of the species of obligations distinguished in Table 1, equity. Equity, like fixed-interest securities, may be more or less readily marketable. The types of equity which are least marketable consist of the proprietors' capital of sole proprietorships and partnerships, and of the ordinary shares of companies which in their legal constitution limit the transferability of their shares.

The remaining type of equity, apart from participating preference shares, comprises the ordinary shares (known as 'common stock' in the U.S.A.) of companies the transferability of whose shares is not subject to legal restrictions. The ordinary shares of such companies differ considerably in their marketability, and as in the case of fixed-interest securities a reasonable criterion by which to separate the more from the less marketable is provided by the test: 'are they *quoted*?'

Quoted ordinary shares, like quoted bonds, are more or less constantly valued on the stock exchange, and thus any existing share of this kind has a current or quoted price which is distinct from both its nominal price and its issue price. Not being redeemable, it has no redemption price. Like a bond, too, it has a nominal rate of return, known as the nominal rate of dividend on the share (corresponding to the nominal rate of interest on a bond) and also a yield[1] which, however, in this case is not uniquely related to the current price. This is because an ordinary share has not got a *fixed* nominal rate of dividend like the nominal rate of interest on a bond; the nominal rate of dividend varies with the profitability or otherwise of the company's operations. Hence the yield of an ordinary share can be calculated only on the purely arbitrary hypothesis that last year's nominal rate of dividend will be steadily maintained in the future; calculated in this way the yield clearly varies in direct proportion to the nominal rate of the last year's dividend and in inverse proportion to the current price of the share. Thus the yield of an ordinary share has not the same definitive

[1] By yield is here meant dividend yield, not earnings yield, i.e. the yield of distributed, but not undistributed, profits.

significance as the yield of a bond; it is a statistic whose interpretation calls for a great deal of personal judgment.

This difference between an ordinary share and a bond points to the gulf which separates the realm of fixed-interest obligations from the realm of equity. The equity of an enterprise does not entitle its holders to specified contractual payments fixed in terms of money; instead it entitles them to the net profits earned by the enterprise, after meeting all current claims and after putting aside such sums as the management thinks are needed to make good the depreciation of material assets, to provide for contingencies such as bad debts, and for use in the business. Equity therefore does *not* make use of money as a medium for deferred payment, and the equity holder is thus far less concerned than the holder of fixed-interest obligations about the future course of the purchasing power of money.

Another important difference between equity and fixed-interest obligations is that the former almost always confers on its holders the right to control the enterprise whose equity they hold. In a sole proprietorship, the owner of the capital has the sole rights of control; in a partnership the control of the business is shared (equally or unequally) by the partners who own its capital; in a company the legal right of control is usually vested in the ordinary shareholders, whose will is taken to be expressed by a majority vote at the annual shareholders' meeting. However, legal rights of control are one thing, actual control is another. Even in a partnership some partners are usually more assertive than others, and the same is true of the shareholders of a small company. But in large companies the tendency for effective control to be exercised by a *controlling interest,* to the exclusion of the rest of the equity holders, is even more marked. Any shareholders together owning 51 per cent of the ordinary shares can, if they remain loyal to each other, constitute an unassailable controlling interest, thus in effect disfranchising the rest of the shareholders. Moreover, owing to the apathy and ignorance of many shareholders, and the difficulty and expense of organizing an opposition group, it is sometimes possible for effective control to be exercised by a controlling interest owning considerably less than 51 per cent of the ordinary shares. Cases have been described where the controlling interest in a company held ten per cent or even less of the ordinary shares. The separation of ownership and control in public companies has in addition been facilitated by a number of legal devices, of which one variety

of holding company, the *industrial trust*, is the most popular. Suppose that 51 per cent of the ordinary shares in company A are owned by company B, and 51 per cent of the ordinary shares in the latter are owned by a group of shareholders who act in concert. Then company A will in effect be controlled by the indirect owners of only 26 per cent of its share capital. By having a third tier in the 'pyramid', as such arrangements are called, the proportion could again be halved, and a fourth tier would halve it again. Alternatively there could be two tiers only, but company B might have half its capital subscribed as preference shares, which normally have no voting rights. Then the owners of one quarter of company B's capital could control company A, which would then be controlled by the indirect owners of less than 13 per cent of its share capital. These illustrations go to show that in practice, especially in the case of large companies, the equity holder frequently has no more voice in the management of the companies whose shares he holds than has the holder of non-voting preference shares or corporate bonds. Like the preference shareholder or bondholder he regards the securities he holds mainly as titles to future monetary receipts, only in his case his monetary receipts are not fixed in advance but depend on the future profit-earning capacity of the companies whose ordinary shares he has bought.

CHAPTER 6

OBLIGATIONS AS ASSETS

EVERY OBLIGATION involves two parties, a holder or investor to whom it is an asset and an *ower* or issuer to whom it is a liability. Let us consider any one holder of obligations, whether he be a private investor or an enterprise. If for any reason he is dissatisfied with the composition of his present holding of obligations he enjoys great freedom to vary his selection in any way he considers advantageous; he can (in the jargon of the stock exchange) *switch* from one asset to another. Switching between two assets, neither of which is money, usually involves two switches, the first out of asset A into money and the second out of money into asset B. The first switch can clearly be done at comparatively short notice, in so far as an investor holds short-term obligations. Whether it can be done as readily in the case of medium- or long-term obligations (including equity) depends on the marketability of the obligations held, for long-term obligations can be disposed of in the short run only by selling them for what they will fetch. 'What they will fetch' in the case of a quoted security means its current price on the stock exchange, but in the case of a less readily marketable security 'what it will fetch' is not so easily established; it depends on the amount of the security an investor wants to sell, the period he is prepared to wait rather than make a bad bargain, and his skill in seeking out potential buyers. Non-marketable long-term obligations clearly cannot be switched into money at all, except by awaiting their maturity. The second switch, from money into the preferred asset, is easy if the obligation in question is dealt in constantly on an organized market or if (as in the case of time deposits, savings bank deposits and Savings Certificates) there is an institution which offers to incur the obligation as a liability, on published terms, whenever requested to do so by an intending holder. In other cases, however, the switch from money into the preferred asset may involve the difficulty of seeking out somebody who is prepared to sell an existing obligation of the appropriate type or to incur a new one as a liability.

Clearly the desirability or otherwise of doing a *full* switch (out of asset A *via* money into asset B) will depend partly on the selling price of asset A and the current buying price of asset B, and also

on the monetary return which each of them affords to the holder: in other words (neglecting any difference between the buying and selling price of an asset) it will depend on the yields of the respective assets. Switching may thus be induced by changes in the relative yields of different obligations. Switching may also occur *autonomously,* due to changes in what may be called the *tastes* of investors. An investor's tastes, in this sense of the term, would be liable to change from time to time on account of his financial circumstances, his views about the future, his liability to taxation, and so on.

The argument of the last paragraph may be restated as follows. At any given moment each investor has a given complex of tastes and is faced with a given pattern of yields on different types of obligations. There is a certain optimum selection of assets appropriate to these tastes and these yields. However, any change either in the investor's taste or in the yields on different types of obligations may render the old optimum selection of assets no longer appropriate and persuade the investor to seek a more advantageous selection by means of suitable switches. Just as a housewife adjusts her purchases both to the present tastes of the family and to the present prices of goods in the shops, so the investor adjusts his holding of obligations to his present tastes and to the yields of obligations of different types. We must now consider what determines investors' tastes and how these manifest themselves in a preference for particular types of obligations.

Apart from the yield which, other things being equal, every investor would like to be as high as possible, what does an investor look for in selecting obligations to hold? The answer to this question depends very much on the individual investor: on his temperament, on his views about the prospects of this or that industry, on the extent of his wealth, on the type and extent of his liabilities, on whether he is a private citizen or an enterprise (and if so, what kind of enterprise), and so on. Without attempting an exhaustive treatment of this subject, let us consider the tastes, as we have used the term, of a number of hypothetical investors who are intended to represent, in an exaggerated way, the attitude of investors in the real world. No mention will be made, however, of these investors' holdings of money as a *means of payment,* since all must hold money to bridge the minimum gap between receipts and payments, the amount required depending on the rate of receipts per annum and the difficulty of synchronizing receipts and payments.

We can conveniently begin with the *income-seeking* investor, the investor whose main aim is to arrange his assets so as to assure himself a steady income in the future and to whom the future capital value of his assets is a matter of comparative unimportance. To such an investor, long-term government bonds are, with one or two reservations, the ideal asset, and if all assets had the same yield he would keep most of his wealth in the form of such bonds. Most of his wealth, but probably not all. For he may wish to take advantage of the facilities afforded to small savers and hold the maximum permitted amount of, for example, Savings Certificates. Or he may wish to assure himself a stable *real* income[1]—an income, that is, which is stable in terms of the goods and services it will buy—rather than a stable *money* income. If so, he may wish to 'hedge' against the possibility of a fall in the purchasing power of money by keeping part of his assets in the form of equity, for it is a frequent characteristic of periods of rising prices, when the real incomes of bondholders are declining, that business profits increase more than proportionately with the rise in prices, so that the equity holder enjoys a rising real income. Once we abandon our assumption of equal yields on all obligations, we find yet another reason for the income-seeking investor holding assets other than government bonds: he may be prepared to take risks in order to obtain a higher yield. This is particularly true of the large investor, who can put his eggs in many baskets and thereby spread his risks in a way which would be impossible for the small investor. The last point applies nowadays much more to the large corporate investor, as exemplified particularly in the more conservative type of investment trust, than to the well-to-do private investor who, as we shall see below, is induced by the incidence of high income-tax[2] to be less concerned with obtaining a steady money income than with making capital gains (which are largely tax-free) or at any rate with avoiding capital losses.

Unlike the industrial trust, which is concerned with exercising at least some control over the companies in which it has invested, the investment trust[3] is concerned merely with holding, and dealing in, obligations of one sort or another. The more adventurous investment trusts set out to supplement the interest and dividends they

[1] The measurement of real income is considered in ch. 18.

[2] 'Income-tax' is used to denote all taxes levied on income, including the British 'surtax'.

[3] So called in Britain. The corresponding Australian term is 'investment company'.

receive on their investments by making capital gains (that is to say, by buying securities in the hope of selling them later at a higher price), but the more conservative ones, like the income-seeking private investor, are mainly concerned to assure themselves a steady current income. But having large resources at their disposal, they are able to take rather greater risks than is the small income-seeking investor, and in practice hold mainly corporate bonds and shares rather than government bonds. An investment trust of this kind serves the purpose of an intermediary between the income-seeking private investor, to whom its shares are intended to appeal, and the market for industrial securities. By judicious investments in high-grade corporate securities it is able, or such is the intention, to give its shareholders a rate of dividend on the issue price of its own new shares such as to compare favourably, even after allowing for the slightly greater risk, with the yield on long-term government bonds.

Next we can take the *entrepreneur* investor, whose tastes in investments are quite different. He wants investments which give him and his associates the controlling interest in enterprises; hence he holds equity. At one end of the scale he may be a shareholder in a small company, a partner in a firm, or even a sole proprietor; at the other extreme he may be a 'captain of industry' holding, alone or with his friends, the controlling interest in many large companies. In all cases the ultimate motives of the entrepreneur investor are probably very mixed: an urge to create and administer; a taste for the power, the prestige and (not least) the remuneration which are associated with the function of management; a desire to build up the earning capacity of an enterprise and thus enhance the value of his share in its equity; and doubtless many other motives applying in particular cases.

Like the income-seeking investor, the entrepreneur investor may be not a private person but a company. Holding companies of the kind known as industrial trusts, to which reference has already been made, are a case in point. In other cases the company enjoying the controlling rights may not be a specialized holding company but may also operate as an industrial enterprise on its own account. The aims in arranging for one company to invest in and control subsidiary companies are numerous and varied. In the example considered in the last chapter, the motive for the formation of company B to control company A was the desire of a group of investors to get control of company A with a minimum of capital

outlay. In other cases the arrangement may permit only of an historical explanation; company X expanded its business in the past by absorbing the business of company Y and to avoid the legal expenses of forming a new company to run both businesses the amalgamation was effected by company X buying out the shareholders in company Y.

We pass on now to our third type of investor, the *capital-cautious* investor, who aims at maintaining the value of his capital stable in terms of money. Investors of this kind are usually characterized by having future commitments, whether definite or contingent ones, more or less fixed in terms of money. They include investors with demand or short-term liabilities (particularly the discount houses and the commercial banks) and enterprises which have decided upon a fairly definite programme of capital expenditure in the next few years. However, for reasons which will be made clear in Chapter 8, a *central* bank has no need to be a capital-cautious investor, even though in practice it may choose to behave like one.

The obligations which most capital-cautious investors prefer to hold are those which we have labelled liquid, those which can at any time be turned quickly into a known and unvarying amount of money. Most capital-cautious investors are tempted to hold obligations of other kinds only by the prospect of a higher yield. There are, however, a minority of capital-cautious investors to whom these remarks do not apply without qualification, namely those investors, particularly life insurance companies, whose future monetary commitments are not liable to crop up at any time but are known to arise on some more or less specific dates. Such investors do not need to hold liquid assets; they prefer assets which mature, as given monetary sums, at or near to dates when commitments are due to arise.

However, even a capital-cautious investor of the normal type may be tempted to forsake liquid assets for other obligations by the prospect of a higher yield. If the additional yield justifies it, he will for instance be prepared to hold some of his assets in the form of imperfectly liquid short-term obligations; thus a commercial bank is always ready to hold quite a high proportion of its assets in the form of short-term advances to customers. He may also be willing, if the yield justifies the risk of capital depreciation, to hold a proportion of his assets in the form of medium- or even long-term bonds, provided they are readily marketable and issued by a highly reputable borrower. Government bonds would of course

satisfy these criteria. But, and this is most important, the slightest suspicion that a fall in bond prices is imminent serves to deter the capital-cautious investor from buying bonds, and may even induce him to sell the bonds he already owns. He is particularly anxious about the possibility of a fall in bond prices when the current price of bonds is unusually high. For then he thinks that a fall in bond prices is more likely than a further rise, and he knows that the yield being so low, a very slight fall in price would completely offset it.

Our next specimen, the *speculative* investor, is interested in the monetary capital value of his assets, but instead of having the cautious aim of merely avoiding capital losses he sets himself the more risky objective of making capital gains. The opportunity for capital gains arises when he believes that the market prices of certain obligations are going to rise; he then assumes the role of a *bull* (as the stock exchange calls him) and buys these obligations, not mainly to enjoy the interest or dividends they afford, but with the intention of selling them later at a higher price. Once he has acquired the obligations he may be lucky or unlucky, for their market prices may either rise or fall, but in either case he will sooner or later decide that henceforth a rise of price has become less likely than a fall. He will then assume the role of a *bear* and sell out.

What kinds of obligations are attractive to the speculative investor? In his role as a bull, he will be interested only in non-liquid obligations (whether fixed-interest or equity) for, as we have seen, the capital value of such obligations is subject to much greater fluctuations than is the capital value of liquid obligations; and clearly assets whose capital value does not fluctuate offer no opportunity of capital gains. Moreover, he obviously requires highly marketable obligations.

As a bear, however, the speculative investor likes money and other liquid assets. For if at the moment he cannot discover any obligation, the market price of which he expects to rise, his best alternative is to keep his resources mobilized in readiness to snap up any bargain which presents itself. The speculative investor thus switches from non-liquid into liquid obligations as he changes from bull to bear, and conversely. Alternatively if, as may well be the case, he operates partly with money borrowed on short-term (for example, from the commercial banks) he will, when he changes from bull to bear, merely repay his short-term indebtedness and await a suitable occasion to borrow and invest again.

What investors are likely to resemble our speculative investor? The ordinary private investor, particularly (as we have seen) the wealthy man subject to a high rate of income-tax, quite frequently plays this part. In some cases he will switch his holdings very frequently, seeking nothing but capital gain and paying little attention to interest or dividends; in others he will buy securities in the hope that they will appreciate, but with the intention of holding them for many years before switching into something else. Another kind of speculative investor is the man whom we would normally call a professional speculator, and who devotes his whole time to stock exchange transactions, quite possibly financing a large part of his purchases by short-term borrowing, and in all probability also making speculative purchases and sales in the forward market.[4] A third example of the speculative investor is the more adventurous type of investment trust (also mentioned above) which is not unwilling to switch from one security to another in the hope of capital gains, even though it may seek the greater part of its revenue in the form of dividends and interest.

This completes our brief survey of investor-types, drawn up with the object of explaining what are the attributes of each kind of obligation (other than its yield) which lead some investors to hold it in preference to other kinds of assets. However, before we conclude this chapter, it is convenient to refer here to the existence of certain stock exchange operators who cannot strictly be called investors, for they never actually hold the securities they buy and sell. These people (who are in practice mostly speculative investors, acting in a different capacity) buy and sell securities *forward* and reverse their bargain before the appointed date of delivery; we can call them *speculators on the forward market.*

A forward transaction is one in which the seller promises to deliver a given security,[5] and the buyer to pay a given price for it, at some specified date in the future. On the London stock exchange, almost all transactions (except in government bonds) are strictly speaking forward transactions, since the buyer is not expected to pay, or the seller to give delivery, until the next Settlement, which (since Settlements normally occur at fortnightly intervals) may be anything up to a fortnight ahead. Hence on the London stock

[4] Such transactions are described below.

[5] Forward transactions are possible on commodity markets and on the markets for foreign currencies, as well as on stock exchanges, but only the last concerns us here.

exchange it is possible to speculate on price movements occurring between two Settlements simply by making a bargain (whether a purchase or a sale) after one Settlement and reversing it before the next. In such cases the speculator's two transactions are offset at the second Settlement; he receives (or pays, if he has 'backed a loser') the difference between his purchase price and his selling price, and never takes or gives delivery of the securities in which he has dealt. Similar facilities for forward dealing are afforded by the Australian stock exchanges, though the arrangements differ in detail.

One great advantage which a forward market offers to the speculator, besides saving him all the formalities of actually taking delivery of securities, is that he is able to gain from a correct prediction of a *fall* in the price of a security. A bull can gain from a correct forecast of a rise in a security's price, whether or not there is a forward market, since he can buy the security outright for cash and hold it until the expected rise occurs. But what can the bear do to back his judgment? Unless he can sell short, that is, sell what he does not own, all he can do is to sell his present holding, if any, of the security in question and thus avoid making a capital loss. He cannot however make a capital *gain* by his superior foresight unless he can sell more than he owns, which is possible only if he is able to sell forward. But if he can sell forward he can back his judgment by selling forward today, waiting for the expected fall in price to occur, and then covering himself by a purchase some time before the due date of delivery, thereby pocketing the excess of his selling price over his buying price. In brief, if there is no forward market a speculator can make gains only so long as there is a rising market, whereas a forward market enables him to make gains on a falling market too.

CHAPTER 7

OBLIGATIONS AS LIABILITIES

LET US NOW TURN to the second party to every obligation, the *issuer* or *ower,* to whom it is a liability. The issuer or ower of obligations, in practice almost always (as we saw in Chapter 2) a government body or a business enterprise, enjoys, like the holder of obligations, a certain degree of freedom to switch from one type of obligation to another. This freedom, as we have seen, enables the holder of obligations to adjust the composition of his assets both to his own tastes and to the yields on different types of obligations; and likewise the analogous freedom enjoyed by the issuer or ower enables him to adjust the composition of his liabilities to his tastes and (in this case also) to the yields on different types of obligations.[1]

How does the government or an enterprise switch from one type of liability to another? The obligations issued by the government are almost all either bills or bonds of various maturities. Switching is possible when the bills or bonds mature, for the government can clearly obtain the redemption moneys by issuing new obligations of whatever type it pleases. There is, however, no need for the government to wait until its obligations mature. All of its bonds, and in Britain its bills too, are dealt in on organized markets; consequently it can at any time buy back (or 'retire') its outstanding obligations with moneys obtained by issuing new obligations of a different sort. Thus the government can to a very great extent have its liabilities in whatever form it chooses.

The ability of an enterprise to switch its liabilities is more circumscribed. These liabilities usually consist of short-term fixed-interest obligations (for example, a bank overdraft and sums owed to trade creditors), long-term fixed-interest obligations (mainly bonds and preference shares) and equity. Preference shares and equity are (with few exceptions) perpetual obligations with no fixed date of redemption, and there are serious legal and practical difficulties

[1] It will be recalled from the previous chapter that this simple statement of the matter needs to be somewhat amended in the case of imperfectly marketable obligations. An imperfectly marketable obligation may have two current prices and therefore two yields, depending on whether one is switching into it from another obligation or out of it to another obligation. This principle applies to obligations as liabilities as well as obligations as assets.

which make it virtually impossible to retire outstanding obligations of these types by bidding for them on the stock exchange. Thus though it may be possible to switch into preference shares or equity out of some other obligation (for example, by issuing more shares and using the proceeds to pay off an overdraft) it is virtually impossible to do the reverse. What about the other liabilities of an industrial enterprise, particularly bank overdrafts, trade creditors and bonds? These can all be switched but only within limits which may in practice be very narrow. Overdrafts and trade creditors can be repaid at any time; and within the limits permitted by the prudence of the borrower and the lender they may also be increased at short notice. Corporate bonds can (like dated government bonds) be repaid on maturity and, in the case of an issue enjoying a good market, can also be retired before maturity by purchase on the stock exchange. Moreover, again within the limits set by the prudence of the borrowing enterprise and the lending public, an enterprise can increase its bond liabilities by making a new issue. Where, however, an enterprise's bonds are not frequently dealt in on the stock exchange it will of course have more difficulty in repurchasing its outstanding bonds or in making another issue. Finally, it need hardly be said that an enterprise cannot switch out of a non-marketable, long-term loan except by waiting until it matures.

Given, then, that the issuer or ower of obligations, like the holder of obligations, has a certain, if in most cases rather circumscribed, freedom to select the sort of obligations which suit him best, what criteria will he apply in making his choice? Whether 'he' is the government treasury or the proprietor or the controlling interest of any enterprise run for profit, other things being equal he will clearly choose to incur that type of obligation whose yield is least; for by making this choice he will raise the largest capital sum for any given annual outlay on interest or dividends.

But the phrase 'other things being equal' assumes away the very things we are now trying to investigate. Why would the government or an enterprise choose (as often happens in practice) to retain as liabilities obligations which, even allowing for the cost and trouble of switching, have a higher yield than some other obligation which could be incurred in their place? Let us consider first the attitude of a typical enterprise, in various hypothetical situations. The Hypothetical Manufacturing Company has outstanding long-term bonds, whose yield is 6 per cent per annum,

but the current price of its £1 (nominal) ordinary shares (40s.) and the most recent nominal dividend paid on them (8 per cent) are such as to make the yield only 4 per cent. Why do not the managing director and his friends, who (let us assume) between them have the controlling interest, decide to issue more £1 ordinary shares at 40s. and use the proceeds to retire the bonds? There are many possible reasons, but two stand out as being very likely ones in practice. First the controlling group may believe in greater prosperity ahead, and hope shortly to be in a position to increase the nominal rate of dividend on the ordinary shares from 8 per cent to 16 per cent. Thus each £100 of bonds retired would save £6 a year interest, but (the expectations of the controlling group being what they are) it is thought that the additional dividends which would in fact be paid on fifty additional ordinary shares (currently marketable for £100) would be not £4 but something nearer £8. In these circumstances the company would clearly have a reasonable reluctance to retire its bonds by issuing more ordinary shares, for the existing shareholders (if they were unable or unwilling to subscribe to the new issue) would get a smaller share of the profits. An alternative explanation of the company not switching its liabilities from bonds to ordinary shares is that the issue of more voting shares might endanger the present controlling interest. If, for instance, the members of the present controlling group hold 51 per cent of the ordinary shares, their control would probably be weakened if they were unable, through lack of funds, to buy for themselves half of any new shares issued.

Now let us vary our assumptions so as to illustrate the opposite case, namely the case of a company which *does* switch from bonds to ordinary shares, even though its bonds have a lower yield than its ordinary shares. Let us for instance suppose that the yield on the Hypothetical Manufacturing Company's ordinaries is not 4 per cent but 8 per cent. What factors might operate in the reverse direction to the two already considered, and induce the company to retire its bonds by issuing more ordinary shares? One such factor follows *mutatis mutandis* from what has already been said: the controllers of the company will have an incentive to arrange a switch from bonds to equity if they fear a *fall* in earnings. But, and this introduces a second factor, the incentive still obtains even if the members of the controlling group do not definitely fear a fall in earnings but, as is more likely to occur in practice, are merely *uncertain* about the future course of earnings. For, in so far as a

company has to devote some of its annual earnings to making fixed-interest payments, any fluctuation in total earnings will be reflected as a greater proportionate fluctuation in the *net* earnings left to the equity holders, after meeting fixed-interest payments. Thus the risks run by the ordinary shareholders of the Hypothetical Manufacturing Company due to their uncertainty about the future course of the company's earnings are aggravated by the existence of an outstanding issue of bonds. Hence there is a clear incentive for the general manager and his friends to arrange a switch from bonds to ordinary shares, and thus (as the financial press puts it) to *reduce the gearing* of the company. We are assuming in our example that this incentive is decisive, that it more than counterbalances all opposing considerations, including the lower yield on bonds than on shares, but in practice of course a decision on whether or not to switch from bonds to equity would call for a careful balancing of pros and cons, and it is impossible to say in general terms which set of factors would predominate.

We have so far considered the relative attractions, as liabilities, of equity on the one hand and fixed-interest obligations on the other. Let us now subdivide the latter into short- and long-term obligations, as exemplified for instance by bank overdrafts and bonds respectively, and compare the relative merits of the two subdivisions, as seen from the standpoint of an enterprise incurring them as liabilities. If the rates of interest on the two obligations are the same, after allowing for any trouble or expense which would be entailed by switching, any enterprise other than a central bank[2] has a strong incentive to prefer the long-term to the short-term variety, except when borrowing for temporary purposes. For if you incur short-term obligations you are clearly much more at the mercy of the holders of these obligations than you would be if you had, let us say, issued bonds; you can always be called upon to redeem the obligations at short notice and you are therefore always, to a greater or less extent, subject to the risk and trouble of having to be prepared to meet such a call. You are no longer free to choose what assets you should hold, for you are running the risk of financial embarrassment in so far as your short-term liabilities are not balanced by an equal value of liquid assets or, failing that, by a considerably greater value of assets which though not liquid are short-term or readily marketable. The manager of an enterprise (other than a central bank) must constantly ask him-

[2] The peculiarities of a central bank are considered in ch. 8.

self whether he could obtain enough money, by realizing his assets quickly, to repay his short-term liabilities and, if so, how great a loss such a rapid disposal of assets would occasion him. Moreover, whether or not he asks this question himself, the holders of his short-term obligations will pose it for him, and may threaten to demand repayment unless he choose his assets with greater prudence. The disadvantages suffered by an enterprise in having short-term liabilities are therefore: first, that it is restricted in the choice of its assets, and second, that it runs the risk of having to realize its assets quickly at a loss. The two disadvantages are to a certain extent alternatives; you can avoid risk of loss by balancing your short-term liabilities mainly with liquid assets, or you can be less restricted in your choice of assets at the cost of running a rather greater risk of loss.

The argument of the previous paragraph applies no less to a commercial bank than to any other enterprise, except a central bank. A commercial bank has liabilities which are almost entirely deposits repayable at short notice or on demand. Its readiness to incur such liabilities is explicable, however, by the fact that the rate of interest paid on them is exceptionally low—*nil,* in fact, in the case of demand deposits. But having such a high proportion of demand and short-term liabilities a commercial bank must be most cautious in its selection of assets. Thus it usually keeps an amount of liquid assets corresponding in value to at least a third (or some such fraction) of its deposit-liabilities, and the rest of its assets are either short-term advances to customers or readily marketable bonds.

To summarize:

1. An enterprise cannot readily switch from equity into fixed-interest liabilities, but sometimes has a measure of freedom to switch in the reverse direction, from fixed-interest liabilities into equity. It has an incentive to make the latter switch due to the advantages of low gearing, but this incentive may be counterbalanced by a lower yield on bonds than on equity, by the expectation of increasing earnings or by the possibility of weakening the existing controlling interest.
2. An enterprise frequently has considerable freedom to switch between short- and long-term fixed-interest obligations but enterprises free to choose, and whose requirement for finance is likely to be continuous, have an incentive to prefer long-term finance even if it is somewhat dearer.

Now let us see how far our conclusions can be applied to the choice of liabilities by government bodies. The liabilities of government bodies are all fixed-interest, and generally speaking these bodies, like business enterprises, are inclined to limit their short-term borrowing even if long-term borrowing is dearer. In the case of minor government bodies, whose short-term obligations are not eligible and which cannot (like the central government) insist on getting advances from the central bank, the reason for preferring long-term to short-term borrowing is the same as the one already noted with respect to an enterprise: short-term borrowing is more risky and it restricts the borrower's choice of assets. These considerations are especially relevant to the borrowing policy of a local authority (or even, in Australia, to a state government), since the assets of such authorities—roads, schools, municipal buildings, and so on—for the most part cannot be sold readily, if at all; hence prudence requires that borrowing should be predominantly long-term.

The above argument does not apply, however, to the central government, which is in the happy position of being able to issue eligible paper, which the central bank is always willing to buy, or alternatively of being able to borrow without limit from the central bank direct. The central government therefore can always get as much money as it wants by virtue of the privileges accorded to it by the central bank. How the central bank manages always to be able to provide money for the government is a matter which will be left until the next chapter, but we should be far from the truth if we supposed that the central bank simply printed bank notes and handed them over to the central government. We shall not enter into further details here, but it is obvious that if the central government cannot be short of cash, the deterrent to short-term borrowing which applies to business enterprises (other than the central bank) and to local authorities does not apply to the central government. And in fact, though a central government's assets are little (if any) more readily realizable than those of local authorities, the central governments of both Britain and Australia do borrow extensively on short-term, in the form both of Treasury Bills and of bonds of short maturities.[3]

If then the rate of interest on short-term government securities

[3] Thus, according to an article by Professor Morgan, in the *Economic Journal* of December, 1944, over 40 per cent of the British government debt in 1944 had one year or less to maturity. In 1947 about one quarter of Australian government debt had one year or less to maturity.

is less than on long-term bonds, as it has been in Britain and Australia in most years since the early 'thirties, why does the central government not switch all its long-term liabilities into short-term liabilities? Briefly, the answer is that a switch by the government from long- to short-term borrowing increases the volume of liquid assets (and correspondingly decreases the volume of long-term bonds) held by the public. How exactly this occurs will be explained in the next chapters, but granted that it does, why should it worry the government? This second question is answered in later chapters, where it will be explained that the ownership by the public of a large amount of liquid assets may aggravate the difficulty of controlling a fall in the purchasing power of money.

CHAPTER 8

THE CENTRAL BANK

The Functions of a Central Bank

AS A FIRST STEP to considering how a banking system works let us consider what the balance sheet of a central bank tells us. The *liabilities* side of the balance sheets of the British and Australian central banks, as set out in Tables 2 and 3 at the end of this chapter, can in both cases be rearranged thus:

Bank notes in circulation,
Bankers' deposits, including in Australia *Special Accounts,*
Government deposits,[1]
Other deposits,
Equity.

The first three of these items reveal three of the main functions of a central bank: to issue bank notes, to act as the commercial banks' bank and to act as banker to the central government. The first item consists of the outstanding bank notes issued by the central bank, excluding any notes held within the bank itself; this item could be divided between the bank notes held by the commercial banks and those held by the public (i.e. by private citizens and by enterprises other than banks).

The second item, 'bankers' deposits' (so called to distinguish it from *bank deposits* held by the public and incurred as liabilities by the commercial banks), consists of demand deposits (transferable by cheque and withdrawable as bank notes) and also, in Australia, of Special Accounts. The former, along with the bank notes held by the commercial banks (and a comparatively small holding of coins), constitute *bankers' cash* and as such are the commercial banks' first line of reserve against an 'inland drain', that is, against a move by members of the public to withdraw their bank deposits in the form of bank notes. Bankers' demand deposits at the central bank also operate to facilitate the clearing of cheques between one commercial bank and another. If for instance on any day the depositors at Commercial Bank A made £*x* more payments to depositors at Bank B than B's depositors made to Bank A's depositors,

[1] Government deposits are called 'Public Deposits' in Table 2 and are included in 'Other Liabilities' in Table 3.

Bank A would transfer the balance by drawing on its bankers' deposit a cheque for £x in favour of Bank B. In tabular form the transaction would work out as follows, with the £ sign omitted:

—	LIABILITIES	ASSETS
Commercial Bank A	Bank Deposits $-x$	Bankers' Demand Deposits $-x$
Commercial Bank B	Bank Deposits $+x$	Bankers' Demand Deposits $+x$

Special Accounts, the other component of bankers' deposits, are an exclusively Australian phenomenon. Instituted as a war-time measure in 1941 and perpetuated by post-war legislation, they are deposits which the Commonwealth Bank has *blocked* and which cannot normally be withdrawn except with the consent of that Bank.[2]

The third item on our list of a central bank's liabilities, 'government deposits', consists of the demand deposits held by the central government and certain other government bodies. (Non-central government bodies usually bank at the commercial banks.) 'Public Deposits' on the Bank of England's balance sheet are known to consist of the accounts of the central government itself and of extra-budgetary accounts, such as the National Insurance Fund, administered centrally either by the Treasury direct or by trustees appointed by the central government.

The fourth item on our list, 'other deposits', corresponds to the Bank of England's 'Other Accounts', and consists of demand deposits owned by enterprises other than the commercial banks. In the case of the Bank of England the enterprises in question are probably for the most part the London discount houses, the Merchant Banks,[3] and the London offices of overseas banks, including the Australian banks.

In Australia the central bank's balance sheet does not distinguish between 'government deposits' and 'other deposits' but combines them in a single item, 'Other Liabilities', as shown in Table 3. Apart from government deposits, the chief constituents of these 'Other Liabilities' are deposits owned by Australian savings banks and by various commodity boards.

The fifth and last item on our list, equity, is small and largely self-explanatory. In the case of both the Bank of England and the Commonwealth Bank, the equity holders are the central governments of the respective countries. It should be noted that apart

[2] The Bank of England has recently been authorized to introduce similar arrangements in Britain, should the need arise. See pp. 64-5.

[3] See footnote on p. 23.

from equity and (in Australia) Special Accounts, the liabilities of a central bank are either bank notes or deposits transferable by cheque and convertible on demand into bank notes. These bank notes and demand deposits are what in Chapter 3 we labelled *central bank money.*

The chief *assets* of the British and Australian central banks can be summarized briefly as three items:

Advances
Securities
International reserves

The first of these items is small and hardly needs a separate explanation, for a central bank rarely makes advances to a customer except in circumstances where the customer is in a position to sell the bank eligible paper. In Britain, for instance, advances are made almost exclusively to the central government, which could equally well sell the bank Treasury Bills, and also to the discount houses, but only on the security of an equivalent amount of eligible bills. Thus whether the customer is the government, a discount house, or (as may happen in Australia) a commercial bank, he is normally eligible for an advance only because he could equally well offer eligible paper; and in practice the customer usually does offer eligible paper, unless he requires accommodation for only a very short period.

The securities held by a central bank are almost exclusively eligible bills and government bonds. These securities may be acquired in either of two ways: on the bank's own initiative, or, much less frequently, on its customers' initiative. In the former case the bank simply buys bonds or (in Britain) bills in the open market (hence the phrase, *open market purchases)* or alternatively buys Treasury Bills or bonds direct from the government. Where the bank buys securities on its customers' initiative, it is said to act as *lender of last resort,* for the customers in question, unable to raise money on more favourable terms, must have had to take their eligible paper to the bank and ask for it to be discounted.

The third item in our list of central banks' assets, 'international reserves', applies to the Commonwealth Bank but not to the Bank of England.[4] The international reserves held by the Commonwealth

[4] Britain's international reserves, consisting mainly of gold and dollars, are held by the British government, not the Bank of England. However, all transactions in international reserves are segregated in a special account, the Exchange Equilization Account, which is administered on the government's behalf by the Bank of England.

Bank consist of gold and balances held abroad. The latter, sometimes called 'London Funds', consists of sterling obligations, that is, of English money and promises to pay English money. In practice the sterling obligations favoured by the Commonwealth Bank are liquid obligations (such as deposits at English banks, loans to discount houses and bills payable in London) and to a lesser extent bonds readily marketable on the London stock exchange. How does the Commonwealth Bank acquire its international reserves? It acquires its gold by buying it from the Australian mining companies; it acquires its London Funds almost exclusively through the operations of the Australian commercial banks. As will be explained in Chapter 23 the Australian banking system operates what may be called the *sterling standard:* this means in practice that the Australian commercial banks undertake to buy and sell English money (sterling) for all legal purposes at a published, but not necessarily invariable, rate of exchange, at present corresponding approximately to £A125=£E100. As the result of their daily work of buying sterling from customers who have had receipts from overseas and selling sterling to customers who need to make payments overseas, the commercial banks may have either to add to or to draw on their holdings of sterling, depending on whether overseas receipts have exceeded, or have fallen short of, overseas payments. The commercial banks are however not permitted to hold large reserves of sterling on their own account and consequently, if the accumulation (or drain) of sterling is persistent, they must have recourse to the Commonwealth Bank, which is in turn always ready to buy and sell sterling at a rate of approximately £A125=£E100. In effect, therefore, the commercial banks act as intermediaries between their clients on the one hand and the Commonwealth Bank on the other; if the commercial banks' clients persistently have more overseas receipts than overseas payments the Commonwealth Bank accumulates London Funds; in the opposite circumstance it runs down its London Funds.

The Creation of Central Bank Money

We have now seen what are the main items which appear on the balance sheet of a central bank. We have thereby obtained an idea of the functions of a central bank: namely to act as the note-issuing authority, as the commercial banks' bank, as the government's banker, as the lender of last resort and (in Australia but not in Britain) as the custodian of the country's international

reserves. What else can be said of a central bank's balance sheet? In the first place it differs from the balance sheets of all enterprises outside the banking system in that in their balance sheets the liabilities side helps to explain how the assets were acquired, whereas in a central bank's balance sheet the reverse obtains, and the assets side helps to explain how the liabilities were incurred. Consider for instance our friend in Chapter 1, the Smith Manufacturing Company; what does its balance sheet tell us about the history of the business? It suggests that at various times in the past the company acquired an asset in the form of a bank deposit, by incurring various liabilities—that is, by issuing shares and bonds and by borrowing; and that this bank deposit was then largely paid away by cheque in exchange for other assets—plant and buildings, securities, patent rights and so on—which the management hoped would be income-earning. In short, the Smith Manufacturing Company incurred liabilities in order to acquire assets.

Now contrast this company with a central bank, say the Commonwealth Bank. The Commonwealth Bank, like the Smith Manufacturing Company, buys assets and pays for them by cheque, but in this case the cheque is drawn not on an outside bank but *on itself*. Since the Commonwealth Bank may buy assets either from the government, or from the commercial banks, or again from the public, let us follow through the consequences of the Commonwealth Bank buying an asset worth £100 from each of these parties. Suppose the Bank bought securities in the open market and that the seller happened to be John Digger. John Digger would receive a cheque for £100 in his favour drawn by the Commonwealth Bank on itself. He would pay it into his account at his commercial bank, whose total bank deposits would thereby be increased by £100. The commercial in turn would pay the cheque into its own account at the Commonwealth Bank; thus bankers' deposits would also be increased by £100. In tabular form the outcome can be shown as follows (the £ sign being omitted):

—	LIABILITIES		ASSETS	
The Public	—		Bank Deposits	+100
			Securities	−100
The Commercial Banks	Bank Deposits	+100	Bankers' Deposits	+100
The Central Bank	Bank Notes in Circulation		International Reserves	
			Advances	
	Bankers' Deposits	+100	Securities	+100
	Government Deposits			

Thus the acquisition by the Commonwealth Bank of an asset, *securities,* has resulted in its incurring a liability, *bankers' deposits.*

If the Commonwealth Bank purchased the securities not from the public but from the government, the government would pay the cheque it received into its account at the central bank. Hence the immediate outcome would be:

—	LIABILITIES		ASSETS	
The Central Bank	Bank Notes in Circulation		International Reserves	
	Bankers' Deposits		Advances	
	Government Deposits	+100	Securities	+100
The Government	Securities issued	+100	Deposit at Central Bank	+100

If however, as is likely, the government used the proceeds of sale of its securities to make payments by cheque to its employees, contractors, or other members of the public, the eventual outcome, so far as the banking system is concerned, would be the same as if the securities had been bought in the open market.

Lastly, if the £100 of securities were bought by the Commonwealth Bank from a commercial bank, the outcome would be:

—	LIABILITIES		ASSETS	
The Commercial Banks	Bank Deposits		Bankers' Deposits	+100
			Securities	−100
The Central Bank	Bank Notes in Circulation		International Reserves	
			Advances	
	Bankers' Deposits	+100	Securities	+100
	Government Deposits			

In all cases therefore a purchase of assets by the central bank has the effect of increasing its liabilities, normally in the form of bankers' deposits. A central bank, unlike the Smith Manufacturing Company, does not incur liabilities in order to acquire assets, it acquires assets and thereby incurs liabilities.

The argument so far has aimed at showing how one of a central bank's liabilities, *bankers' deposits,* comes into existence. Now let us complete the story by accounting for the existence of *government deposits, other deposits* and *bank notes.* Government deposits as we have seen may come into existence by the government selling securities to the central bank, though they disappear in favour of bankers' deposits when the government makes pay-

ments by cheque. Alternatively these deposits may come into existence at the expense of bankers' deposits or bank notes: this happens whenever the government's cash receipts from the public and the commercial banks exceed its cash disbursements. Let us trace the effects of a receipt by the government from a member of the public; suppose Mr Smith pays his income tax by paying a cheque for £100. The consequences are:

—	LIABILITIES		ASSETS	
The Public	—		Bank Deposits	−100
The Commercial Banks	Bank Deposits	−100	Bankers' Deposits	−100
The Central Bank	Bank Notes in Circulation		International Reserves	
	Bankers' Deposits	−100	Advances	
	Government Deposits	+100	Securities	
The Government	—		Deposits at Central Bank	+100

If Mr Smith had paid in bank notes the consequences would have been:

—	LIABILITIES		ASSETS	
The Public	—		Bank Notes	−100
The Central Bank	Bank Notes in Circulation	−100	International Reserves	
	Bankers' Deposits		Advances	
	Government Deposits	+100	Securities	
The Government	—		Deposits at Central Bank	+100

In the one case, therefore, government deposits have increased at the expense of bankers' deposits; in the other at the expense of bank notes in circulation.

Changes in 'other deposits' are not in practice of much importance.[5] Such changes as do occur are associated with a counterbalancing change in bankers' deposits or in government deposits, for reasons which will be apparent from the foregoing argument.

There remains the question of how additional bank notes get into circulation. One reason is clear: if the government's payments to the public in notes exceed its receipts in notes. Another and more important reason is that the commercial banks may choose to with-

[5] Except for the deposits held at the Commonwealth Bank of Australia in connection with various government-sponsored commodity schemes.

draw some of their bankers' deposits in the form of bank notes. In practice the commercial banks rarely exercise their right to withdraw notes from the central bank except to replenish their note holding after it has been depleted by members of the public withdrawing as bank notes some of *their* deposits at the commercial banks. Suppose that members of the public choose to withdraw £100 in bank notes from their bank deposits and that the commercial banks then replenish their note-holding by £90. The consequences of the two transactions are as follows:

—	LIABILITIES		ASSETS	
The Public	—		Bank Notes Bank Deposits	+100 −100
The Commercial Banks	Bank Deposits	−100	Bank Notes Bankers' Deposits	−100+90 −90
The Central Bank	Bank Notes Bankers' Deposits Government Deposits	+90 −90	International Reserves Advances Securities	

Thus bank notes get into circulation because the commercial banks can turn their bankers' deposits into bank notes whenever they choose; but in practice they rarely choose to exercise their right except after an 'inland drain', that is, after the public has exercised its right to convert its bank deposits into notes.

To sum up the argument so far:

1. The balance sheet of a central bank indicates the bank's main functions: to issue bank notes, to act as the commercial banks' bank and the government's banker, to operate as the lender of last resort, and (in Australia but not Britain) to hold the country's international reserves.

2. A central bank's balance sheet differs from the balance sheets of enterprises outside the banking system in that instead of the liabilities side helping to explain how the assets were acquired, the assets side helps to show how the liabilities were incurred. And since most of the liabilities of a central bank are *money*, the assets side of the central bank's balance sheet gives an indication of how central bank money comes into existence.

3. In defence of this thesis it has been shown that the acquisition of assets by the central bank necessarily creates an equal amount of bankers' deposits or government deposits.

4. We have also seen that government deposits come into existence at the expense of bankers' deposits whenever the government's cash receipts from the public and the commercial banks exceed its cash disbursements.

5. Further we have seen that bank notes also get into circulation at the expense of government deposits or of bankers' deposits, in the latter and more important case almost always as the result of an 'inland drain'.

The Liquidity of a Central Bank

We have now to note a second peculiarity of a central bank's balance sheet. The balance sheet of any enterprise other than a central bank gives some indication of what assets there are with which to repay the liabilities; in other words it helps to show the solvency of the enterprise. As we saw in Chapter 7, the question of how adequately the assets of an enterprise 'cover' its liabilities is particularly important if the liabilities are short-term or on demand, for in this case both the borrower and the lender are anxious always to ensure that the amount and composition of the borrower's assets are such that he is able, if needs be, to honour his promises to pay. We also saw that this aspect of a balance sheet was of particular importance in the case of a commercial bank, whose liabilities are virtually all repayable on demand or at short notice and whose balance sheet is carefully watched, both by the banker himself and by his depositors, to confirm that the bank's assets are adequate in amount and in liquidity.

However, the 'solvency' and 'liquidity' aspects of a balance sheet do not apply, or at any rate apply only partially, to the balance sheet of a central bank. Consider first the balance sheet of a central bank, which like the Bank of England, does not operate as the holder of the country's international reserves. The assets of the Bank of England are entirely advances and fixed-interest securities —promises of English money at certain dates in the future. Does the presence of these assets in the Bank's balance sheet reassure the people to whom the Bank has incurred demand or short-term liabilities? Do the holders of Bank of England money, whether notes or demand deposits, feel safer when they see what assets the Bank is holding?

Professor Sir Dennis Robertson has dealt with these questions by inventing a delightful Socratic dialogue from which the following is an extract:[6]

Socrates: I see that your chief piece of money carries a legend affirming that it is a promise to pay the bearer the

[6] Quoted from *Lloyd's Bank Review*, May 1939, by kind permission of the editor.

sum of one pound. What is this thing a pound, of which payment is thus promised?

Œconomist: A pound is the British unit of account.

Socrates: So there is, I suppose, some concrete object which embodies more firmly that abstract unit of account than does this paper promise?

Œconomist: There is no such object, O Socrates.

Socrates: Indeed? Then what your Bank promises is to give the holder of this promise another promise stamped with a different number in case he regards the number stamped on this promise as in some way ill-omened?

Œconomist: It would seem indeed to be promising something of that kind.

Socrates: So that in order to be in a position to fulfil its promises all that the Bank has to do is to keep a store of such promises stamped with all sorts of different numbers?

Œconomist: By no means, Socrates—that would make its balance sheet a subject for mockery, and in the eyes of our people there resides in a balance sheet a certain awe and holiness. The Bank has to keep a store of Government securities.

Socrates: What are Government securities?

Œconomist: Promises by the Government to pay certain sums of money at certain dates.

Socrates: What are sums of money? Do you mean Bank of England notes?

Œconomist: I suppose I do.

Socrates: So these promises to pay promises are thought to be in some way solider and more sacred than the promises themselves?

Œconomist: They are so thought, as it appears.

Socrates: Do you find that your monetary system works well?

Œconomist: Pretty well, thank you, Socrates, on the whole.

Socrates: That would be, I suppose, not because of the rather strange rules of which you have told me, but because it is administered by men of ability and wisdom?

Œconomist: It would seem that that must be the reason, rather than the rules themselves, O Socrates.

In brief, then, the Bank of England does not have to meet its demand liabilities by drawing on its assets; it merely offers other liabilities in their place. The Bank of England therefore *cannot*

become financially embarrassed; though the Bank has other responsibilities, particularly in connection with the avoidance of a rapid fall in the purchasing power of money, it need have no anxiety whatever on the score of paying its debts.

In Australia the position of the central bank is only slightly different. The greater part of the Commonwealth Bank's assets are, like the Bank of England's, promises to pay the home currency, and these clearly afford no 'backing' for the Bank's liabilities. But in addition the Commonwealth Bank, being the repository of the Australian international reserve, holds a certain amount of assets of a quite different kind, namely gold and London Funds. However, even these international assets do not strictly speaking constitute 'backing' to the Bank's liabilities, for the holder of the Commonwealth Bank's notes and deposits has no *legal* claim to have these obligations converted into gold or sterling, but only a claim to have them exchanged for other identical obligations. Hence the Commonwealth Bank, like the Bank of England, is necessarily able to pay its debts. But though Commonwealth Bank money is not legally convertible into gold or sterling, the Bank (as we have seen) does in practice follow a policy of exchanging its money for sterling for all approved purposes at a published, though not necessarily invariable, rate of exchange. The Bank's international reserves are simply its 'stock in trade' as the official dealer in sterling.

TABLE 2

Bank of England Return, 17 September 1947*

(All figures in £E million)

Capital and Rest (Equity) ..	18	Discounts and Advances ..	12
Notes in Circulation	1,383	Government Securities ..	1,761
Public Deposits	10	Other Securities	19
Bankers' Deposits	290	Gold and Silver Coin	3
Other Accounts	94		
	1,795		1,795

* The Bank of England return is split into two sections, headed respectively 'Issue Department' and 'Banking Department'. This division is unimportant for our purposes; hence all references in the text are to the consolidated version, given here. The consolidated return is simply an aggregation of the two sections of the published return, with the item, 'Notes in Banking Department' deleted from both sides.

TABLE 3

Commonwealth Bank of Australia

Statement of Central Banking Business* (including Note Issue Dept.), 17 September 1947

(All figures in £A million)

LIABILITIES		ASSETS	
Capital and Reserve Funds ..	9	Gold and Balances held Abroad	176
Notes on Issue	202	Australian Coin	7
Special Accounts of Trading Banks	238	Government and Other Securities (including Commonwealth Treasury Bills)	407
Other Deposits of Trading Banks	32	Other Assets ..	9
Other Liabilities	118		
	599		599

* In 1947 the Commonwealth Bank was a commercial bank as well as a central bank. More recently, its commercial banking functions have been taken over by the Commonwealth Trading Bank of Australia.

CHAPTER 9

THE COMMERCIAL BANKS

The Function of Commercial Banks

THE BALANCE SHEET of a commercial bank[1] has many features in common with that of a central bank. On the liabilities side, for instance, the most important item is 'deposits'; indeed this is the *only* important item, for commercial banks, unlike central banks, do not normally issue bank notes. The holders of commercial bank deposits are, however, almost exclusively members of the public; only a small proportion is owned by other banks and by government bodies; thus the composition of the ownership of commercial bank deposits differs considerably from that of central bank deposits. Moreover, commercial bank deposits (or simply bank deposits, as we have been calling them) may be either demand deposits (current accounts) or time deposits (deposit accounts), the former being transferable by cheque and used as money, the latter withdrawable at notice, now usually of a week in England but sometimes of a considerably longer period (up to two years) in Australia. Time deposits always bear interest, but demand deposits normally do not. Deposit holders can switch from demand to time deposits whenever they wish, and from time to demand deposits on giving due notice.

On the assets side of a commercial bank's balance sheet are two items which we have already met among a central bank's assets: securities and advances. The former consist almost exclusively of bills and government bonds; the latter, however, (unlike a central bank's advances) are almost entirely advances to the public, not to other commercial banks or to the government. Thus a commercial bank's customers, in respect of both deposits and advances, are the public.

The Liquidity of a Commercial Bank

There is, however, a third item among a commercial bank's assets, in addition to securities and advances, namely *bankers' cash*. This

[1] Table 4, at the end of this chapter, gives the aggregate balance sheet of the English commercial banks as at the end of 1957. Table 5, also at the end of this chapter, gives the aggregate balance sheet of the Australian commercial banks as in March 1946.

consists of bank notes and bankers' deposits, both liabilities of the central bank. Commercial banks have to hold bankers' cash basically because (as we suggested in Chapter 3) the public tends to regard demand deposits at the commercial banks as secondary money which is valuable only because it is readily convertible into bank notes, that is, into central bank money. It is to ensure this convertibility that the commercial banks hold bankers' cash, which *is* central bank money, and a prudent amount of other obligations (namely, eligible bills and, in England, advances to the discount houses) which can always quickly and without appreciable loss be turned into central bank money.[2]

As we saw in Chapter 7, a commercial banker's desire for a high degree of liquidity is not fully satisfied simply by the holding of an appropriate amount of bankers' cash and of other assets which are liquid in terms of central bank money. His imperfectly liquid assets are also carefully chosen so as to be either short-term, as in the case of advances to industrial enterprises, or at any rate highly marketable, as in the case of government bonds. It is, however, important to note that these less liquid assets cannot be used to increase the amount of bankers' cash available to the commercial banks considered as a whole. Let us suppose, for instance, that the Midland Bank prepares to meet its depositors' claims by selling £100 of bonds on the stock exchange, and that the buyer of the bonds happens to be Mr Green, who banks at Barclays. The outcome of the transaction, which is shown below in tabular form, is that the Midland gains £100 of bankers' cash, but entirely at the expense of Barclays.

—	LIABILITIES		ASSETS	
The Public	—		Bank Deposit	−100
			Bonds	+100
Midland Bank	Bank Deposits		Bankers' Deposits	+100
			Bonds	−100
Barclays Bank	Bank Deposits	−100	Bankers' Deposits	−100

The consequence of the transaction to the commercial banks considered together is that there is no increase in their bankers' deposits, because the bonds were sold not to the central bank but to

[2] There is yet another item among the assets of the Australian commercial banks, namely London Funds. The purpose of these has, however, already been described.

the public.[3] What has happened instead is that the same amount of bankers' cash is now held as 'cover' against a reduced volume of bank deposits.

Let us take another example. This time the Midland prepares to meet its depositors' claims by calling in £100 of its advance to the Smith Manufacturing Company. This company thereupon sells £100 of its assets to the Brown Manufacturing Company, which banks at Barclays, and uses the proceeds to repay the Midland. The consequences are:

—	LIABILITIES		ASSETS	
Smith Manufacturing Co.	Bank Overdraft	−100	Bank Deposit Other Assets	 −100
Brown Manufacturing Co.	—		Bank Deposit Other Assets	−100 +100
Midland Bank	Bank Deposits		Bankers' Deposits Advances	+100 −100
Barclays Bank	Bank Deposits	−100	Bankers' Deposits	−100

Here again, since the Smith Manufacturing Company did not sell its assets to the central bank, there is no increase in the bankers' deposits of the commercial banks as a whole, but merely a gain by the Midland at the expense of Barclays. As in the previous example, what has happened is that the same amount of bankers' cash is now held as 'cover' against a smaller amount of bank deposits.

The Creation of Bank Deposits

Our analysis of why it is that the less liquid assets held by the commercial banks do not give the commercial banks as a whole access to additional bankers' cash can be adapted to show how the commercial banks are able to add to their assets. A commercial bank, like the central bank, can buy additional earning assets (that is, assets other than cash) by drawing a cheque on itself and offering it in payment for the assets. Let us suppose that on this occasion the Midland Bank, instead of selling, buys £100 of bonds by drawing a cheque on itself in favour of the seller, who again happens to be Mr Green. The outcome would be as follows:

[3] If bonds had been sold to the central bank (which, since bonds are not eligible, could only occur on the central bank's initiative) the outcome would of course have been an increase in total bankers' cash, as was shown in ch. 8, p. 53.

—	LIABILITIES		ASSETS	
The Public	—		Bank Deposits	+100
			Bonds	−100
Midland Bank	Bank Deposits		Bankers' Deposits	−100
			Bonds	+100
Barclays Bank	Bank Deposits	+100	Bankers' Deposits	+100

Alternatively, let us suppose that the Midland Bank acquires an additional earning asset by offering overdraft facilities to the Smith Manufacturing Company, which thereupon draws a cheque for £100 to buy goods from the Brown Manufacturing Company. The outcome would be exactly the same, so far as the banks are concerned:

—	LIABILITIES		ASSETS	
Smith Manufacturing Co.	Bank Overdraft	+100	Goods	+100
Brown Manufacturing Co.	—		Bank Deposit	+100
			Goods	−100
Midland Bank	Bank Deposits		Bankers' Deposits	−100
			Advances	+100
Barclays Bank	Bank Deposits	+100	Bankers' Deposits	+100

In both these examples it will be seen that though the Midland Bank has parted with £100 of bankers' cash in return for its additional earning assets, and has thus made no net increase in its assets, the bankers' cash lost by the Midland has not been lost to the commercial banks as a whole. Moreover, total earning assets and total deposit-liabilities are now each £100 more than previously. It would thus seem that the commercial banks as a whole are able, like the central bank, to create additional deposit liabilities *as the result* of acquiring new assets.

This conclusion is sound, subject to three reservations. The *first* is that the commercial banks must, as it were, keep in step in their acquisition of earning assets, for otherwise the banks which acquire earning assets most rapidly will reduce their liquidity by losing bankers' cash to the other commercial banks. In our examples, for instance, the Midland lost £100 of cash to Barclays; if, however, the other commercial banks had been acquiring earning assets at the same time, the Midland need not have suffered a net loss of cash. The *second* reservation is that even when the commercial banks keep in step they can add to their imperfectly liquid assets (that is, non-eligible securities, or advances to customers other than

discount houses) only if they are prepared to tolerate a lower standard of liquidity—for their liquid assets, though intact in absolute amount, would become smaller in relation to the increased total of bank deposits. The *third* reservation is that the commercial banks are subject to advice and instructions from the central bank and may thereby be prevented from creating further bank deposits by acquiring earning assets, even though none of these banks is yet seriously deterred by considerations of illiquidity.

The effect of the second reservation in the preceding paragraph, reinforced by the third reservation, is that in both Australian and British conditions the ultimate control of the volume of bank deposits lies largely with the central bank and Treasury, rather than with the commercial banks. Precisely how this control can be achieved in the two countries is a matter to be explained by writers on banking,[4] rather than in a book like this, dealing primarily with monetary theory. However, the most important devices of control are fairly simple. In Australia the most important device is clearly the Special Accounts system: as we have already seen, the Commonwealth Bank has far-reaching powers to 'block' the commercial banks' cash in these accounts, and thus to control these banks' liquidity. In Britain control by the Bank of England and the Treasury rests mainly on the commercial banks' working rule that their bank deposits must bear to their total liquid assets the proportion of not more than 100:30. If a commercial bank's bank deposits are excessive by this criterion, it will dispose of non-liquid assets until the due proportion is restored. This conventional proportion is, however, an effective device for disciplining the commercial banks only in so far as the Treasury is able and willing to regulate its issue of Treasury Bills with a view to maintaining at the required level the availability of liquid assets to the commercial banks.[5] This proviso is now realized to be of such a serious nature that the government has recently (July 1958) authorized the Bank of England to discipline the commercial banks, should

[4] See Bibliography, p. 241, and in particular Professor Sayers' *Modern Banking* and Professor Arndt's *The Australian Trading Banks*.

[5] The British commercial banks' liquid assets, other than bankers' cash, comprise almost exclusively Treasury Bills and loans to discount houses. As will be explained shortly, any increase in the amount of Treasury Bills outstanding will normally be reflected in the amount taken up by the discount houses (due to their practice of 'covering the tender'), and hence in the amount of the accommodation which these houses seek either from the Bank of England (thereby increasing the commercial banks' cash) or from the commercial banks (thereby increasing their other liquid assets).

the need arise, by introducing a scheme of Special Deposits, closely akin to the Australian Special Accounts.[6]

Though in both Australia and Britain the volume of bank deposits can be controlled by the central bank and the Treasury, the exercise of this control may be (and in practice often is) subordinated to an official policy of controlling, or influencing, the level of interest rates. For, as we shall see in Chapters 11 and 12, the central bank or the Treasury can influence the level of interest rates only if they are prepared to acquiesce in changes in the volume of bank deposits.

The Discount Houses

There are now in London ten discount houses, all of which conduct their affairs in much the same way: they hold, and deal in, both high-quality bills (especially Treasury Bills) and short-term government bonds (with less than five years to maturity), and they finance these operations with their own capital resources, greatly supplemented by short-term borrowings, partly from the joint stock banks and partly from other institutions.

The aggregate balance sheet position of the discount houses was in 1957 very approximately as follows:

LIABILITIES	£ *million*	ASSETS	£ *million*
Own capital resources	40	Commercial Bills	100
Loans from the Joint Stock Banks	420	Treasury Bills	700
Loans and deposits from elsewhere	540	Bonds	200
	1,000		1,000

One reason for the importance of the discount houses in the British monetary system is that they operate as the channel by which the joint stock banks have access to the Bank of England. If the joint stock banks get short of cash, they do not themselves seek accommodation from the Bank; instead they call in their loans to the discount houses, whose ability to repay is facilitated by their privileged access to the Bank.

The basis of the discount houses' relations with the Bank of England is that the latter acts as an *automatic* lender of last resort,

[6] See the article on 'The New Monetary Weapon' in *The Banker*, August 1958, p. 493.

in the sense that it is always prepared to monetize the assets of the discount houses, whether these be Treasury Bills, other prime quality commercial bills, or short bonds (i.e. government bonds with less than five years to maturity).[7] The Bank is of course prepared to help in this way only at a price, this price being at worst Bank Rate.[8] But so long as the Bank of England continues to offer this facility, the debts of the discount houses are virtually as liquid as central bank cash. So also are Treasury Bills and other prime quality commercial bills,[9] since (in return for a small margin of profit) the discount houses would always be willing to buy them for rediscount at the Bank.

The discount houses are important not only as the channel by which the joint stock banks have access to the Bank of England; they also provide one of the routes (and much the most frequently used one) by which the government has access to the Bank. For there is a convention by which the discount houses, as members of the 'discount house syndicate', collectively undertake each week to 'cover the tender', i.e. the members of the syndicate will if necessary take up all the bills the Treasury offers for sale. (The discount houses are of course able to oblige the Treasury in this fashion only because of the privilege they enjoy of unquestioned access to the Bank of England.)

[7] The discount houses can always discount their Treasury Bills and prime quality commercial bills at the Bank, and can also use both these bills and short bonds as collateral for borrowing from the Bank. The discount houses hold a small amount of assets of other kinds than those just mentioned, but these cannot be monetized in the same way.

[8] Bank Rate is not officially a maximum rate for accommodation at the Bank, but is such in practice. The Bank may also provide cheaper accommodation, through the Special Buyer (see page 78).

[9] But not short bonds, since the discount houses cannot count on reselling them to the Bank, but only on using them as collateral for their borrowings from the Bank. Thus the ability of the discount houses to take more short bonds is limited by their own holding capacity, which is usually taken to be about 10 times their own capital resources.

TABLE 4

*English Joint Stock Banks**

Liabilities and Assets at the end of 1957

LIABILITIES	£ million	ASSETS	£ million
Equity	150	Coin, Bank Notes and Balances with the Bank of England	600
Current Accounts	3,780	Money at Call and Short Notice†	530
Deposit Accounts	2,740	Bills Discounted	1,540
		Investments (mainly bonds)	2,050
		Advances to Customers	1,880
		Other Assets	70
	6,670		6,670

* Namely:

Barclays Bank, Ltd	Lloyds Bank, Ltd	National Provincial Bank, Ltd
Coutts & Co.	Martins Bank, Ltd	Westminster Bank, Ltd
District Bank, Ltd	Midland Bank, Ltd	Williams Deacon's Bank, Ltd
Glyn Mills & Co.	National Bank, Ltd	

† This item consists mainly of advances to discount houses.

TABLE 5

*Australian Trading Banks**

Average of Liabilities and Assets, March 1946

LIABILITIES	£A million	ASSETS	£A million
Equity	(100)	Cash (coin, bullion, notes and demand deposits with Commonwealth Bank)	41
Deposits not bearing interest	418	Treasury Bills	74
Deposits bearing interest	218	London Funds	(27)
		Special Accounts with Commonwealth Bank	249
		Government and Municipal Securities	121
		Advances	210
		Other items (premises and debts due from other banks)	(14)
	736		736

* The Commonwealth Bank, General Banking Division (now the Commonwealth Trading Bank of Australia) and several minor commercial banks are not included in the above table.

The bracketed figures in the table are estimates, kindly supplied by Professor H. Arndt.

CHAPTER 10

THE MONETARY SECTOR

The Monetary Sector of the British Economy

As we have just seen, the Bank of England has a particularly close relationship with three categories of customers: the joint stock (i.e. commercial) banks, the central government (and its agencies), and the discount houses. The British savings banks also enjoy, via the government, a particularly close relationship with the Bank, since the investment of all the funds of the Post Office Savings Bank and of a very high proportion of the funds of the Trustee Savings Banks is in government securities on the government's responsibility.[1] There is thus a prima facie case for grouping together the Bank itself, the joint stock banks, the discount houses, the savings banks and the central government. This case is strengthened by the following considerations:

1. Almost all the obligations which we have classified as 'liquid' (see page 27) are the liabilities of these five categories of institutions.
2. As we have already seen, the last four of the five categories of institutions enjoy privileged access to the first, i.e. to the Bank of England, in case of need.
3. The arrangements between the institutions are such that the public can switch freely as between their various liquid liabilities. (See page 72.)
4. The interest rates paid on these various liabilities are in most cases subject *de facto* to direct central control. (See Chapter 11.)

For all these reasons it is appropriate to consider the five categories of institutions as a single group, which we can conveniently label 'the monetary sector' of the British economy. It is also convenient to have a label for the dominant institutions of the monetary sector, the government and the central bank, so (following common usage) we can call them 'the monetary authorities', or more briefly just 'the authorities'.

We can also conveniently introduce a third label. The liabilities of the separate institutions within the monetary sector are held in part by other institutions within this sector (as when Treasury

[1] The Trustee Savings Banks do, however, enjoy a certain degree of latitude in the investment of funds deposited with their 'special investment departments'.

Bills are held by the joint stock banks or the discount houses) and in part by individuals or institutions outside this sector. Such individuals and institutions, whether located in Britain or overseas, we may henceforth refer to collectively as 'the public'. (Thus every individual or institution holding sterling assets is taken to be included either in 'the monetary sector' or in 'the public'.)

The Liabilities of the Monetary Sector

Let us consider the liquid sterling assets of the public, thus defined. For this purpose we need a consolidated statement of the liabilities of the monetary sector *as a whole* to the public, i.e. a statement that omits all indebtedness within the monetary sector itself. Such a statement (admittedly highly approximate in the case of some of the items shown) is set out in Table 6.

All the items listed on the left hand side of Table 6 are highly liquid, with the exception of the last, the government's bonded debt[2] held by the public. Bank notes (a liability of the Bank of England) and demand deposits (a liability of the joint stock banks) comprise money in the strictest sense, in that they are in general use for making payments. Time deposits (also a liability of the joint stock banks) are withdrawable on only seven days' notice. Savings bank deposits[3] are withdrawable at ten days' notice and in certain cases on demand. Sums lent to discount houses are recallable at very short notice, frequently one day. Savings Certificates and Defence Bonds[4] (both liabilities of the government) are cashable at very short notice, though at some sacrifice of yield. Treasury Bills mature in three (sometimes two) months and are in any case eligible for rediscount at the Bank of England.

Thus, in the absence of default, the quick liabilities of the monetary sector are either money proper or can always be turned into money with very little delay and very little loss. Moreover (and more important) the absence of default is in practice always assured, owing to the nature of the relationships between the Bank of England and the other institutions in the monetary sector.

[2] I.e. all kinds of government obligations except Treasury Bills and securities which are convertible into cash on demand or at short notice.

[3] Most of the statements in this article about savings bank deposits do not apply without qualification to sums deposited in the 'special investment departments' of the trustee savings banks, but such sums represent only about one-tenth of total savings bank deposits.

[4] Also the recently introduced Premium Savings Bonds, and all other securities on Post Office Register.

TABLE 6

Consolidated Statement of the Approximate Sterling Liabilities of the Monetary Sector of the British Economy, at end 1955, set beside the Appropriate Balancing Items

	£000 million			£000 million
*Liabilities of Banks**			*Balancing Items*	
Bank Notes	1·7		Advances	1·9
Demand Deposits ..	4·0		Commercial Bills . .	0·3
Time Deposits ..	2·3			
Savings Bank Deposits	2·7		Commercial Credit ..	2·2
Discount Houses' Debts to 'the Public' ..	0·5			
		11·2		
Non-bank-held National Debt				
Saving Certificates and Defence Bonds† ..	3·5		National Debt§ .	23·0
Treasury Bills ..	1·5			
Government Bonds ..	9·0			
		14·0		
TOTAL		25·2		25·2

* Including the discount houses.

† And all other securities on Post Office Register.

§ The face value of all the sterling debts of the British government, excluding government securities held by the National Insurance Fund and the Exchange Equalization Account.

The only other important category of sterling obligations that is at all comparable in liquidity with the liquid liabilities of the monetary sector is that comprising the deposit and share liabilities of building societies,[5] and even these must be graded appreciably lower in liquidity, since such societies, though in most cases of the highest financial standing, do not enjoy that unusually ready access to central bank cash which characterizes the institutions that we have taken to comprise the monetary sector.

The Volume of Liquid Assets

What determines the total amount of the liquid assets made available by the monetary sector to the public? To answer this question we should refer to Table 6. From this table

[5] Building societies operate by selling shares to, and accepting deposits from, the public for the purpose of investing in property mortgages, usually *house* property mortgages. The shares of building societies are quite unlike the shares issued by companies, in that they are, like deposits, repayable at short notice.

we see that part of the consolidated liabilities of the monetary sector consists of securities forming part of the National Debt: such securities account for £14 billion of the total of £25·2 billions shown on the left hand side of the table. The difference between these two figures (i.e. £11·2 billions) consists of liabilities of the banks, which are balanced[6] by assets in the form of commercial credit (£2·2 billions) and of securities forming part of the National Debt (£9 billions). Thus the consolidated liabilities of the monetary sector (£25·2 billions) are balanced by the following items:

	£ *billion*
Commercial Credit[7]	2·2
National Debt	
(i) held by banks[8] within the monetary sector	9·0
(ii) held outside the monetary sector	14·0
	25·2

Moreover, any increase in any of these items shown on the right hand side of Table 6 results inevitably in a like increase in the consolidated total of liabilities shown on the left hand side of the table. That this should be true of the two items 'Advances' and 'Commercial Bills' will occasion no surprise, since any increase in their total implies an extension of credit by the Bank of England or the joint stock banks (either to the discount houses or to some borrower outside the monetary sector) and we saw in Chapter 9 that such an extension of bank credit generates a like amount of demand deposits. Moreover, this consequence of an increase in bank credit is equally operative when the increase takes the form of purchases by the banks of government securities—i.e. of an increase in bank-held National Debt. Thus any addition to the National Debt must, if the addition goes to the banks, generate a like increase in demand deposits, while if the addition does not go to the banks it must appear in the total of items shown under the heading 'Non-bank-held National Debt'.

The foregoing paragraph accounts for the total of the consolidated liabilities of the monetary sector to the public: from this

[6] That they balance *exactly* in Table 6 is due to rounding, for this table omits certain minor items in the balance sheets of the central and joint stock banks (see Tables 2 and 4).

[7] Commercial bills held by the Bank of England, the discount houses and the joint stock banks, plus the joint stock banks' advances to customers.

[8] Including the discount houses as 'banks'.

total has now to be deducted (if we want to account for the public's holding of *liquid* assets) the outstanding amount of government bonds[9] which the monetary sector has been able and willing to sell to the public.

Switching between Liquid Assets

The liabilities to the public (other than demand deposits) of the banks and discount houses (see the left hand side of Table 6) come into existence almost exclusively at the expense of a corresponding reduction in *demand deposits.* We have already seen how the public can switch at will from demand deposits to bank notes or time deposits. The former operation is not subject to the control of the monetary authorities at all; the latter can, if the authorities think it desirable, be encouraged by higher rates of interest on time deposits or discouraged by lower rates, but even so the initiative clearly lies with the public. The public can with equal freedom switch back from notes to demand deposits or, on giving due notice, from time deposits to demand deposits. The public is also quite free, subject to the laws governing maximum individual holdings, to switch from money (whether demand deposits or notes) into savings bank deposits, or back again at short notice. If, for instance, the public switches £100 from demand deposits to savings bank deposits, the usual outcome is that the government borrows £100 more from the savings banks and thus needs to issue £100 fewer Treasury Bills; hence the discount houses, in covering the tender,[10] have to take up £100 fewer bills and therefore require less accommodation from the Bank of England or the joint stock banks. In the latter case, the outcome would be as follows:[11]

[9] The final item on the left-hand side of Table 6.

[10] See the last paragraph of ch. 9.

[11] The reader is invited to work out for himself what would happen if the discount houses got their accommodation from the Bank of England.

—	LIABILITIES		ASSETS	
The Savings Banks	Savings Deposits	+100	Government Securities	+100
The Discount Houses	Loans from the joint stock banks	−100	Treasury Bills	−100
The Joint Stock Banks	Demand Deposits	−100	Loans to discount houses	−100
The Government	Securities issued:			
	(i) held by the discount houses	−100	(no change)	
	(ii) held by the savings banks	+100		
Monetary Sector as a whole	Demand Deposits	−100	(no change)	
	Savings Bank Deposits	+100		

There remains one further possible switch that the public might wish to make as between the liabilities of the banking institutions of the monetary sector: a switch into loans to the discount houses. Here again the public is quite free to make such loans by drawing on its demand deposits: when this happens there is a simple compensating change within the monetary sector, in that the discount houses now need to borrow that much less from the joint stock banks.

The public is free to switch not merely between demand deposits and the other liabilities of the banking institutions of the monetary sector; it can also switch between demand deposits and Savings Certificates or any of the other liquid liabilities of the government. If the public wants to acquire more Savings Certificates or Defence Bonds, this simply means that the government needs to issue fewer Treasury Bills; hence discount houses will need to take up fewer Treasury Bills when they 'cover the tender'; hence they will need less accommodation from the central and joint stock banks. Thus the consequences of the switch are, in tabular form, as follows:

—	LIABILITIES		ASSETS	
The Government	Savings Certificates	+100		
	Treasury Bills	−100		
The Discount Houses	Loans from the joint stock banks	−100	Treasury Bills	−100
The Joint Stock Banks	Demand Deposits	−100	Loans to discount houses	−100
Monetary Sector as a whole	Demand Deposits	−100		
	Savings Certificates	+100		

If the public[12] wants to switch into Treasury Bills, it cannot simply get them on demand, like Savings Certificates, but it can always obtain them by outbidding the discount house syndicate when the Treasury offers new bills for tender each week.[13] The opposite switch, out of Treasury Bills, can be effected by selling bills to a discount house, or by waiting for them to mature.

There remains to consider the final item on the left hand side of Table 6, *government bonds*. Government bonds get into the hands of the public on the initiative, not of the public, but of the monetary sector. The public as a whole has the opportunity of switching from money into government bonds only when the government invites subscriptions to a new issue or when the institutions of the monetary sector choose to sell bonds from their existing holdings. Moreover, the reverse switch from bonds to money can be done by the public only when the monetary sector chooses to make open market purchases or when bonds fall due for redemption. These remarks apply, of course, only to switches by the public as a whole; an individual member of the public can switch between money and bonds by finding another member of the public who is prepared, at a mutually acceptable price, to switch in the opposite direction, and transactions of this sort are the day-to-day business of the stock exchanges.

Australia

So far in this chapter we have been considering only the monetary sector of the British economy, but much the same applies in Australia. If a calculation, similar to that shown in Table 6, is made for the Australian monetary sector, the outcome is a table showing the liabilities incurred in Australian pounds (in practice the *home* liabilities) of the monetary sector of the Australian economy, considered as a whole. Table 7 is an attempt at such a statement, though the actual figures must be treated with the greatest caution:

The only significant differences between Table 7 and the corresponding British table (Table 6) arise from the absence of any discount houses in Australia, from the lack of any public issue of Australian Treasury Bills, and from the holding of the international

[12] It will be remembered that we have defined 'the public' to include overseas holders of sterling assets. Many British Treasury Bills are held by overseas owners.

[13] The considerations that determine the terms of the syndicate's bid are discussed in ch. 11.

reserve by the central bank instead of, as in Britain, by a government agency (the Exchange Equalization Account).[14]

TABLE 7

Home Liabilities of the Australian Monetary Sector, mid-1946

LIABILITIES		BALANCING ITEMS	
	£A *million*		£A *million*
The Public's holding of:		Bank Advances and Commercial Bills held by the Banks	230
Bank Notes	180		
Demand Deposits	440		
Time Deposits	230	International Reserve of the Commonwealth Bank	220
Savings Bank Deposits	650		
Savings Certificates	50	Net Government Indebtedness at home	2,000
Government Bonds	800		
Miscellaneous items not included elsewhere	100		
	2,450		2,450

Conclusion

Let us now try to summarize briefly the relationships between the various items in Tables 6 and 7:

1. The granting of advances by the commercial banks and the purchase of commercial bills, gold or overseas assets by the central or commercial banks or the discount houses result in an equivalent increase in demand deposits held by the public.

2. Government borrowing from the central or commercial banks or the discount houses likewise results in an equivalent increase in demand deposits held by the public.

3. The public can switch freely as between various liquid assets which are the liabilities of the monetary sector.

4. The public as a whole cannot switch from demand deposits into government bonds except on occasions of a public issue, or when the monetary sector makes open market sales from its holding of bonds. Nor can the public as a whole switch back from bonds into demand deposits except when the bonds are redeemed or when the monetary sector makes open market purchases. However, since government bonds are highly marketable, an individual member of the public can switch from money to bonds by finding someone else who is prepared to do the reverse switch.

[14] If Australia copied the British arrangement, the Australian government would have to issue Treasury Bills to the Commonwealth Bank in exchange for the sterling and gold reserves held by the latter; this would in no way affect the Australian public, but 'Net Government Indebtedness at home' would be increased by the amount involved and 'International Reserve of the Commonwealth Bank' would disappear as a separate item in Table 7.

CHAPTER II

SHORT-TERM RATES OF INTEREST

The Control of Short-term Rates

IN BRITAIN AND AUSTRALIA, the rates of interest on many short-term obligations, including virtually all liquid obligations, are in effect determined at the discretion of the country's monetary authorities (the government and central bank, acting in concert). These far-reaching powers can be exercised by the authorities in each of the two countries owing to the fact that the following two conditions are fulfilled. *First,* the government and central bank have the necessary authority to influence their satellites, the commercial and savings banks, as to the rates of interest they should allow to clients offering deposits, or demand from clients seeking to obtain overdrafts or to have bills discounted. *Second,* the monetary sector, considered as a whole is virtually the sole *ower* or *issuer,* or alternatively the sole *holder,* of very many of the obligations which can be classed as money or short-term promises of money.

The latter statement can be verified by referring back to Tables 6 and 7 on pages 70 and 75. It will be seen that (apart from small coins) all the money held by the public, whether as bank notes or as demand deposits, is a liability of the monetary sector. It will also be seen that the other liquid assets most familiar to the general public—such as time deposits, savings bank deposits and Savings Certificates—are also all liabilities of the monetary sector. On the opposite side of the tables, bank advances are of course exclusively the assets of the monetary sector. As for bills, the remaining short-term obligation in Tables 6 and 7, the situation is somewhat different as between Australia and Britain. In Australia there are no specialist discount houses, and Treasury Bills are not issued to the public. Consequently the only bills with which the Australian public is concerned are commercial bills, which are either held by the drawer till maturity, in which case they are in effect a form of trade credit, or alternatively are discounted at the commercial banks. Hence in Australia bills which are discounted are almost exclusively liabilities to the public and assets to the monetary sector, as shown in Table 7. In Britain the situation is more complicated, for there the monetary sector not only holds commercial bills as assets, as in Australia, but it also issues bills (Treasury Bills) to the public and thereby incurs them as a liability.

The Yields on Liquid Sterling Obligations

Table 8 sets out the yields quoted by the British monetary sector to the public in April 1957. How were the yields determined?

The zero yield on bank notes does not call for any explanation. The zero yield on demand deposits is in conformity with instructions issued by the monetary authorities to the joint stock banks. The time deposit rate is settled by the convention that so long as Bank Rate is at least 3 per cent, the time deposit rate is 2 per cent below this Rate. The terms offered on deposits at savings banks[1] and on Savings Certificates, Defence Bonds and Premium Savings Bonds are simply settled by the Treasury and announced by the Chancellor of the Exchequer. Thus none of these rates is a free market rate.

The rates paid by discount houses on loans provided by sources outside the monetary sector are genuinely free market rates,[2] but the amount of these loans is only a small part of the total of liquid assets made available by the monetary sector to the public (see Table 6).

TABLE 8

Effective Yields on Liquid Sterling Obligations, April 1957

Type of Liquid Obligation	*Effective Yield*
Bank Notes	Zero
Demand Deposits	Zero
Time Deposits	3 per cent
Savings Bank Deposits	2½ per cent (tax free for first £600 of the deposit)*
Discount Houses' Debts to the Public	Free rate
Savings Certificates	Redemption yield of 4½ per cent, tax free
Premium Savings Bonds	Interest at 4 per cent paid annually into a prize fund, to finance the payment of tax-free prizes
Defence Bonds	4½ per cent interest, plus a tax-free capital gain, giving a redemption yield over 10 years corresponding to 5¼ per cent to a holder subject to income tax at the standard rate of 42 per cent
Treasury Bills	Market rate

* The trustee savings banks are free to offer higher interest rates on funds deposited with their 'special investment departments'.

[1] Other than deposits in the 'special investment departments' of the Trustee Savings Banks.

[2] A large amount of the funds used by the discount houses comprise call money borrowed *within* the monetary sector, mainly from the joint stock banks. See ch. 9.

The Bill Rate

The Treasury Bill rate is described in Table 8 as a market rate, but it has not always been a *free* market rate, and even now it is free much more in appearance than in reality. During the Second World War, and throughout the post-war period until the fall of the Labour government in 1951, the Treasury Bill rate was effectively pegged (initially at approximately 1 per cent and later at approximately ½ per cent) by official intervention. The technique of this intervention was briefly as follows:

1. The discount houses undertook to 'cover the tender' of Treasury Bills, as they still do (Chapter 9).
2. The Treasury commonly offered for tender sufficient bills to ensure that the discount houses would not be able to pay for all the bills they had to take up, unless they or the joint stock banks obtained accommodation from the Bank of England.
3. The Bank always provided such accommodation, to whatever extent it was needed, by instructing its agent, the so-called Special Buyer,[3] to buy on its behalf the necessary amount of old Treasury Bills (preferably ones within several weeks of maturity) from the discount houses and joint stock banks.

Under this regime of 'the ever open back door', the ruling rate on Treasury Bills was inevitably the rediscount rate quoted by the Special Buyer, plus the profit margin of the discount houses, which at that time was very small (about 1/32 per cent).

The modification made by the Conservatives to the pegging arrangements just described is that the back door has not been 'ever open', so that the discount houses have had from time to time (and in some periods continuously) to borrow part of their requirements from the Bank at the 'front door', i.e. by paying Bank Rate.

In these new circumstances it might be expected that at times when the financial requirements of the discount houses have to be met, even if only marginally, by borrowing at Bank Rate, the bill rate would rise forthwith to this Rate, and perhaps even a little higher. In practice, however, the discount houses have been prepared to take account of the cost of their finance at its average rather than its marginal rate, or (more exactly) to strike an arbitrary compromise between the average rate and the marginal rate. The

[3] The Special Buyer is in practice one of the discount houses, Seccombe, Marshall and Campion Limited.

cheapest source of funds to the discount houses is the call money they obtain from the joint stock banks: this is obtained on conventional terms which now correspond to about 1½ per cent less than Bank Rate.[4] The dearest source of funds is from the Bank at Bank Rate. Funds obtained from outside the monetary sector and help afforded by the Special Buyer are both at least as dear as call money from the joint stock banks but are not dearer than Bank Rate.[5] Thus the average cost of funds to the discount houses is always appreciably below Bank Rate, even when the market is in the Bank,[6] and may be as much as 1½ per cent below Bank Rate when the market is not in the Bank.

In these circumstances, it would seem:

1. that the marginal cost of funds to the discount houses is either the Special Buyer's rate or Bank Rate (both being fixed by the Bank) and that which of these rates is the operative one depends on how many bills the Bank instructs the Special Buyer to buy;
2. that the average cost of funds to the discount houses depends on the terms charged by the joint stock banks on their call money (these terms being geared to Bank Rate), on Bank Rate (if the market is in the Bank), on the Special Buyer's rate, and on various free rates which are in practice fairly closely related to the discount houses' marginal cost of borrowing.

The market rate on Treasury Bills being a compromise between the marginal and the average cost of funds to the discount houses, plus the discount houses' profit margin, it would seem that this market rate is determined within narrow limits by factors directly controlled by the Bank of England, namely:

1. Bank Rate.
2. The Special Buyer's terms.
3. The scale of the Special Buyer's purchases.

[4] The nature of the convention by which these terms are settled has changed slightly from time to time. From the end of 1951 until January 1955 the call rate with the usual collateral (Treasury Bills) was either 1½ or 2 per cent below Bank Rate. As from January 1955, however, call money from the joint stock banks has been supplied in two tranches at differing rates. The present arrangements, which date from the reduction of Bank Rate from 5½ to 5 per cent in February 1957, provide for a rate of 1¾ per cent below Bank Rate on the first tranche and such a rate on the second tranche as is necessary to secure (on both tranches together) an average rate of about 1½ per cent below Bank Rate. For further details, see *The Banker*, March 1957, p. 138.

[5] Except very occasionally and for very small amounts. (The reasons for this are that the Bank does not usually lend for as short a period as one day, or after 2.30 p.m.)

[6] I.e. when the discount houses are having to get accommodation at the Bank's 'front door', which involves paying Bank Rate.

It is for these reasons that the market rate on Treasury Bills cannot reasonably be classed as a free rate; indeed it would not be far from the truth to describe it as still an officially pegged rate, though now with a variable peg in place of the fixed peg in force prior to the fall of the Labour government in 1951.

The Yields on Liquid Obligations in Australia

In Australia, as in Britain, the yield on bank notes and demand deposits is *nil,* and the rates on time deposits, and on savings bank deposits, Savings Certificates and other media for small savings are in practice settled by the authorities. Apart from these obligations, there are no other liquid liabilities of the Australian monetary sector (taken as a whole), for there are in Australia no discount houses, nor is there outside the monetary sector any market for Treasury Bills.

The Objectives of Monetary Policy

Given then that the monetary authorities in both Britain and Australia are able to determine the interest rates on virtually all liquid obligations held by the public, on what basis are these rates fixed? As a preliminary to answering this question, let us consider briefly the objectives which are, or may be, pursued by the monetary authorities, in so far as these objectives can be attained by manipulating interest rates not only on short-term but also on long-term obligations.

The first possible objective is to influence the flow of net overseas borrowing or lending, particularly with a view to avoiding erratic capital movements, which greatly complicate the problem of maintaining stable exchange rates with overseas currencies. Nowadays, in both Australia and Britain, the monetary authorities seek to reduce erratic overseas capital movements by exchange controls on capital transactions; nevertheless they have sometimes had in addition to use high interest rates to deter excessive lending overseas and low interest rates to deter excessive borrowing overseas.

The second objective is to minimize the interest burden of the government's debt. As can be seen from Tables 6 and 7, the monetary sectors in both countries, and more particularly the governments of the two countries, are on balance borrowers on a large scale in terms of the home currency; hence the powers that be

have a strong incentive to favour *low* rates of interest in the home country, for low rates of interest ease the load on the taxpayer.

The third objective is on the one hand to stimulate business activity at times of widespread unemployment, and on the other to reduce excess demand[7] for goods and services at times of full employment. This objective calls for low interest rates in the former circumstance, aimed at stimulating material investment, and high rates in the latter, aimed at discouraging material investment. The efficacy of changes in interest rates in affecting material investment will be considered in Chapter 19, so that all we need note here is that the efficacy of changes in short-term rates would prima facie seem to be far less than that of similar changes in long-term rates.

The fourth objective is to prevent an excessive expansion in the volume of liquid assets in the hands of the public, for a large volume of such assets held by the public has the effect of making more serious the danger of a runaway fall in the purchasing power of money at a time of full employment. This fourth objective requires that the monetary authorities should either avoid action which has the effect of creating additional demand deposits,[8] or, if such action has to be taken, should subsequently persuade the public to exchange these deposits (or other liquid obligations) for less liquid obligations, namely, government bonds. The public are more willing to part with their liquid obligations if these are rendered less attractive by having low rates of interest, and thus in this respect there is no conflict between objectives two and four. However, if members of the public are to be induced to switch from liquid to less liquid assets, they need not only the stick of low rates on the former but the carrot of high rates on the latter.

The fifth and last objective to be considered is to encourage thrift, particularly among poorer people, both for social reasons and, at times of high employment, to restrict purchases of goods and services. This objective has been promoted by providing for the benefit of 'small savers' special obligations—particularly savings bank deposits and Savings Certificates—which provide an attractive combination of liquidity and yield.

[7] The question of excess demand will be considered in ch. 21.

[8] It will be recalled from ch. 10 that the causes of an increase in demand deposits are:
(a) purchases of government securities by the banks.
(b) the granting of advances or the purchase of commercial bills by the banks.
(c) in Australia, the acquisition of international reserves by the banks.

Monetary Policy and Short-term Obligations

In considering the general objectives pursued by the monetary authorities of Australia and Britain, we have incidentally gone most of the way to understanding the basis on which these authorities fix the rates of interest on liquid obligations. Bank notes and demand deposits are the most liquid of these obligations, and hence, in accord with objectives two and four, carry no interest. Obligations specially designed to encourage small savers need to be made sufficiently attractive for this purpose, whether through bearing an appropriate rate of interest or by enjoying tax concessions. The remaining liquid obligations present something of a dilemma, in that in many circumstances objectives one or three may call for high rates while objectives two and four call for low rates; consequently, it is not to be expected that there should be a demonstrably *correct* pattern of interest rates appropriate to the circumstances prevailing at any one time.

CHAPTER 12

THE BOND RATE OF INTEREST

The Supply of Liquidity

WE HAVE SEEN in the previous chapter that the monetary authorities, both in Australia and Britain, can and do control, directly or indirectly, the rates of interest on the liquid obligations which the monetary sectors of the two economies make available to the public to hold as assets. Are the monetary authorities likewise able to control the rates of interest[1] on the remaining type of liability of the monetary sectors, namely bonds? It is clear, of course, that in neither country is the monetary sector the sole issuer of bonds, so that the monetary authorities cannot *fix* bond rates as they do the rates on, say, time deposits. But could not the institutions in the monetary sector intervene to support the bond market as they do in Britain to support the bill market, and thereby hold the bond rates at whatever level was from time to time deemed appropriate? The answer is that such a policy could be pursued without any technical difficulty, so that the case for its adoption turns solely on whether it would further the aims of the monetary authorities.

The adoption of this policy would mean in effect that the public as a whole would be permitted to switch freely as between demand deposits and government bonds, just as it is permitted to switch freely as between demand deposits and time deposits. If, therefore, at any time the public's tastes changed in the direction of an increased preference for demand deposits as against bonds, the authorities would have to acquiesce in an increase in the public's holding of liquid assets; and conversely, if the public's tastes changed in favour of bonds, the monetary sector would have to make more bonds available to the public, thereby cancelling an equivalent amount of liquid obligations. What can be said as to the desirability of this policy? To begin with, it is a policy which at best is desirable only within limits, for no responsible monetary authority would asquiesce in the indefinite 'monetizing' of the monetary sector's liabilities to the public; beyond a certain point the mounting potential danger to the purchasing power of money would be regarded as intolerable. However, within the boundary

[1] I.e. the yields, as defined in ch. 4. The present chapter is nowhere concerned with *nominal* rates of interest on bonds.

set by prudence there may be a case for official support of the bond market, designed to keep the yields on government bonds more or less constant. The assumption underlying this case is that low bond rates are the most important objective of monetary policy next to the need for preventing the public from becoming 'unduly' liquid. Granted this premise for the sake of argument, it then remains to be shown that fluctuations in bond rates have the effect of 'unsettling' investors and of making them less ready to hold bonds instead of liquid obligations, for anything that makes bonds less attractive to investors tends to depress bond prices and thus to raise bond rates. Now, as we shall see later, it *can* be plausibly argued that fluctuating bond rates are unsettling to many investors, so that there may be a good case in favour of official support to the bond market whenever bond rates would otherwise rise, and of a judicious withdrawal of support when bond rates are falling.

In practice, the market can be given official support in either of two ways. First, the government can redeem maturing issues not by issuing new bonds, but by issuing securities to the banks (or discount houses); this has the effect of reducing the public's holding of bonds and increasing its holding of demand deposits, thereby making bonds relatively scarcer, and tending to raise their prices and lower their yield. The opportunity for this first kind of support occurs quite frequently, for the bonded debts of the Australian and British governments are now so large and so varied in their maturities that redemptions fall due at comparatively short intervals. The second way of giving official support to the market is for the institutions in the monetary sector to buy government bonds on the stock exchange, paying for them with newly-created demand deposits. Such open market purchases can of course be made at any time, and have the effect of leaving the public with less bonds and more money, thus (as before) tending to reduce the bond rate. Likewise the withdrawal of official support from the bond market can be effected either by the government making new issues of bonds, or by the institutions in the monetary sector making open market sales of bonds. Thus the policy we have been considering requires that the government should skilfully time its new issues, confining them to periods of declining current bond rates, and that the monetary sector as a whole should buy bonds when rates are rising (that is, when prices are cheapening) and sell them when rates are falling.

Let us now go back to the assumption underlying the case for

the official 'management' of bond yields. The management of bond yields is recommended as a means of 'ironing out' fluctuations in these yields, mainly with the object of making bonds more attractive to investors, who would then be prepared either to hold more bonds at the old bond rates or to hold the same amount of bonds at somewhat lower rates of interest. Thus the case for official management of bond yields is based on the desirability of relatively stable and low bond yields. Low bond yields are particularly desirable during a trade depression, partly because they cheapen corporate borrowing and may thereby stimulate material investment, partly because they reduce the cost of government borrowing and so reduce the burden on the taxpayer. The latter objective is of course strictly applicable only at times when the government is making new bond issues, either to finance an excess of expenditure over receipts or to repay the holders of maturing bonds, but such times are (as we have seen) rather the rule than the exception nowadays.

When, however, the malady of business is not a deficiency but an excess of demand, the case for low bond rates is less overwhelming. Though the taxpayer's burden would almost certainly be increased by any raising of rates, many economists maintain that the modern armoury of direct controls on business activity (such as, for instance, the licensing of new building) still needs to be supplemented, at times of excess demand, with the weapon of dearer borrowing. Nevertheless, the practising politician, relying as he does on the taxpayers' votes, is not easily convinced of the need for deliberately engineering high bond rates.[2]

The compromise between cheap long-term borrowing on the one hand and limiting the public's holding of liquid assets on the other leads to a monetary policy along these lines: first, the monetary sector is set the task of supporting the bond market whenever the bond rates rise above a ceiling sufficiently in excess of the bill and time-deposit rates to make it unlikely that the public will ever want to make a dangerously large switch out of bonds into liquid obligations. Second, if events do not proceed according to plan and the public on some occasion does begin to switch on a dangerous scale out of bonds into liquid obligations, then the monetary sector is allowed to abandon its support of the bond market and let the

[2] It is, for instance, surely significant that when the Conservatives came to power in Britain in 1951, their decision to engineer a rise in short-term interest rates was not paralleled by a similar decision about the long-term bond rate.

bond rates rise. (Something of this kind seems to have occurred in Britain at the end of 1946, when Dr Dalton abandoned his drive for a long-term bond rate as low as 2½ per cent.)

The compromise policy described in the previous paragraph has the merit, from our point of view, that it can be summarized diagrammatically in the form of a *liquidity supply schedule.*

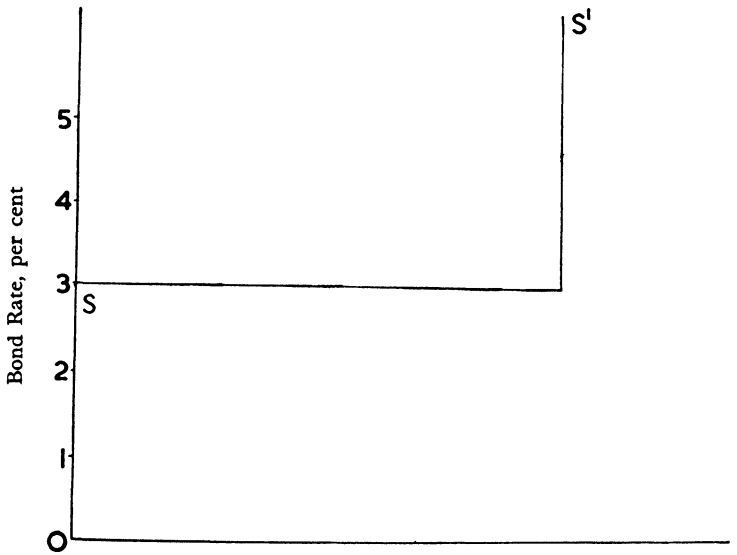


Figure 1—Liquidity Supply Schedule

This schedule, as shown in the diagram, implies that so long as less than a certain amount of its liabilities to the public are liquid, the monetary sector is prepared to allow members of the public to switch freely as between the liquid obligations they hold and bonds which yield, say, a steady 3 per cent; but that once the critical amount of liquid liabilities is exceeded the sector would allow the bond rate to rise rather than further increase its support to the bond market. If later on the authorities wanted the monetary sector to resume its support when the bond rate had increased to say, 4 per cent, the new state of affairs could be represented by a diagram like Figure 1, but with the horizontal portion of the liquidity supply schedule at a higher level.

It is here necessary to consider a possible criticism of Figure 1, namely that it refers to *the* bond rate, when in practice there may be different yields on government bonds of different maturities. Admittedly, the diagram *does* over-simplify the facts of the real world. However, the actual divergence between the yields on government bonds with maturities ranging from, say, eight years to perpetuity, is usually quite small. Human foresight being what it is, government bonds of different maturities in excess of eight years are regarded as such close substitutes, both by the borrower and by the lenders, that the difference of maturity does not lead to much difference in yield. We can therefore reasonably take the rate on, say, twenty-year bonds as typifying the rates on all long-term maturities, that is to say, maturities of any period of eight years or more. Nevertheless, it still remains a simplification to represent the monetary sector as offering the public only two broad types of obligations, liquid obligations and long-term bonds, for in many circumstances the optimum compromise between the desire to borrow cheaply and the desire to reduce the liquidity of the public's wealth may be an issue of, say, five-year bonds. The reader should therefore bear in mind this limitation of our simple diagram.

The Demand for Liquidity

We have now given some consideration to the relation between the long-term rate of interest on government bonds and the amount of liquid obligations which the monetary sector makes available to the public. Let us now consider the relation between the same rate of interest and the amount of liquid obligations which the public wants to hold. Unfortunately this second relationship is complicated by the fact that, from the point of view of the investor, government bonds are not the only alternative to liquid assets. Members of 'the public', as we are using the word, not only lend to the monetary sector, they also lend to each other. The *investing* public, consisting for the most part of private citizens, holds as assets obligations incurred not only by the monetary sector but also by the *borrowing* public, that is, by non-banking enterprises, as explained in Chapter 2. The obligations owed by such enterprises to the investing public, comprising as they do mainly loans, bonds, preference shares and equity, have in common with government bonds the characteristic of being long-term, but in many cases they differ from government bonds by being less marketable and less secure in yield. The difference is greatest in the case of equity,

which is clearly differentiated not only from government bonds but also from all fixed-interest obligations.

To facilitate our consideration of the investing public's preferences as between one long-term obligation and another, let us first split the genus *long-term securities* into three subdivisions, which to some extent inevitably shade off one into the other:

1. Fixed-interest quoted securities with little or no risk of default, or simply *bonds*. Bonds thus include government bonds and high class corporate bonds.
2. More risky fixed-interest securities, which for lack of a better term we can call *'prefs'*. Prefs thus include all quoted preference shares and the more risky quoted corporate bonds.
3. Quoted ordinary shares, or simply *ordinaries*.

In this and the following chapter we shall consider the implications, particularly as regards the yields on different types of securities, of the investing public's switches, actual and potential, between liquid obligations and each of the above three types of long-term securities. We shall, in other words, be concerned solely with the public's views about the desirable *composition* of the stock of its wealth *at any one time*,[3] and shall defer until Chapter 22 any consideration of the effect on yields of the increase in the total stock of wealth which occurs *over a period of time*, mainly as the result of 'loan expenditure' by enterprises and the government.

In considering the public's demand for liquid obligations, the first of the four major types of assets, we shall proceed on the simplifying assumption that the members of the public who at any time hold liquid assets regard bonds as the only worth-while alternative, and never seriously consider the possibility of switching between liquid assets and shares, whether prefs or ordinaries. The fact that these last two categories of securities are less nearly liquid than bonds makes them prima facie less suitable alternatives to liquid assets than bonds are, so that our assumption has considerable prima facie plausibility, at any rate as a first approximation. Nevertheless it is no more than a first approximation, and must be accepted as such.

On the basis then that the public's choice is between liquid assets on the one hand and bonds on the other, it is plausible that the lower the yield on the alternative asset, that is to say, the lower the bond rate of interest, the greater is the amount of liquid assets

[3] Or in a period so short that any additional wealth created must be small in relation to that already in existence.

demanded. This relationship can be represented diagrammatically as a downward sloping *liquidity preference schedule,* as is shown in Figure 2 below. The thesis that the public's liquidity preference

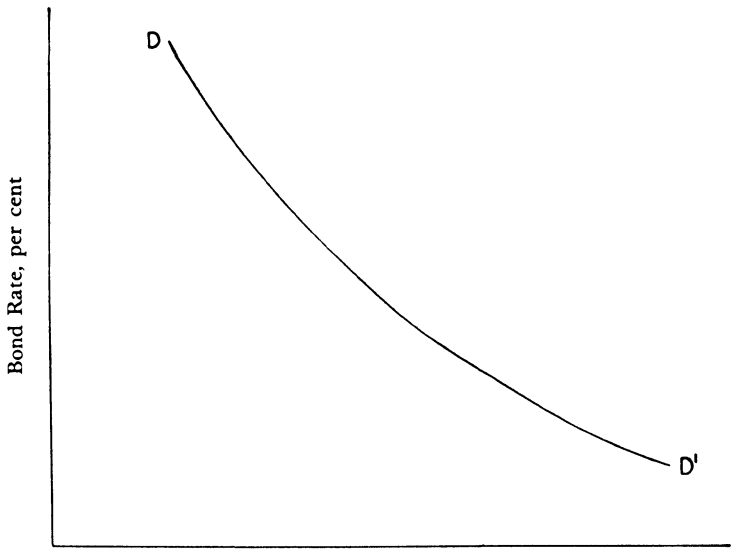


Figure 2 -Liquidity Preference Schedule

schedule corresponds to a curve of the same general shape as DD[1] can best be defended by considering on what basis different members of the public choose their assets. First, if the bond rate were appreciably lower than the expected future rate on time-deposits (or, in Britain, on eligible bills), virtually no one would prefer bonds to liquid obligations and the demand for the latter would be enormous. If, however, the bond rate were rather higher and exceeded the time-deposit rate (and, in Britain, the bill rate) by at least a small margin, the income-seeking investor[4] would tend to switch from these short-term obligations into bonds, so that the public's demand for liquid obligations would be correspondingly reduced. Next, let us suppose that the bond rate is even higher. Then the margin between it and the time-deposit rate would be sufficient to tempt other investors to forsake some of their liquid assets in

[4] As described, p. 35.

favour of bonds, both because the higher income obtainable from bonds would help to offset the risk of capital loss and also because this risk would itself be less (in the eyes of many investors) the higher the yield (i.e. the lower the price) of bonds. For many investors probably have some notion, based on past experience, as to how low the price of bonds is liable to fall, so that the nearer the current price already is to this 'floor' the smaller any possible future fall is presumed to be. Thus in general we may reasonably expect that the higher the bond rate the less will be the public's demand for liquid assets in preference to bonds. Finally, if the bond rate were very high indeed, we can imagine that the only liquid asset which the public would want to hold would be money, and this only up to the minimum amount necessary for use as a means of payment.

The Equilibrium Bond Rate

If we now bring together the public's liquidity preference schedule and the monetary sector's liquidity supply schedule we get a diagram as shown in Figure 3. The vertical distance (QR) from the base line to the point of intersection (R) of the former

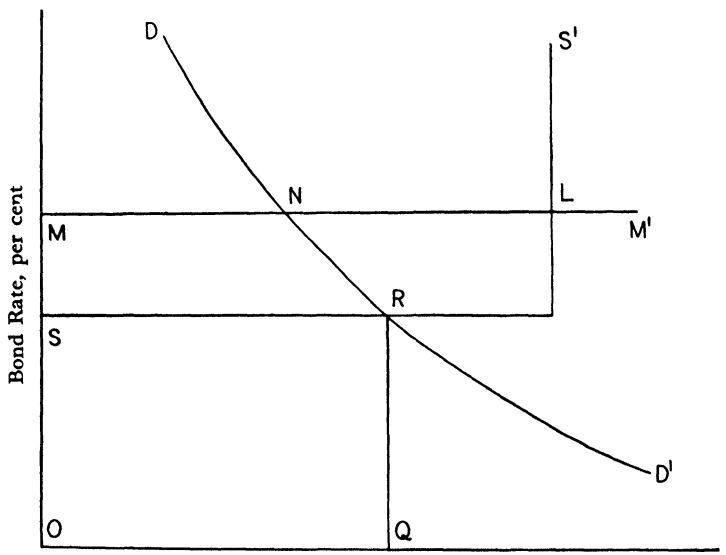


Figure 3—The Equilibrium Bond Rate

schedule (DD^1) and the latter (SS^1) then represents the *equilibrium* bond rate. This is the bond rate which leaves the public content with the present distribution of its assets as between liquid obligations and bonds, and the monetary authorities also content with this distribution. The significance of the equilibrium bond rate can be illustrated by supposing that on some day the stock exchange prices of bonds were such as to make the bond rate greater than QR. Let us say that the rate corresponded to the vertical distance (OM) of line MM^1 from the base line. At this high rate, according to our liquidity preference schedule, few investors would want to hold liquid assets, and the amount they would want to hold, together with the public's requirement for money as a means of payment, would correspond to the distance MN. On the other hand, at the same bond rate (OM) the monetary sector would be attempting to support the bond market to the extent of creating additional demand deposits until the volume of outstanding liquid obligations corresponded to the distance ML. Thus, if the ruling bond rate were OM, the public would be trying to hold more bonds and less liquid assets than the monetary sector was prepared to make available; the price of bonds would therefore rise, and would go on rising until the bond rate had fallen to the equilibrium level, QR. Likewise, if the ruling rate were *less* than the equilibrium level, the price of bonds would fall, and would go on falling until the bond rate rose to the equilibrium level.

How can Figure 3 be used to illustrate changes in the bond rate which are not merely temporary departures from the equilibrium rate but are changes in the equilibrium rate itself? A change in the equilibrium bond rate may be due either to a change in monetary policy, represented by a shift in the liquidity supply schedule SS^1, or a change in the investing public's tastes, represented by a shift in the liquidity preference schedule DD^1. The aspect of monetary policy which nowadays largely determines the shape and position of the former schedule is the compromise which the monetary authorities judge to be most appropriate between the objectives of (i) cheap borrowing, (ii) discouraging material investment at times of excess demand, and (iii) preventing a dangerous increase in the quantity of liquid assets held by the public. Not unnaturally the officials responsible for monetary policy change their judgments from time to time. If they decide to give more weight to (ii) as against (i), this corresponds to an upward shift of the horizontal part of the liquidity supply schedule, and vice versa. If they decide

to give more weight to (iii) as against (i), this corresponds to an alteration in the liquidity supply schedule whereby the curve turns upwards sooner, while the opposite change of policy would cause the schedule to turn upwards further to the right. Or, if their concern about (iii) leads them to think that, due to the liquidity preference schedule shifting to the right, it will soon become dangerous to support the market at the *present* bond rate, they can arrange a temporary withdrawal of support until the rate has risen to some particular higher level. Such a change of policy would again correspond to an upward shift of the horizontal part of the liquidity supply schedule; and vice versa if it were thought practicable and desirable to support the market at a *lower* rate than hitherto.[5]

Alterations in the other schedule in Figure 3, the public's liquidity preference schedule, might occur for a number of reasons. Thus an increase in the public's need for money as a means of payment, which would result in a shift of the liquidity preference schedule to the right, as illustrated in Figure 4, occurs whenever there is an increase in the general level of business activity and the general level of prices. If trade improves and prices rise, private citizens will get higher money incomes and enterprises will enjoy higher turnovers. Both, therefore, will need more money as a means of payment to bridge the interval between their increased receipts and their increased payments; that is, they will demand more liquid assets at any given bond rate of interest. How do the private citizens who now have higher incomes and the enterprises which now have higher turnovers get the additional money they need for use as a means of payment? Unfortunately we cannot answer this question here, but it will come up for consideration in Chapter 22. Suffice it to say that the individuals and enterprises concerned *can* increase their average holdings of money for transactions purposes, which corresponds to a shift of the liquidity preference schedule.

Another possible reason for an upward shift of the liquidity preference schedule, as illustrated in Figure 4, would be an increase, or an expected increase, in the yields obtainable on liquid assets, such as time deposits. Yet another possible reason for such an up-

[5] Other but less likely alterations in the schedule would occur:

(a) If the authorities made no attempt to 'iron out' fluctuations in the bond rate, but instead kept the quantity of liquid obligations absolutely constant. (This would correspond to a supply schedule consisting of a vertical straight line.)

(b) If the authorities decided to pursue a policy of cheap borrowing regardless of the consequences. (This would correspond to a supply schedule consisting of a horizontal straight line.)

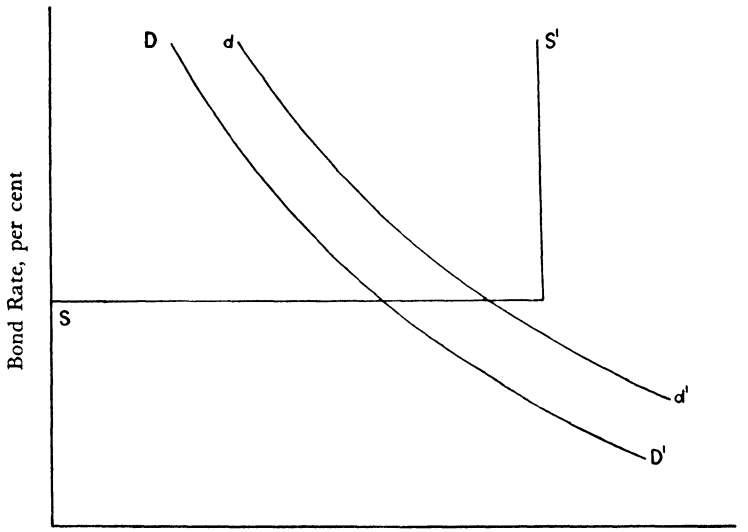


Figure 4—Changes in Equilibrium Bond Rate

ward shift might be an increase in uncertainty as to the course of the long-term rate in the future. This point can perhaps be made clearer by an example. Suppose that the time-deposit rate is ½ per cent per annum and is not expected to change, and that the yield on perpetual bonds is 2½ per cent. Then any investor preoccupied with keeping the money value of his capital intact is tempted with a bribe of 2 per cent per annum (less tax) to compensate the risk of capital loss on holding bonds. But this bribe is clearly not a very attractive one, at any rate to an investor whose tax-rate on additional income is high: quite a small rise in the bond rate would rob him of his additional income. For supposing that perpetual bonds with a 2½ per cent nominal rate of interest should fall in price from £100 to £91, corresponding to an increase in the yield from 2½ per cent to about 2¾ per cent, the capital loss would offset no less than four and a half years' additional income even if there is no income tax, and would offset eighteen years' additional income to an investor whose additional income is taxed at fifteen shillings in the £. Hence, if for any reason investors, fearful of a fall in the money value of their capital, become increasingly uncertain about the future course of the yield on bonds, they will

immediately want to hold fewer bonds and more liquid obligations at the *present* bond rate; thus the liquidity preference schedule will shift upwards.

The equilibrium bond rate, as we have seen, can be represented as the point of intersection of the liquidity preference schedule and the liquidity supply schedule, and may change by reason of a shift in either of these schedules. How much the equilibrium bond rate changes when either of the schedules shifts depends on the slope of the relevant part of the other schedule. Thus if for any reason the liquidity preference schedule shifted upwards, but the relevant portion of the liquidity supply schedule was horizontal, no change in the bond rate would result.

In Figure 4, the liquidity preference schedule shifts from DD^1 to dd^1, but since the relevant part of the liquidity supply schedule, SS^1, is horizontal, no increase in the equilibrium bond rate occurs. If, however, the relevant part of the latter schedule had been vertical instead of horizontal the effect on the equilibrium bond rate would have been considerable.

CHAPTER 13

SHARE PRICES AND YIELDS

THIS CHAPTER is concerned with the stock exchange prices and the yields of quoted securities other than bonds, that is, of prefs and ordinaries. What kinds of people buy and sell such securities on the stock exchange, and thereby influence their prices? In the case of the ordinaries, a proportion of each issue, frequently amounting to over fifty per cent of the total issue, can be presumed to belong to investors of the type we have called entrepreneur investors, who value their holdings mainly for the sake of maintaining control of the issuing companies. It is, however, rare for an investor or group of investors to get or relinquish control of a company by trading its share on a stock exchange. 'Controlling interests' are of course bought and sold on occasions, but usually through bargains in which the controlling shares change hands *en bloc,* at a price per share quite possibly differing considerably from the current stock exchange price for identical shares. Thus it would seem that the entrepreneur investor does not transact much of his business on the stock exchange and therefore normally plays a much less important part in determining stock exchange prices than do investors seeking income and capital gains.

The Pattern of Share Prices

On many stock exchanges, particularly those where facilities are offered for forward trading, transactions may be motivated as much by a desire for capital gain as by a desire for income. It is, however, only operations (actual or potential) motivated by the latter aim which lead to the emergence of a *rational pattern* of share prices on a stock exchange, and it is therefore interesting to consider how the prices of shares would be determined on an exchange on which income-seeking predominated. Let us first consider prefs. The income-seeking investor will always want a yield higher than the bond rate by an amount sufficient to compensate for the risk of default. The margin will be greater the less certain is the earning capacity of the issuing company and the the higher the gearing[1] of the company's capital. Moreover, the margin will be greater

[1] Defined in ch. 7.

during a trade depression, when an early default may be likely, than in a boom, when profits are more than adequate to meet fixed-interest charges. The margin will also be greater the higher the rate of income tax, the effect of which is to reduce the proportion of the margin available to the investor. The yield on some specific issue of prefs, if income-seeking were the sole aim of investors, would thus equal the bond rate plus the appropriate margin for risk, this margin depending on the financial standing of the company, the gearing of its capital structure, the phase of the business cycle, and on how much of the margin is taken in taxation.

This simple formulation of the relation between the yields on bonds and prefs will have to be elaborated, but before proceeding further, let us briefly consider ordinaries. If an investor is interested in the *income* he would get from holding a security, he will compare its yield with the bond rate of interest. Normally he will not wish to hold shares whose yield does not exceed the bond rate by a positive margin. He requires this margin because he normally prefers the stable and certain money income from bonds to the fluctuating and uncertain money income from ordinaries, and the greater the instability and uncertainty of the future income from the ordinaries the greater the margin he requires. He will also, as in the case of prefs, require a higher margin the greater his liability to taxation and the more he fears that trade is going to recede rather than improve. This last consideration is clearly of greater importance when he invests in ordinaries, the nominal rates of dividend on which are variable, than when he invests in prefs, the nominal rates on which are fixed except in cases of default. On the other hand (and here again ordinaries differ from prefs) the variable nominal rates of dividend on ordinaries makes them a suitable hedge against the risk of a fall in the purchasing power of money, so that at times when the risk of such an occurrence seems unusually serious, our investor will be prepared to accept a narrower, or even a negative, margin between the yield on ordinaries and the bond rate.

What we have so far failed to take into account, in discussing the 'margins' between the bond rate and the yields of different issues of shares (whether prefs or ordinaries), is that different investors will not necessarily demand the same margins. Investor A, on account of his large resources (which enable him to spread his risks), or his relatively small liability to taxation, or even his natural optimism, may not require as high a differential yield (compared

with the bond rate) on *any* issue of shares as investor Z requires, if Z's position is the reverse of A's in all relevant respects. Thus we need to ask: '*Whose* margins determine the current yields on shares? Are we to take the narrow margins required by A or the wide ones required by Z, or should we select those required by one of the other investors, B, C, D, . . . X and Y, whose margins range in ascending order from A's to Z's?' The answer to this question depends on the quantity of shares in existence and the amount of the resources available to each of the investors. If A, B, C, . . . L, M and N could between them hold all the shares in existence, it would then be N's margins which would be the effective ones; whereas if the combined resources of A. B. C, . . . L and M were sufficient, then M's would be the effective margins.[2] In the technical language of economics, the effective margins are those required by the investor at the *margin of substitution*,[3] the investor who, if there were a small reduction in differential yields, would be the first to switch out of shares into bonds.

The yield on some specific issue of shares, if income-seeking were the only motive for purchase, would thus be the current bond rate plus the appropriate margin, reflecting all the considerations detailed above, as evaluated by the investor at the margin of substitution between shares on the one hand and bonds on the other; that is to say, by the investor who, though holding shares now, would be the first to switch into bonds if the yields of shares fell in relation to the bond rate.[4]

[2] This argument can be readily adapted to cover the case of the investor who always holds some bonds and some shares, but in response to a higher differential yield would hold more shares and fewer bonds.

[3] The two uses of the word 'margin' are quite different. Thus the *margins* of the investor at the *margin* of substitution means the extra yields (over and above the bond rate) required by Mr N on different issues of shares, where Mr N is the investor who, among all investors who at present hold shares, has the least reluctance to switch back into bonds.

[4] I have assumed for simplicity of exposition that investors are unanimous as to the relative merits of different issues of shares. More precisely, I have assumed that Mr N requires a margin higher by a definite amount (say 0·1 per cent per annum) on each single issue of shares than is required by Mr M, and a margin lower by a definite amount (say 0·09 per cent per annum) on each single issue of shares than is required by Mr O. Thus if Mr N happens to be the investor at the margin of substitution between Alpha ordinaries and bonds he will also be at the margins of substitution between Alpha prefs and bonds, between Beta ordinaries and bonds, and so on. He will, moreover, necessarily be at the margins of substitution between each issue of shares and every other issue; for, on the assumption I have made, all shares (whether prefs or ordinaries) have the same relative attraction to all investors, so that *every* investor actually holding shares is on the margin of substitution between any one share issue and any other.

Thus far we have been seeking an explanation of the yields on prefs and ordinaries solely on the basis of the tastes of investors, all of whom are assumed to be seeking income rather than capital gains. On this basis the prices of prefs and ordinaries of all kinds would be bid up until the yield on each issue of shares exceeded the bond rate by a margin, usually positive, depending partly on the specific features of the issue concerned and partly on considerations affecting all shares alike. The main factor which would cause the yield of a particular issue to be less than average would be, in the case of prefs, an unusually low assessment of the risk of default or, in the case of ordinaries, an unusual degree of optimism concerning the future course of the nominal rate of dividend. The general level of share yields (compared with the bond rate) would, given the amount of shares in existence, depend mainly on the incidence of income tax and the prevailing view as to the future course of business activity. The differential yields on ordinaries (compared with the bond rate) are particularly sensitive to the latter factor, being much higher when profits are falling than when they are increasing. The differential yields on ordinaries are also, unlike those on prefs, reduced by the prospect of a fall in the purchasing power of money.

But income-seeking is not the only motivation of operators in the share markets. We have still to consider the consequences of the pursuit of capital gain—i.e. of 'speculation' in its broadest sense. If speculative operations were relatively unimportant in a share market, they would probably serve mainly to expedite the reactions of share prices to changes in the tastes of income-seeking investors. Speculators would make their profit solely by correctly predicting developments which would modify income-seeking investors' tastes and thereby influence current share prices. If, however, we consider a share market of the opposite kind, where the desire for capital gain, rather than income, is dominant, then it is likely that share prices will be determined to a considerable extent as the result of speculation. Speculative operations, in these circumstances, Keynes tells us, 'may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a

In practice investors are not unanimous as between the relative merits of different issues of shares: hence there would not be one and the same investor at the margins of substitution between all the different varieties of long-term quoted securities. However, the simplification I have adopted does not invalidate my argument, which merely requires that the investors at the various margins of substitution should all be income-seeking.

hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not the faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree when we devote our intelligences to anticipating what average opinion expects average opinion to be. And there are some, I believe, who practice the fourth, fifth and higher degrees.

'If the reader interjects that there must surely be large profits to be gained from the other players in the long run by a skilled individual who, unperturbed by the prevailing pastime, continues to purchase investments on the best genuine long-term expectations he can frame, he must be answered, first of all, that there are, indeed, such serious-minded individuals and that it makes a vast difference to an investment market whether or not they predominate in their influence over the game-players. But . . . it needs *more* intelligence to defeat the forces of time and our ignorance of the future than to beat the gun.'[5]

Thus to some extent the current prices of shares, whether ordinaries or prefs but particularly the former, are what they are because they are expected to be different in the near future, not because they entitle the holder to such-and-such an income (predicted with a greater or less degree of certainty) in the future.

There is one more point to be noted before we attempt a summary of our conclusions. The argument of this chapter has been on the assumption of a given amount of shares in existence. This assumption is not strictly true, partly because loan expenditure by enterprises steadily adds to both the supply of, and the demand for, corporate securities (a factor which can be ignored only if, as in both this and the previous chapter, we limit our argument to a comparatively short period), and partly because there is also the possibility, discussed in Chapter 7, of companies switching their liabilities from bonds to shares. As to the former, the consequences of loan expenditure by enterprises will be considered in Chapter 22; as to the latter, it will be recalled from Chapter 7 that there are serious difficulties in the way of switching liabilities from bonds

[5] *General Theory*, p. 156.

to shares, though sometimes the operation is feasible and if so might be induced by a low yield on a company's shares in relation to that on its bonds. In so far as switching of this kind is practised it has the effect of increasing the amount of shares in existence and thus of shifting the margin of substitution in the direction of investors who require a higher differential yield on shares. Hence there would be a tendency for the yields on shares to rise. The reverse switch, the retiring of shares by issuing new bonds, is usually impossible on legal grounds. Thus by and large our assumption of given amounts of shares in existence has not led us far astray, provided we realize that the argument so far is not intended to explain changes occurring over a long period.

Conclusion

In this and the two preceding chapters we have considered the factors determining the yields on money and other liquid obligations, and on bonds, prefs and ordinaries. Let us now ignore all points of detail, even when they may be of considerable importance, and bring together the threads of argument running through these chapters:

1. Demand deposits are put into the hands of the public by the action of the monetary sector. Such action may take the form of the acquisition of commercial bills or international reserves by the banks, the granting of advances by the commercial banks, or the purchase of government securities by the banks.
2. The monetary sector offers no interest on demand deposits, but allows the holders to switch freely (subject to restrictions on the maximum personal holding of certain obligations) into a variety of other liquid assets, which bear rates of interest (*nil* in the case of bank notes) fixed at the discretion of the monetary authorities.
3. The monetary sector also sells bonds to the public in exchange for demand deposits. With a given liquidity preference schedule, the further the monetary sector pursues the exchange of bonds for money the higher will be the bond rate of interest.
4. The authorities may think it advantageous for the monetary sector to stabilize the bond rate by issuing as many bonds as the public will absorb at some selected bond rate and on the other hand, *up to a point,* by buying bonds back rather than allow an increase in the bond rate. However, beyond a certain point the monetary authorities would have to stop the process, lest an excessive volume of liquid assets should get into the hands of the public. Once that critical point is reached and the public is no

longer permitted to switch from bonds to money, any further upward shift in the liquidity preference schedule has the effect of raising the bond rate.

5. Shifts in the liquidity preference schedule may occur for various reasons, but if the monetary authorities adhere to a policy of stabilizing the bond rate the result of such shifts is simply that the public switches freely as between liquid assets and bonds, the bond rate remaining unchanged.

6. Thus in the case not only of liquid obligations but also, in certain circumstances, of bonds, the yields are settled mainly by the issuers and owers of the obligations, that is, by the monetary sector, which achieves this end by accommodating any desire by the public to switch from one obligation to another (subject to the usual proviso about Savings Certificates and savings bank deposits). In so far as the public is free to switch its holdings, changes in the public's tastes have the effect of changing the composition of the monetary sector's liabilities, not of changing the yields of the different obligations.

7. But when we move on to prefs and ordinaries the picture is different. The issuers of long-term securities do not, and indeed in most cases cannot, readily switch their liabilities as between bonds, prefs and ordinaries. Hence, at any rate in the short run, the supply of prefs and ordinaries is more or less fixed, so that it is almost solely the investing public's tastes which determine the margins between the bond rate on the one hand and the yield on each issue of shares on the other.

We shall return to a further consideration of many of these matters in Chapter 22.

PART TWO

INCOME AND EXPENDITURE

CHAPTER 14

EXPENDITURE GENERATES INCOME

National Income Defined

THE THESIS developed in this chapter is that the aggregate of incomes received in a country in any year, i.e. the so-called *national income* of the country, is generated by certain kinds of expenditure. This thesis is obvious in a general way. Thus, for example, the producers, distributors and retailers of milk would receive no incomes if the consumption of milk ceased altogether. The object of this chapter is merely to attain a clearer formulation of the notion by giving, first, a precise and convenient definition of national income, and second, a description of the kinds of expenditure which have the characteristic of generating national income.

We can conveniently define the national income[1] of a country in any year to consist of:

A. *The Home-Produced National Income,* namely:

1. All wages and salaries earned in the country during the year *before tax* (i.e. before paying direct taxes such as income tax).
2. The total gross profits of domestic enterprises, that is, of enterprises operating in the home country, before tax.
3. The total revenue from *indirect* taxation, that is, taxation levied on goods and services—for instance import duties, sales taxes and excise duties.[2]

B. *Net Income from Overseas,* namely:

1. Net income from overseas investments.
2. Net remittances from overseas.

Net income from overseas is the balance (which may be negative) of income received from overseas after deducting income paid to overseas recipients. Income *received* from overseas, consisting to a small extent of private remittances from overseas relatives and

[1] The suitability of our definition of national income will become clearer as we proceed. For the present we should merely note that we are using the term to mean what economists call *gross* national income (or alternatively 'gross national product'), that is, national income inclusive of both indirect taxation and provisions for depreciation.

[2] Indirect taxation is so called because it is reasonable to suppose that the sellers of the goods and services subject to such taxation pass all or most of the burden on to their customers, by charging higher prices. Thus the burden of a duty on tobacco falls predominantly not on the sellers of tobacco products but *indirectly* on smokers. By contrast it is reasonable to suppose that direct taxes, such as the income tax, cannot be shifted on to somebody else by means of charging higher prices.

friends but to a much greater extent of dividends and interest on obligations issued overseas but held in the home country, is clearly not generated by expenditure in the home country, so for the time being we will exclude it from the scope of our argument. Income *paid* overseas is merely a diversion of home-produced national income; thus, for instance, some of the income (particularly interest and dividends) arising in Australia is paid out not to Australians but to Englishmen and Americans. Let us then consider what the home-produced national income is and how it is generated.

The first and third items in home-produced national income are self-explanatory, so let us move on to the remaining items in home-produced national income, 'total gross profits of domestic enterprises'. This item is intended to include rather more than the accountant or business man would understand by the term 'gross profits'. It is indeed taken to include all profits, dividends and interest transferred to equity holders, bondholders and other creditors by domestic enterprises, all financial provisions made by enterprises to cover depreciation and, finally, any other amounts of undistributed profits of domestic enterprises. (The last two of these items will for convenience be called *business income.)* Moreover the term 'enterprise' is stretched to cover the businesses of farmers, shopkeepers, lawyers, doctors, landlords, etc. Thus for instance the rent received by a landlord, and the incomes of farmers and doctors, are included in 'gross profits of domestic enterprises'. On the other hand the gross profits of any enterprise comprise only its gross *trading* profits, and exclude any interest or dividends received from securities held by the enterprise. For such receipts are *transfers* of income to the enterprise, and to avoid double counting we must avoid including transferred income in the income of the recipient, as well as of the payer.

How Income is Generated

Our next problem is to describe those types of expenditure which have the characteristic of generating home-produced national income, as defined above. A little consideration will show that the three items we have included in 'home-produced national income' could be re-classified thus:

(a) Income arising from domestic enterprises, that is:
   i. gross profits of domestic enterprises;
   ii. wages and salaries of workers in domestic enterprises;
   iii. indirect taxation levied on goods and services produced by, or imported by, domestic enterprises.

(b) Incomes of government servants, other than the employees of government-owned enterprises.

(c) Incomes of personal servants, such as gardeners and housemaids.

(d) Indirect taxation levied on goods imported by private citizens.

Item (d) is only negligible in size, since private citizens usually buy imported goods from retail shops or other domestic enterprises, and item (c) is also very small: for our purposes we can ignore both these items. Items (a) and (b) are generated by certain kinds of expenditure on goods and services. This proposition is obvious in the case of item (b), for clearly it is the purchase of the services of government servants which generates their wages and salaries. For instance, it is the payments which the government makes to buy the services of policemen, judges, school-teachers, soldiers and civil servants which constitute the incomes of the recipients.

Can it be shown that item (a), 'Income arising from domestic enterprises', is also generated by certain kinds of expenditure on goods and services? Let us consider what happens to the sales proceeds of some particular enterprise,[3] say the Smith Manufacturing Company, in any period, say the year 1950. Let us suppose that purchases of goods and services from this company by its customers (which is the same thing as the company's sales proceeds) amounted in 1950 to £100,000. How can this sum be accounted for? Not all of it would be gross profits, since the company would in the course of the year have to pay out income in the form of wages and salaries to its employees, and of indirect taxes to the government; and in addition it would have to purchase goods and services from other domestic enterprises and from foreigners. Let us suppose that these outgoings were as follows:

Outgoings of the Smith Manufacturing Company in 1950

	£
Wages and salaries paid	50,000
Indirect taxation paid (say, purchase tax)	5,000
Purchases of goods and services from other domestic enterprises[4]	40,000
Paid to foreigners for imports	16,000
	£111,000

[3] Excluding the proceeds of any sales (secondhand) of the enterprise's own plant or buildings.

[4] Treating as a *negative* item the proceeds of any sales (secondhand) to other domestic enterprises of the Company's own plant or buildings.

Since outgoings (£111,000) are in excess of sales proceeds (£100,000) does this mean that the company's gross profits in 1950 were negative? Not necessarily, because our list of outgoings made no distinction between *current* and *capital* outgoings, and only the former should be charged against sales proceeds in arriving at the figure for gross profits.

The distinction between current and capital items involves certain difficulties, but we have no choice but to make it, for it is an essential feature of the book-keeping methods in use in all kinds of enterprises. The basic criterion for drawing the distinction is simple enough: it is that any transaction which affects the material assets of the enterprise, (i.e. its plant and buildings and its stocks of goods and work in progress[5]) is to that extent a capital item, everything else being counted as current. The practical application of this criterion is not however always so simple.

Included in the *capital* items are all purchases of plant and buildings, and likewise the wages of workers engaged in installing plant or erecting buildings—subject however to the important proviso that *maintenance* expenditure on plant and buildings (whether in the form of wages paid to maintenance workers or of purchases of spare parts etc.) is a current item.

Included in the *current* items are all purchases of raw materials, fuel, bought-out parts, or goods for resale, and likewise the wages and salaries of all workers engaged in processing, distributing, or selling such goods, or in providing services to customers—subject to the important proviso that a suitable procedure must be adopted to allow for changes in inventories (stocks of goods and work in progress). For it is frequently possible, within a given period, for an enterprise to effect sales by drawing on stocks, and if this happens the value of the withdrawal has to be treated *first* as a current cost, to be charged against the proceeds of the sale, and *second* as a negative capital item, to record the depletion of assets. Conversely, an enterprise may, within a given period, utilize its purchases of materials etc., or of labour, not for satisfying the needs of its customers but for adding to its stocks of goods (either as purchased or after processing), and if this happens the value of the addition has to be treated *first* as a negative current item, to cancel out the purchases which are *not* utilized for satisfying the needs of customers, and *second* as a positive capital item, to record

[5] See the Balance Sheet of the Smith Manufacturing Company, on p. 5.

the increase in assets. There is unfortunately some difference of view as to the best way of measuring decreases or increases in inventories, but the method which we should best adopt here is the one recommended by social accountants, and involves valuing at the prevailing market price any change in the total physical stocks of each commodity held in stock by the enterprise. A rough and ready way to apply this rule to the Smith Manufacturing Company would be first to measure the change in the physical amount of its holding of each commodity as between the end of 1949 and the end of 1950, then to multiply each of these quantities by the average market price in 1950 of the commodity in question, and finally to aggregate the items (counting increases as positive and decreases as negative). The greatest practical difficulty involved would be to make a reasonable estimate of the market price of commodities which are not normally bought and sold in a highly organized market. (One could readily find the market price of wheat or raw rubber, but not of uncompleted battleships or half-manufactured shoes.)

We are now in a position to extend our statement of the outgoings of the Smith Manufacturing Company, by distinguishing between capital items (which we shall now call *material investment*[6]) and current items, as follows:

Outgoings of the Smith Manufacturing Company in 1950

	Total (as before)	*Current Items*	*Material Investment*
	£	£	£
Wages and salaries paid	50,000	45,000	5,000*
Indirect taxation paid	5,000	5,000	—
Purchases of goods and services from other domestic enterprises .. .	40,000	20,000	20,000*
Paid to foreigners for imports	16,000	11,000	5,000*
Value of reduction in inventory .	—	+1,000	−1,000
	111,000	82,000	29,000

* These items of material investment took the form (let us say) of the purchase and installation of new machinery, partly British and partly imported.

It is now apparent that the gross profits of the Smith Manufacturing Company in 1950 were £18,000, calculated as follows:

[6] *Material* investment, to distinguish it from *financial* investment in securities.

	£	£
Sales proceeds (= purchases of goods and services from the enterprise)		100,000
Less:		
Wages and salaries paid	50,000	
Indirect taxation paid	5,000	
Purchases of goods and services from other domestic enterprises	40,000	
Paid to foreigners for imports	16,000	
Total	111,000	
Of which, material investment	29,000	
		82,000
Gross profits, by difference		18,000

Re-arranging the items so as to bring together all the income (whether wages and salaries, indirect taxation or gross profits) arising from the enterprise, we get:

	£
Purchases of goods and services from the enterprise	100,000
Less: Purchases of goods and services from other domestic enterprises	−40,000
Plus: Material investment by the enterprise	29,000
Less: Paid to foreigners for imports	−16,000
Income arising from the enterprise	73,000

If we now imagine an account similar to the one above, but drawn up in respect of all enterprises in the economy, we see that in any year the total income arising from all domestic enterprises is generated by:

Purchases of goods and services *from* all domestic enterprises;
Less: Purchases of goods and services *by* one domestic enterprise from another;
Plus: Total material investment by enterprises;
Less: Total payments to foreigners for imports.

Or, taking into account the fact that the customers of domestic enterprises, apart from other domestic enterprises, fall into three groups—private citizens, the government, and overseas buyers—we can say that the total income arising from all domestic enterprises (as wages and salaries, indirect taxation, and gross profits) is generated by the following kinds of expenditure:

Purchases of goods and services from domestic enterprises by private citizens, the government and overseas buyers, *plus* material investment by enterprises, in all cases net of overseas payments for incidental imports.

We now must allow for the incomes of government employees—item (b) on page 107—by including in our list of income-generating expenditure the government's expenditure on its employees' services. Thus we arrive at the following comprehensive list of income-generating expenditure:[7]

1. Purchases by private citizens of goods and services produced by domestic enterprises, net of overseas payments for incidental imports. This we can call *personal consumption of home products.*
2. Purchases by the government firstly of services rendered by government servants and secondly of goods and services produced by domestic enterprises, net of overseas payments for incidental imports. This we can call *government purchases of home products.*
3. Purchases by overseas buyers of goods and services produced by domestic enterprises, net of overseas payment for incidental imports. This we can call *exports of home products.*
4. Material investment by enterprises, net of overseas payments for incidental imports, or *material investment of home products.*

Income-Generating Expenditure Described

The four items shown above as constituting 'income-generating expenditure' can alternatively be taken *without* the qualification 'of home products', provided that a further item, 'payments to foreigners for imports', is then deducted before we arrive at a total. Thus we get an alternative definition of income-generating expenditure, as follows:

Personal consumption
Government purchases
Material investment
Exports
Less: Payments to foreigners for imports.

[7] It will be seen that expenditure to be income-generating in the home country must be on the current output of goods and services in the home economy, net of payments to foreigners. Moreover, expenditure by domestic enterprises can be classed as income-generating only when it is on capital account. Non-capital expenditure by domestic enterprises fails to qualify as income-generating because, for example, the cost of the yarn is included in the purchase price paid for cloth, so that to include in income-generating expenditure both the purchase of the cloth and the purchase of the yarn would involve duplication.

Let us consider these five items one at a time. *Personal consumption,* or expenditure on goods and services by private citizens, includes among other things:

Purchases from retailers;
Expenditure on dwelling accommodation, measured by the rent (imputed in the case of owner-occupied dwellings);
Expenditure in hotels, restaurants, and places of entertainment;
Expenditure on the services of doctors and certain other professional men;
Expenditure on travelling, not for business purposes.

Government purchases consist of:

Purchases of the services of civil servants, servicemen and other government employees, other than the employees of government-owned enterprises;
Purchases of non-durable commodities, such as food for the army;
Purchases of durable equipment, such as armaments, school buildings.

Material investment consists of:

1. *Investment by enterprises in fixed equipment,* i.e. *in plant and buildings.* This in practice consists of the market value of the output of the building, constructional and engineering industries (and imports of similar products), excluding any goods exported or used for maintenance purposes or classed above as personal consumption or government purchases. The item includes the value of machines and buildings produced by enterprises for their own use.
2. *Investment in inventories.* Since changes in physical stocks may be upwards or downwards, this item may be either positive or negative.

Exports include the expenditure of foreigners on home-produced services, such as shipping services or tourist facilities, as well as on home-produced goods. *Payments to foreigners for imports* also include payments for services as well as goods.

The Re-allocation of National Income

National income, which consists (it will be remembered) of net income from overseas as well as home-produced national income, is in each year or other period re-allocated by the government, which on the one hand levies direct taxation on profits, wages, salaries and income from overseas and on the other hand makes *transfer*

payments, which are in a sense the equivalent of *negative* direct taxation. Transfer payments by the government are payments made without a *quid pro quo* of goods or services, and thus differ from 'government purchases', which are one component of income-generating expenditure. Transfer payments include cash social service benefits, pensions and interest payments on the government debt.[8]

The re-allocation effected by the government divides the national income into two components which we may term *private spendable income* and *government spendable income.* Moreover, since private spendable income may be enjoyed either by private citizens or by enterprises (in the form of provisions for depreciation or of undistributed profits), we can subdivide this category into *personal income* and *business income* respectively. Thus we get:

NATIONAL INCOME

BEFORE RE-ALLOCATION	AFTER RE-ALLOCATION
(A) *Home-Produced Income*	*Private Spendable Income*
1. Wages and salaries	Personal income
2. Gross Profits	Business income
3. Indirect taxation	*Government Spendable Income*
(B) *Net Income from Overseas*	
1. Net income from overseas investments	
2. Net remittances from overseas	

Net income from overseas is partly on private, partly on government account. Thus 'private spendable income' consists of part of (B), plus item (A1), plus item (A2) except for the profits of government-owned enterprises, plus transfer receipts, minus direct taxation. 'Government spendable income' consists of item (A3), plus direct taxation, minus transfer payments, plus any profits from government-owned enterprises, plus the balance of (B).

Summary of the Argument

The argument so far is summarized in Figure 5. The objects of the diagram are first, to describe what is meant by 'income-generating expenditure'; second, to stress that this expenditure generates an equal flow of home-produced national income; and

[8] In conformity with our definition of 'the government', 'government debt' must be taken as excluding the debts of government-owned enterprises.

third, to describe what is meant by 'home-produced national income'.

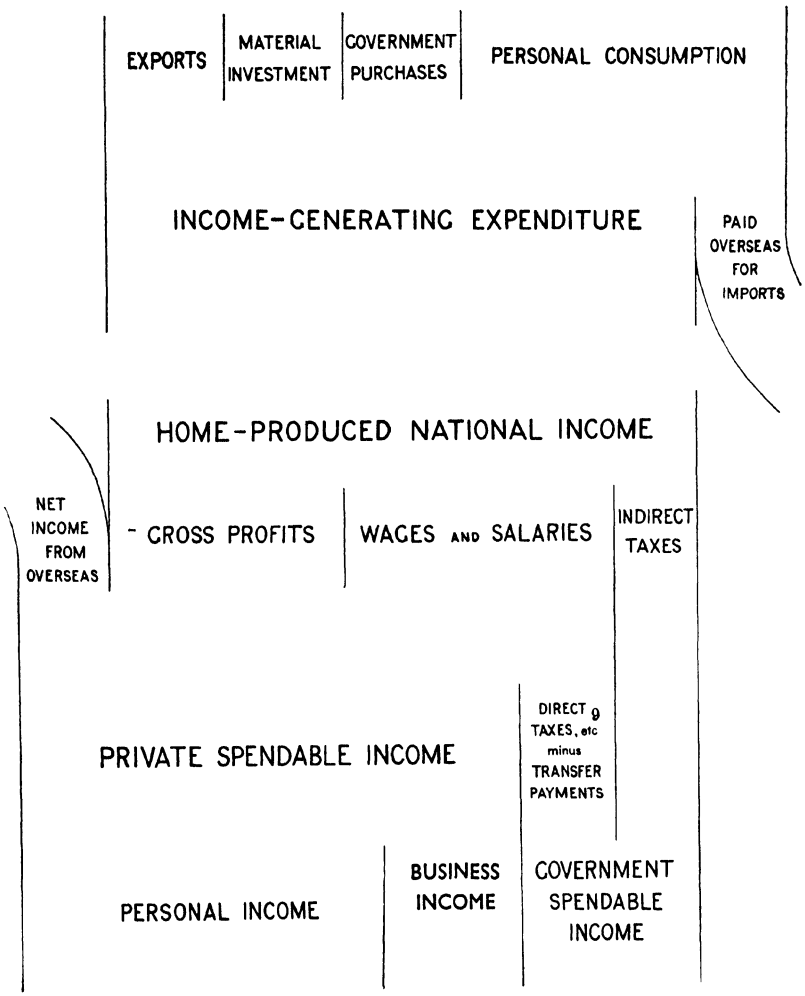


Figure 5—Income-generating Expenditure and the National Income

[9] The 'etc.' comprises net income from overseas on government account and the profits of government-owned enterprises.

The Role of the Government

For the sake of completeness, there are set out in the following table the items which enter into the government's receipts and payments on current account.

GOVERNMENT RECEIPTS AND PAYMENTS ON CURRENT ACCOUNT

Government Purchases	*Spendable Income*
1. Purchases of home products	1. Profits from government-owned enterprises
2. Expenditure on imports	2. Indirect taxation
	3. Direct taxation
	4. Net income from overseas
	5. *Less:* Transfer payments

The two sides of the account need not balance. An excess of income over expenditure is *unspent government income,* which serves to reduce the government's net indebtedness; an excess of expenditure over income is government *loan expenditure.*

Statistical Tables

Tables 9 and 10 present in a convenient form the official estimates of the size of each of the major divisions of Australian national income and expenditure in each of the nine years from 1938-9 to 1946-7 inclusive.[10] All the data are extracted from *National Income and Expenditure 1946-7,* published in 1947 by the Commonwealth Government Printer, Canberra. Table 9 gives the Australian gross national income by source, and also under the headings of wages and salaries, gross profits and indirect taxation. Table 10 shows the same annual totals re-allocated under the headings of personal, corporate and government spendable income.

[10] In Australia official statistics relate to years from 1 July to 30 June.

TABLE 9

Australian National Income, 1938-9 to 1946-7

(All figures in £A million)

——	1938-9	1939-40	1940-1	1941-2	1942-3	1943-4	1944-5	1945-6	1946-7
Exports	150	182	172	160	139	156	158	166	267
Gross Material Investment	145	160	100	95	55	45	70	165	270
Personal Consumption	663	671	715	761	740	731	752	836	972
Government Purchases	113	149	260	391	613	564	470	334	255
Payments to Foreigners for Imports	−133	−163	−165	−152	−116	−32	−41	−78	−267
INCOME-GENERATING EXPENDITURE ..	938	999	1,082	1,255	1,431	1,464	1,409	1,423	1,497
Wages and Salaries ..	436	452	525	650	758	790	773	764	756
Gross Profits	412	446	446	475	524	544	510	527	566
Indirect Taxation ..	90	101	111	130	149	130	126	132	175
GROSS HOME-PRODUCED NATIONAL INCOME ..	938	999	1,082	1,255	1,431	1,464	1,409	1,423	1,497
Income Payable Overseas	−42	−41	−42	−40	−38	−40	−38	−36	−34
GROSS NATIONAL INCOME	896	958	1,040	1,215	1,393	1,424	1,371	1,387	1,463

TABLE 10

Australian National Income, after Re-allocation, 1938-9 to 1946-7

(All figures in £A million)

	1938-9	1939-40	1940-1	1941-2	1942-3	1943-4	1944-5	1945-6	1946-7
Personal Income	729	758	801	933	1,048	1,068	1,016	1,118	1,117
Business Income	82	90	89	80	89	98	94	94	102
PRIVATE SPENDABLE INCOME ..	811	848	890	1,013	1,137	1,166	1,110	1,212	1,219
GOVERNMENT SPENDABLE INCOME ..	85	110	150	202	256	258	261	175	244
GROSS NATIONAL INCOME	896	958	1,040	1,215	1,393	1,424	1,371	1,387	1,463

CHAPTER 15

PRICES AND OUTPUT

WE HAVE SEEN that income-generating expenditure in any year consists of expenditure during the year on certain goods and services. What are these goods and services, expenditure on which serves to generate the home-produced national income? They are what we may call the *final output* of home products, namely the total domestic output of each type of good and service *minus* the current usage of that good or service by domestic enterprises in the production of further goods and services.

The total domestic output of any one type of good is made up of the following six items, of which the first five comprise its *final* output:

1. Quantity consumed by private citizens;
2. Quantity purchased by the government;
3. Quantity exported;
4. Quantity used by enterprises to improve their fixed equipment;
5. Changes, positive or negative, in inventories;
6. Quantity used up by enterprises in the production of further goods and services.

It is apparent that if we could value the year's final output of each good and service at its market price, net of the cost of incidental imports, we would obtain a list of valuations the sum of which would correspond exactly to the year's income-generating expenditure, as already defined. The practical difficulties of this procedure would admittedly be great, and could at best be solved only in a rough and ready fashion. For example:

1. The volume of output of certain heterogeneous goods and services is hardly susceptible to numerical measurement. Thus it would, for instance, be difficult to devise a suitable unit in which to measure the quantity of service rendered by a school-teacher or the quantity of output produced by a jobbing engineer.

2. The 'market price' of any product should be taken as the price actually paid by the final purchaser (except of course in the case of owner-occupied dwellings, the rent of which would have to be valued at the market rent currently being paid for similar accommodation) but unfortunately the market price of a commodity may vary from

time to time within a year and from place to place within a country, so that it would almost always be necessary to have recourse to averages.

3. It would be far from easy to calculate how much of the market price of certain goods represents overseas payments for imports.

Assuming however that such difficulties could be settled in a rough and ready fashion, we would be able to calculate the income-generating expenditure (and hence home-produced national income, for the two are necessarily equal) of a country in any year by drawing up an account on the lines of a tradesman's bill. Thus:

TABLE 11

Income-Generating Expenditure

Type of Commodity or Service	*Final Output for year*	*Average Market Price (Corrected for cost of imports)*	*Expenditure (£ million)*
Wheat	100 million bushels*	10s. per bushel	50
Coal	2 million tons*	£2 a ton	4
Etc.	—	—	—

* The final output of wheat, since none is consumed by human beings without further processing, is equal to the year's exports plus the increase (or minus the decrease) in stocks as between the beginning and the end of the year. The final output of coal is equal to domestic consumption, plus usage by the government, plus exports, plus increase in stocks.

It is clear from this table that a change in income-generating expenditure as between one year and another may be due to a change in the final outputs of goods and services, to a change in their prices (corrected for cost of imports), or to a combination of both. However, the allocation of any percentage change in income-generating expenditure from (let us say) 1957 to 1958, as between the part which is due to a change in the volume of final output and the part which is due to a change in prices,[1] involves a certain amount of difficulty. *First,* there is no suitable *absolute* measure of the final output in any given year, for it would be impossible to add up the quantities in the second column of table 11 unless they

[1] Here and in the remainder of the chapter 'price' means 'price net of the cost of incidental imports'.

all happened to be expressed in the same units (e.g. tons); and even if it were possible to use a common unit, the resulting total would have little significance. What use, for instance, would it be to establish that the final output in 1958 was 21 million tons of miscellaneous goods and services, compared with 20 million tons in 1957? Very little, for the 21 million tons in 1958 might include more of certain goods (say coal and milk) but less of others (say motor cars and wireless sets) than the 20 million tons in 1957; and if this were the case we could hardly be sure that the volume of final output had increased at all, let alone conclude that it had increased by 5 per cent. *Second,* there is no suitable absolute measure of price of the final output of goods and services produced in any year. The only available measure is their average price per ton or other unit of quantity. But suppose that the price per ton in 1957 were 10s. and 1958 8s.; could we conclude that the average price of final products had fallen by 20 per cent? Clearly not, for the change from 10s. to 8s. might conceivably be due entirely to changes in the composition of final output, the price of each single type of good or service being the same in 1958 as in 1957.

Though it is impossible to find a suitable absolute measure of the volume of final output or the average price of this output in any two years, it fortunately does not follow that we must abandon the attempt to compare either output or prices in two different years. Such a comparison can be made by means of a statistical device known as *index numbers.* If, for example, our object is to compare the volume of output in 1957 and 1958 respectively, we could proceed as follows. We could calculate the total of income-generating expenditure in 1958 as it would have been *had prices in 1958 been the same as in 1957,* and then express this total as a percentage of the actual total income-generating expenditure in 1957. The resulting *index number of output* is a measure of the proportionate change in the volume of final output between 1957 and 1958. If, for instance, the index number were 120, this would mean that the volume of final output in 1958, compared with that in 1957, was in the ratio of 120:100. What now of comparisons of *prices* in 1957 and 1958? Here we can proceed in either of two ways. We can find the *actual* total income-generating expenditure in 1958 as a percentage of that in 1957; let us suppose that it is 132 per cent. Then, since this increase is due either to a rise in the volume of final output or to a rise in prices, and since we know that the former factor accounts for only part of the 132 per cent,

it follows that the rest of the 132 per cent must be due to a rise in prices. Calculated in this way the rise in prices is in the proportion of 100 in 1957 to 110 in 1958. This can be seen from the following table, where the product of the output-ratio (100: 120) and the price ratio (100: 110) is the required ratio of 10,000: 13,200 or 100: 132:

TABLE 12

	1957	1958
1. Index Numbers of Volume of Final Output	100	120
2. Index Numbers of Prices	100	110
3. Ratio of Income-generating Expenditure in the two years ..	100 × 100 or 10,000	: 120 × 110 : 13,200

An alternative way in which we can compare prices in 1957 and 1958 is to calculate total income-generating expenditure in the two years as it would have been *had the quantity of final output of each product been the same,* and then express the total for 1958 as a percentage of the total for 1957. Does this second method of comparing prices in 1957 and 1958 necessarily lead to the same result as the first method? Unhappily, for a reason which has come to be known as the 'index number problem', the answer to this question is not an unqualified affirmative, but in practice the difference between the results may not be of much significance. We shall therefore proceed on the assumption that it is possible to represent the ratio of income-generating expenditure in any two years as the product of an output-ratio and a price-ratio and that these last two ratios can in practice be estimated with a satisfactory degree of accuracy. However, for the benefit of readers who would like to pursue the index number problem a little further there is an appendix on this subject at the end of the chapter.

Given then that the ratio of income-generating expenditure in any two years is the product of an output-ratio and a price-ratio, we can if we so wish make a diagrammatic representation of the change in income-generating expenditure between the first year and the second. In the following diagram, based on the figures quoted in the previous paragraph, a comparison is made between

the years 1957 and 1958. It will be seen that in this diagram the ratio of the areas of the two rectangles corresponds to the proportionate increase in income-generating expenditure from 1957 to 1958. In other words, income-generating expenditure can be represented graphically in two dimensions, a price dimension and an output dimension, and an increase in income-generating expenditure can take the form of a 'stretching' in either or both of these dimensions. In this example, for instance, income-generating expenditure has 'stretched' 10 per cent in the price dimension and 20 per cent in the output dimension, giving a total increase of 32 per cent.

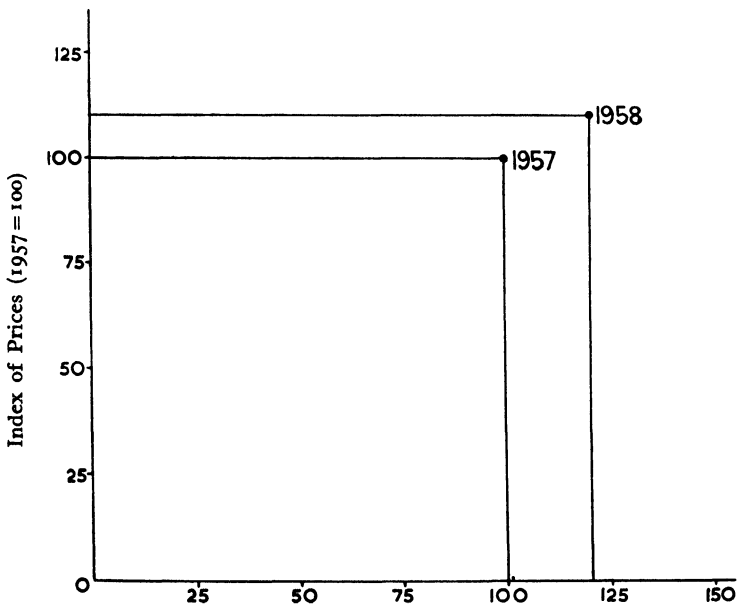


Figure 6—Prices, Output and Expenditure

In what circumstances does an increase in income-generating expenditure take the form mainly of a 'stretching' in the price dimension, and in what circumstances of a 'stretching' in the output dimension? Let us begin by considering what happens at a time of *widespread* unemployment, both of labour and of equip-

ment,[2] and let us assume no changes in wage rates or indirect taxes. In these circumstances an increase in income-generating expenditure is likely to take the form mainly of an increase in the volume of final output, without appreciably raising prices, so long as there remains a clear margin of unemployed labour and fixed equipment. For with stable wage rates and plenty of unused equipment the direct cost per unit of converting any unfinished good into a more finished state (e.g. of converting yarn into cloth) will generally speaking remain fairly constant as output is increased,[3] and producers will usually be content to meet an increased demand by selling more at the old price, provided that no increase has occurred in the prices of bought-out materials. Similarly wholesalers and retailers are not likely to raise their selling prices except in so far as they have to pay higher purchase prices. Thus if unemployed labour and equipment were to exist in *all* industries, an increase in demand would probably not induce any industry to *initiate* a rise in selling prices; consequently, no rise in prices would develop and the increase in income-generating expenditure would take the form exclusively of an increase in the volume of output, and therefore in employment.

There are, however, certain primary industries, especially farming, in which the conditions of production and marketing are such that productive capacity is used almost to the full even in a trade depression. In these industries it is unrealistic to postulate the existence of unemployed equipment and equally unrealistic to conclude that an improvement in demand will call forth a greater output at the old price. Therefore the prices of the products in question (consisting of basic foodstuffs and raw materials) will rise as income-generating expenditure increases, and these price rises will to some extent be passed on to later stages of production and ultimately to the final purchasers. Consequently the increase in income-generating expenditure is likely in practice to consist in part of a rise in prices, though mainly it will take the form of a rise in the volume of output.

[2] The determination of prices at times of *full* employment is considered in ch. 21.

[3] The direct cost of converting materials and components into a more finished state in practice consists largely of wages. Average wage-costs per unit output vary directly with hourly wage-rates and inversely with average output per man-hour. Average output per man-hour may increase or decrease with variations in output, but in most industries this consideration is not in practice of sufficient importance to be taken into account in fixing selling prices.

If the increase in income-generating expenditure continues, the economy will approach a state of full employment of labour and equipment. Bottlenocks will begin to appear in respect of particular types of equipment or labour, or there may be shortages of labour in particular localities. Thus the originally very small number of industries whose outputs cannot be further increased will be steadily augmented, and the increase in income-generating expenditure will increasingly take the form of a rise in prices instead of an increase in output. Finally, when unemployment is reduced to its practical minimum, a further increase in income-generating expenditure takes the form almost exclusively of a rise in prices. Thus on the assumptions we have made, of stable wage rates and indirect taxes, the shape of the rectangles which it would be appropriate to draw in a diagram like Figure 6, to illustrate the relation between prices and output at different levels of income-generating expenditure, would conform to a definite pattern, like those in Figure 7.

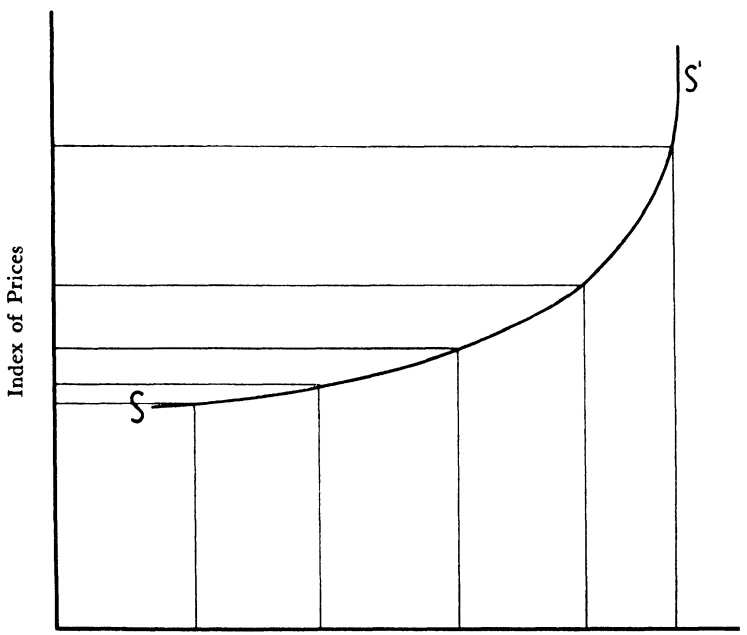


Figure 7—The Price-Output Schedule

The essential feature of this pattern is that a line connecting the top right-hand corner of the rectangles—like the line SS^1 in Figure 7—would rise continuously from left to right (indicating that prices would rise with a rise in output) but more and more steeply as output gets larger and larger, until at a point corresponding to full employment, when output cannot increase further, the line becomes vertical. A line of the kind shown as SS^1 in Figure 7 may be said to represent the *price-output schedule* of the economy, since it shows the relationship between the level of prices and the level of output.

We must now consider, again assuming conditions of widespread unemployment, the effect on income-generating expenditure of a rise in wage-rates. In dealing with this question we can avoid some of the complexity of the real world by considering the rather unrealistic case of a change in income-generating expenditure due *solely* to a rise in money wage rates. Moreover the problem is so complex that many more simplifications are needed to enable us to get a simple straight-forward answer; these simplifications are in italics in the argument that follows.

Assume then a *closed economy*[4] with *fairly general unemployment of labour and equipment* and that there occurs an *all-round* 10 per cent increase in wage rates and simultaneously a 10 per cent increase in *rents* and in the *prices of primary products.* Consider first a manufacturing enterprise at an early stage of production, for example a wool-spinning firm. Its direct costs of production consist almost entirely of wages and primary products; consequently the 10 per cent rise in wage rates and in the prices of primary products will result in its direct costs per unit of output rising by approximately 10 per cent. Now (although this conclusion does not necessarily follow in all circumstances) let us assume that our enterprise reacts to the rise in direct costs *by raising its selling price in strict proportion;* namely, by 10 per cent. Next consider an enterprise at a later stage of production, say a weaving firm. Due to what we have assumed to have happened at the preceding stages of production, the prices it pays for its materials will now be 10 per cent higher, and it, too, has to pay 10 per cent higher wage rates. Thus its direct costs per unit of output are now 10 per cent higher, and *if it raises its selling prices proportionally* they also will be increased by 10 per cent. If this argument is continued to the final

[4] A closed economy is one which has no trading or other financial relations with the outside world.

stage of production we reach the conclusion that the prices of all finished products rise by 10 per cent; and if, as is customary, wholesalers and retailers *work to a constant percentage profit margin* (and *if indirect taxes are ad valorem*[5]) then all retail prices will be 10 per cent higher. And since by assumption rents are 10 per cent higher we see that virtually all prices have risen by 10 per cent. Thus in our hypothetical economy, a rise of 10 per cent in wage rates has raised all prices by 10 per cent.

If, as the result of the rise in wage rates, there is also a change in output (a possibility which will come up for consideration in Chapter 20) the change in prices associated with such a change in output has to be superimposed on the 10 per cent rise in prices which is *directly* attributable to the 10 per cent rise in wage rates. In other words, our conclusion about our hypothetical economy must not be that prices rise by 10 per cent, but rather that the whole price-output schedule shifts upwards by 10 per cent. This is illustrated in Figure 8, where a second price-output schedule ss^1 is drawn such that at each level of output the level of prices is now 10 per cent higher than before.

When, however, we pass from this simplified model to the real world, where our simplifying assumptions do not necessarily obtain, it is most unlikely that our 10 per cent rise in wage rates would cause the price-output schedule to shift upwards by as much as 10 per cent. First, certain prices are 'sticky' and do not readily respond to changing circumstances. This applies especially to house rents and the prices charged by certain monopolists, such as railways. Second, in an open economy (that is, an economy which has trading relations with other economies) the prices of exported commodities are not likely to increase if these commodities are (as in the case of Australia) primary products the supply of which is not readily adjusted in the light of changes in production costs. In Australia, for instance, the production of wool, wheat and other farm products is not likely to be curtailed as the result of an increase in wage rates; hence the prices of these commodities would probably not be increased by a rise in Australian wage rates. Moreover in so far as these commodities are sold for use in the home country, the unresponsiveness of their prices to a wage increase would tend to moderate the rise in the prices of all the things (clothes, bread, etc.) into which they are manufactured.

[5] *Ad valorem* duties are those which are proportional to the value of the taxed commodity.

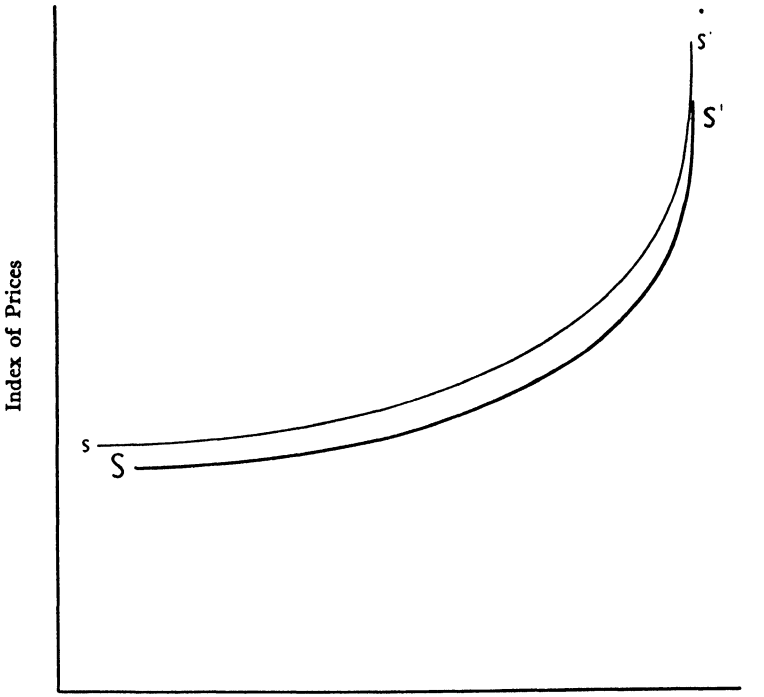


Figure 8—An Upward Shift of the Price-Output Schedule

We have considered the question of a shift in the price-output schedule on the basis of a supposed change in wage rates because this is the most important reason in practice for a change in the relationship between prices and output, when by 'prices' we mean (as we do here) prices *corrected for the cost of imports.* If by prices we had meant uncorrected market prices, changes in the prices of imported goods would have required at least the same emphasis as changes in wage rates. Other factors which would change the relationship between prices and output are changes in indirect taxes and changes in the percentage profit margins charged by manufacturers and traders.

Appendix on the Index Number Problem

Index numbers can be used to show the proportionate changes

in any *time series*, i.e. the numerical measurement of anything which varies from period to period such as, for example, the annual national income of Australia. All that need be done to convert a series of annual figures into index numbers is to express them all as percentages of whatever the figure happens to be in one selected year, which then goes by the name of the *base* year. We could for instance readily express the Australian national income, as recorded in Table 9, on page 116, in the form of a series of index numbers, with base (let us say) 1940-1. The result would be:

TABLE 13

Australian National Income, 1938-9 to 1946-7

	£ *million*	*Index (1940-41 = 100)*
1938-39	896	86
1939-40	958	92
1940-41	1040	100
1941-42	1215	117
1942-43	1393	134
1943-44	1424	137
1944-45	1371	132
1945-46	1387	134
1946-47	1463	141

In this case the matter is straightforward, because we begin with a series of measurements made in terms of a common unit (the £A) so that the technique is merely one of simple proportion. The so-called index number *problem* arises when the variable which we wish to represent by means of index numbers lacks any suitable unit of measurement. In economics the problem is a familiar one, for it is often necessary to measure variations in the volume of, or in the average price of, a specified flow of miscellaneous commodities in circumstances where there is no satisfactory common unit of quantity.

Already we have met with the need for measuring variations in the volume of, and in the average price of, the flow of products which we have designated the 'final output of home products'. In this case, and in many others which lie outside the scope of this book, the need is basically the same, namely to split into two dimensions variations in the total value of some given flow of goods and services, the two dimensions being those of quantity and of price. Let us therefore investigate the index number problem on the basis of a simplified example, in which there are only three commodities, eggs, loaves and apples. Let us suppose that in any two years, labelled for convenience 1957 and 1958, the output and average prices of these three goods are as follows:

TABLE 14

Hypothetical Data on Prices and Quantities

—	1957			1958		
	Number	*Price*	*Value*	*Number*	*Price*	*Value*
Eggs ..	10	2d.	20d.	15	4d.	60d.
Loaves ..	50	3d.	150d.	60	2½d.	150d.
Apples ..	30	1d.	30d.	20	2d.	40d.
TOTAL ..	—	—	200d.	—	—	250d.

In 1958 the index number of total value, with 1957 as the base year, is clearly 125. To calculate the index number of *quantity* in 1958 we must compare the total values in 1957 and 1958 as they would have been had all prices been the same in the two years. This comparison could be made by following the procedure we adopted in Chapter 15 and comparing actual total value in 1957 (200 pence) with the hypothetical total value in 1958 re-calculated, as in Table 15, on the basis of 1957 prices. According to this procedure, the rise in total value between 1957 and 1958, assuming constant prices, would have been in the ratio 200:230, so that the 1958 index number of quantity, with 1957 as base, would be 115. But (and this is the essence of the index number problem) why make the comparison between total values in 1957 and 1958 on the basis that *1957* prices prevailed in the two years? Could not the calculation be made, with equal validity, on the basis that *1958*

TABLE 15

Total Values in 1957 and 1958 Compared on the Basis of 1957 Prices

—	*Number (1958)*	*Price (1957)*	*Hypothetical Value (1958)*
Eggs	15	2d.	30d.
Loaves	60	3d.	180d.
Apples	20	1d.	20d.
		TOTAL	230d.

Actual Total Value in 1957 (from Table 14) 200d.
Hypothetical Total Value in 1958, assuming 1957 prices 230d.
1958 as percentage of 1957 (index number of quantity in 1958) 115·0

prices prevailed in the two years? The alternative procedures are equally valid, but, as will be seen from Tables 15 and 16, they unfortunately lead to somewhat different results. Calculated on the basis of 1957 prices, the 1958 index number of quantity is, as we have seen, 115; but on the basis of 1958 prices the index number is only 111·1.

TABLE 16

Total Values in 1957 and 1958 Compared on the Basis of 1958 Prices

—	*Number (1957)*	*Price (1958)*	*Hypothetical Value (1957)*
Eggs	10	4d.	40d.
Loaves	50	2½d.	125d.
Apples	30	2d.	60d.
		TOTAL	225d.

Hypothetical Total Value in 1957, assuming 1958 prices	225d.
Actual Total Value in 1958 (from Table 14)	250d.
1958 as percentage of 1957 (index number of quantity in 1958)	111·1

Thus there is a certain degree of ambiguity in the quantity index for 1958, depending on whether we base the calculation on 1957 or on 1958 prices, and it is this ambiguity, inherent in all calculations of quantity indices and price indices, which has been termed the index number problem. In our example, we cannot justifiably say that the quantity of commodities has risen by 15 per cent between 1957 and 1958, nor that it has risen by 11·1 per cent; all we can say is that it has risen by some percentage between the limits of 11·1 and 15·0.

This margin of ambiguity could have been made to disappear had we assumed in Table 14 that the prices of all three commodities had changed in the same proportion or again that the quantities of all three commodities had changed in the same proportion; from this it follows that the margin of ambiguity is the less, the smaller the divergence between the percentage changes in the prices of the several commodities and the smaller the divergence between the percentage changes in the quantities of the several commodities.

In our example the margin of uncertainty is unusually large, because the changes we assumed in Table 14 are highly irregular. Thus:

TABLE 17

Percentage Change Between 1957 and 1958 Assumed in Table 18

—	*Number*	*Price*
Eggs	+50%	+100%
Loaves	+20%	− 17%
Apples	−30%	+100%

In practice, the flows of commodities which are investigated by means of index numbers are usually such that the prices, and also the quantities, of the several commodities rise and fall together in sufficiently close conformity to ensure that the margin of uncertainty is much less than in our example.

Now let us derive from Table 14 an index of prices. Here again we have a choice of procedures. If we wish to make a calculation which is independent of the output index numbers we have just calculated, we must proceed by comparing the total values in 1957 and 1958 as they would have been had all *quantities* been the same in the two years. But as before there are two alternative procedures, set out in this case in Tables 18 and 19, which again lead to different results. On the basis of 1957 quantities, the 1958 index number of prices is 112·5; but on the basis of 1958 quantities, the resulting index number is 108·7.

TABLE 18

Total Values in 1957 and 1958 Compared on the Basis of 1957 Quantities

—	*Number (1957)*	*Prices (1958)*	*Hypothetical Value (1958)*
Eggs	10	4d.	40d.
Loaves	50	2½d.	125d.
Apples	30	2d.	60d.
		TOTAL	225d.

Actual Total Value in 1957 (from Table 14)	200d.
Hypothetical Total Value in 1958, assuming 1957 quantities	225d.
1958 as percentage of 1957 (index number of prices in 1958)	112·5

TABLE 19

Total Values in 1957 and 1958 Compared on the Basis of 1958 Quantities

—	*Number (1958)*	*Prices (1957)*	*Hypothetical Value (1957)*
Eggs	15	2d.	30d.
Loaves	60	3d.	180d.
Apples	20	1d.	20d.
		TOTAL	230d.

Hypothetical Total Value in 1957, assuming 1958 quantities 230d.
Actual Total Value in 1958 (from Table 14) 250d.
1958 as percentage of 1957 (index number of prices in 1958) 108·7

We now have two index numbers of quantity (115·0 and 111·1) and two of price (108·7 and 112·5), but are they compatible with the index number of total value (125)? Yes, provided that we associate the lower value of the quantity index with the higher value of the price index, and conversely. Thus:

TABLE 20

Index Numbers of Quantity and Price

	1957	1958	
		A	B
1. Index Numbers of Quantity ..	100	115·0	111·1
2. Index Numbers of Prices ..	100	108·7	112·5
3. Total Value (line 1 times line 2)	10,000	12,500	12,499

It will be seen that both pairs of values for the quantity index and the price index lead us to the correct conclusion that total value has increased in the ratio 10,000: 12,500.

To summarize:

1. Index numbers can be used to measure the proportionate changes in any time series.
2. If we have time series of the quantity and price of each of a selection of commodities in successive years we can construct index

numbers not only of the annual total value of all the commodities considered together but also of their quantity and their price.

3. The indices of quantity and price are however inherently subject to a margin of ambiguity, which is the less the greater is the uniformity of the proportionate variation in the quantities, and also in the prices, of the several commodities.

4. The indices of quantity and of price conform to the index of total value, provided that the lower value of the quantity index is associated with the higher value of the price index, and conversely.

CHAPTER 16

INCOME AND ITS DISPOSAL

WE CONCLUDED in Chapter 14 that home-produced national income is generated by four categories of expenditure on home-produced goods and services: personal consumption by private citizens, material investment by domestic enterprises, purchases by the government, and purchases by foreigners (exports). Moreover if to these four sources of national income we add 'net income from overseas' we thereby account for the whole of the national income. We also concluded that the total national income, arising from all five of these sources, was allocated to three main classes of income receiver: private citizens, enterprises, and the government. Thus, in tabular form, we have:

Sources of National Income	*National Income*
Personal consumption of home products	Personal spendable income
Material investment of home products	Business spendable income
Government purchases of home products	Government spendable income
Exports of home products	
Net income from overseas	

The two sides of this account are always equal in any period of time.

We see from this table that the recipients of national income (private citizens, enterprises and the governments) are themselves directly responsible for three of the categories of expenditure which serve to generate national income. Private citizens receive incomes and they make consumption purchases of home products; enterprises receive incomes (in the form of depreciation allowances and undistributed profits) and they make investment purchases of home products; and lastly the government itself receives an income (approximately equal to its tax revenue, less transfer payments) and it too makes purchases of home-produced goods and services. Has this dual role of the private citizen, the enterprise and the government any economic significance? In particular, does the size of an income receiver's income this month (or other period) influence the amount of his own purchases of home products either this month or in future months and thereby influence the size of the national income?

Consider first a private citizen. What does he do with the income

he receives, whether it be a weekly wage, a monthly salary, or six-monthly interest or dividends? He will almost certainly hold it for a while, though perhaps only a very short while, as *money*. Then, after an interval of hours, days or even months, depending on his habits, he will dispose of his money, or a high proportion of it, by exchanging it for other obligations (such as time deposits, Savings Certificates, bonds and so on) or for goods and services. It would therefore be sensible to look for a close relationship between Mr Smith's present rate of expenditure on goods and services, that is, his personal consumption, and the size of his income in the recent past. It is indeed a matter of common knowledge that such a relationship does usually obtain, and that a person's expenditure is likely to be higher, the higher his income. Moreover, when we consider private citizens not individually but as a whole, and thus average out individual idiosyncrasies, it becomes overwhelmingly plausible that personal consumption will be higher, the higher the level of personal spendable income. We could also say, allowing for that part of personal consumption expenditure which goes to pay foreigners for imports, that personal consumption *of home products* will be higher, the higher the level of personal spendable income. For those who like to see arguments in graphical form, the relationship could be expressed thus:

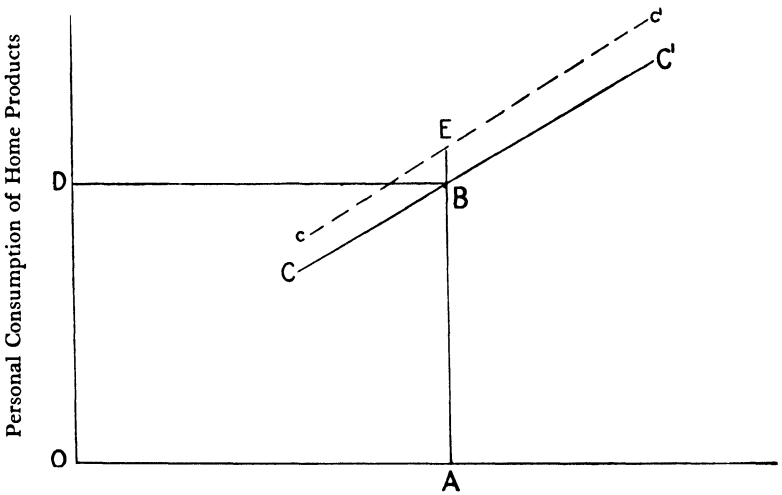


Figure 9—Income and Consumption

In this figure the curve CC^1 (which need not have been a straight line, though it has been drawn as such) shows the rate of personal consumption of home products corresponding to each level of personal spendable income; thus, for instance, at a level of personal spendable income corresponding to OA (=DB) personal consumption of home products corresponds to OD (=AB). CC^1 is an upward sloping curve, since personal consumption of home products is correctly represented as increasing with a rise in personal spendable income.

Since personal consumption of home products does not depend solely on the level of personal spendable income but may also vary on account of other factors, CC^1 cannot be regarded as a wholly *stable* curve, but rather as one which is liable to shift up or down whenever anything happens to change the rate of personal consumption of home products out of an unchanged flow of personal spendable income. For example, suppose that a heavy import duty is imposed on imported consumption goods, as the result of which private citizens spend a higher proportion of their incomes on *home-produced* goods. This would correspond in Figure 9 to an upward shift of the curve, for example from CC^1 to cc^1, so that at any given level of income (say OA) there now corresponds a higher rate of consumption of home products (AE instead of AB).

If then the individual citizen's consumption is influenced by the size of his spendable income, can it also be said that the rate of material investment undertaken by an enterprise is influenced by the size of that enterprise's income, that is, by the size of the provision which it makes for depreciation and undistributed profits? It is unlikely that an enterprise's rate of material investment would depend *year by year* on its income, in the same way as a private citizen's consumption depends on his income, if only because material investment has often for technical reasons to be carried out in 'bursts' rather than continuously. However, in the longer run, say over a period of five or ten years, the pace of an enterprise's material investment may be more dependent on its spendable income. But, as we shall see in Chapter 19, enterprises usually have only limited opportunities of profitable investment, and many have adequate access to outside finance; so that even in the long run the pace of an enterprise's material investment may not be set by the size of its own spendable income.

We must not conclude from the previous paragraph that the rate of total material investment is largely independent of the size of

the national income as a whole. Indeed, as will be shown in Chapter 19, these two variables are related in a number of important ways. But the relationships considered in Chapter 19 are so unstable and complicated that it would be merely confusing to introduce them into the argument at this stage, when we have still to investigate the ramifications of the comparatively simple relationship between income and personal consumption.

There remains the question whether government purchases are related to the government's spendable income, in the same way that personal consumption is related to personal spendable income. Nowadays it is reasonable to assume that they are not. Mr Gladstone, it is true, regarded a balanced annual budget as the keystone of public finance, and would probably have reacted to a falling off in government income by making a roughly equivalent cut in government expenditure, just as a private citizen would do if his income declined. But we have travelled far since Mr Gladstone's day, and it is now an accepted principle of public finance that the rate of government purchases in any year should be regulated by reference to the requirements of the economy as a whole, not to the size of the government's income in that year. It is, for instance, almost unthinkable that a slump in business activity, reflected in a lower revenue from taxation, should induce either the Australian or the British government to curtail its rate of purchases. Government purchases would probably be increased, rather than reduced, during a slump, if this best served the needs of the economy as a whole. (On this point, see Chapter 20.)

Thus of the three classes of recipients of national income, private citizens, enterprises and the government, only the first disposes of its income in such a way that year by year its rate of income-generating expenditure is likely to be closely related to its spendable income. On this account personal consumption of home products must be clearly distinguished from the other four sources of national income, namely:

Material investment of home products,
Government purchases of home products,
Exports of home products, and
Net income from overseas.

It is convenient to have a single label for these last four sources of national income and, in the absence of any better term, we can refer to them enigmatically as the 'X-sources', or simply 'X'.

The Consumption Schedule

If there is a fairly close relationship between personal consumption of home products and the size of personal spendable income, there is also likely to be a close relation between the former and the *whole* national income. Firstly, the national income is divided in a fairly regular manner between private spendable income and government spendable income, the allocation of any change in national income as between the two categories being regulated mainly by the laws governing taxation and transfer payments. Thus *unless there is a change in the laws concerned,* it would be reasonably safe to conclude that to each level of national income there corresponds a level of private spendable income, and that if the former increases the latter increases too. Secondly, it can plausibly be argued that private spendable income is in turn allocated in a fairly regular manner between total personal income and total business income. As we have seen, a considerable part of total business income consists of depreciation allowances, which (owing to the rules of accounting by which these allowances are calculated) are most unlikely to change significantly from year to year. The remaining part of total business income consists of the undistributed profits of companies. Undistributed profits are far from stable from year to year, but they vary in a fairly regular manner with total national income, increasing in times of prosperity and becoming small (or even negative) in times of depression. Moreover, undistributed profits are such a small part of total private spendable income[1] that even if they did vary somewhat erratically we could still conclude that to each level of private spendable income there corresponds, with only a small percentage error, a level of personal spendable income, and that the two rise and fall together.

If we accept the conclusions of the last paragraph and ignore for the time being the possibility of a change in the laws governing taxation and transfer payments, it would be possible to re-draw Figure 9 so as to make the horizontal axis not *personal spendable income* but *total national income,* as shown in Figure 10 on page 139.

How is Figure 10 derived from Figure 9? Consider any particular size of national income; let us say, for the sake of argument, 100 a month, measured in £ millions, and mark off a corresponding distance (OM) along the horizontal axis of Figure 10. To a total national income of £100 a month there corresponds a more or less

[1] Probably under 5 per cent.

definite size of personal spendable income, let us say 80 a month. From Figure 9 we now read off the rate of personal consumption of home products corresponding to a personal spendable income of 80 a month—let us suppose it is 60 a month. If then we erect a perpendicular MN in Figure 10, such that its height corresponds to 60 a month, we have established *one* point in the required curve CC'. The remainder of the curve is obtained by repeating the procedure for different sizes of national income. Let us call the curve thus obtained (relating 'personal consumption of home products' to 'national income') the *aggregate consumption schedule* of the community as a whole.

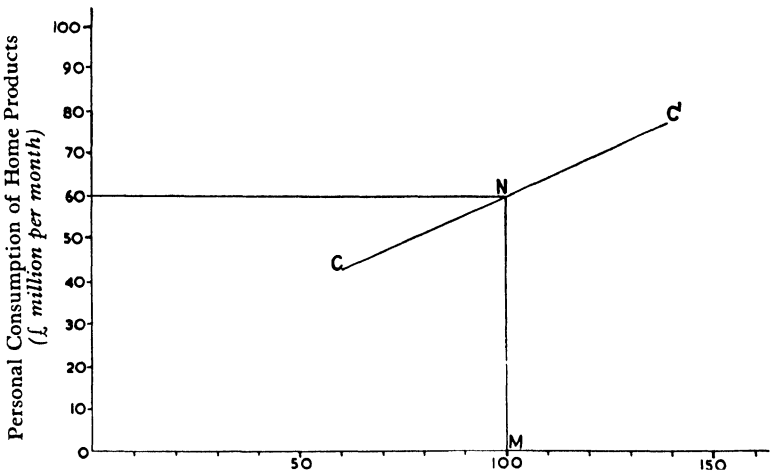


Figure 10—The Aggregate Consumption Schedule

What conclusions would it be reasonable to draw on purely *a priori* grounds about the aggregate consumption schedules of Australia or Britain?

First, that the schedule will *shift* (that is, change its position or shape) from time to time if there is a change in the community's spending habits or if there is a change in the laws governing taxation and transfer payments.

Second, that the schedule is a *rising* one, representing that personal consumption will be greater, the greater the size of the national income. This follows from our conclusion that if national

income increases, personal spendable income also increases; and that if personal spendable income increases the recipients will elect to increase their rate of consumption expenditure on home products.

Third, that the gradient of the schedule, technically known as the marginal propensity to consume, is less than unity; or, in non-technical language, that an increase of £x a month in the national income will result in an increase in personal consumption of home products by less than £x a month. This conclusion is reasonable because an increase in national income does not go in full to private citizens, but is in part taken by the government and in part retained by enterprises, and also because an increase in the spendable incomes of private citizens is unlikely to be devoted in full to increased expenditure on home products—some of the increase being used instead to pay for additional imports or to acquire obligations.

Fourth, that the schedule relates the flow of national income in any period (say a month) to the flow of personal consumption of home products *a little later on*. This is because we cannot assume that income-receivers adjust their standard of consumption expenditure simultaneously with any change in their incomes. Almost everybody takes some time, possibly only a matter of days but sometimes weeks or months, to adjust his rate of expenditure; hence the rate of consumption of home production *lags behind* the flow of national income.

CHAPTER 17

THE MULTIPLIER

WE SHALL throughout this chapter make the simplifying assumption that the aggregate consumption schedule is a *stable* schedule, i.e., that to each level of national income there corresponds a unique rate of consumption expenditure on home products.

The Equilibrium Position

The first proposition to follow this assumption is that for every level of the non-consumption sources of national income there is a unique equilibrium size of the national income. Let us call these non-consumption sources by the term adopted in the last chapter, 'X', call the national income 'Y' and the rate of consumption expenditure on home products 'C'. Then $Y=X+C$, for $X+C$ comprehends all sources of national income. Let us suppose that in one month, say January, Y has the value of 100, X of 40 and C of 60, all measured in £ millions a month. Now there must, on the aggregate consumption schedule, be some value for C corresponding to 100 for Y. Let us suppose that value happens to be 60, as in Figure 10. It follows that in January, with Y, C and X measuring respectively 100, 60 and 40, there is no tendency for C to change, for private citizens are receiving exactly the amount of income to make them want to continue expenditure on home products at the rate of 60, and so long as X remains at a level of 40, Y will continue at 100. In other words with X at 40, the *equilibrium level* of Y is 100. But what would have happened had C in January been not 60 but 61 so that Y (=101) would have been in excess of its equilibrium level? (As we shall see later on, this situation might arise if X had been greater than 40 in the months prior to January.) Since the marginal propensity to consume can be assumed to be less than unity, the value of C appropriate to $Y=101$ will be greater than 60 but less than 61; hence, if X remains at its January level of 40, C in February will be less than 61 and hence Y less than 101. The fall in Y will then provoke another fall in C and therefore in Y, and so on until C has fallen to 60 and Y to 100. Thus if, as in this example, the equilibrium level of Y is 100 when X is 40, Y can exceed 100 only temporarily so long as X remains at 40. Likewise Y can fall short of 100 only temporarily if X remains at 40.

Why, in our example, does Y=100 happen to be the equilibrium value of Y corresponding to X=40? Because the aggregate consumption schedule is such that Y−C=40 when Y=100. This point will be clearer by reference to Figure 11.

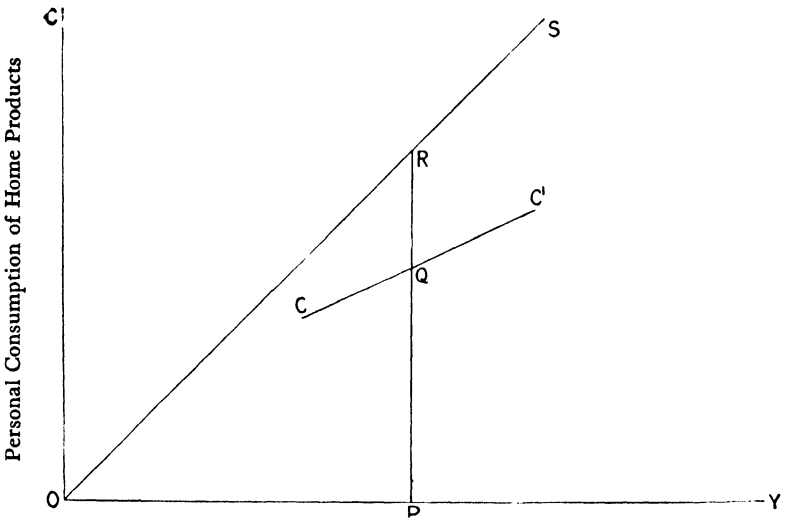


Figure 11—The Aggregate Consumption Schedule

This diagram shows a consumption schedule as in Figure 10, on a scale such that OP=100 and PQ=60. OS is then drawn to bisect the angle between the two axes. Thus if we drop a perpendicular RP from OS to point P on OY, RP is necessarily equal to OP. Hence if CC' is the aggregate consumption schedule (intersecting RP at Q) and OP (=RP) is some given value of Y, QP is the rate of consumption expenditure on home products which income-receivers would choose to maintain if the national income remained at OP, while RQ (=OP−QP) is the value of X which (with consumption of home products equal to OP) will ensure that the national income *does* remain equal to OP. Thus given that CC' is the aggregate consumption schedule, the equilibrium value of Y corresponding to X=40 is obtained by finding the answer to the question: 'at what value of Y does the vertical distance between OS and CC' correspond to 40'? With the consumption schedule we are assuming, the answer happens to be, Y=100.

Let us look again at the case where X=40 in January and stays at the rate, but where the *actual* value of Y in January is not 100 (the equilibrium value) but 101, the actual value of C being 61. Let us see how equilibrium is reached, simplifying the argument by means of two assumptions:

1. That the marginal propensity to consume is exactly *one half;* i.e., that one half of any increase in the national income will always be devoted to consumption expenditure on home products. This corresponds to the assumption that the aggregate consumption schedule is a straight line (which of course it need not be) with a gradient of one half.
2. That income-receivers base their consumption expenditure in any month on their incomes in the previous month. (On this assumption the aggregate consumption schedule tells us what value of C *next* month will result from a given value of Y *this month.*)

The sequence of events is shown in Table 21:

TABLE 21

Month	*Non-Consumption Sources of National Income (X)*	*Consumption of Home Products (C)*	*National Income (Y)*
	£	£	£
January	40,000,000	61,000,000	101,000,000
February	40,000,000	60,500,000	100,500,000
March	40,000,000	60,250,000	100,250,000
April	40,000,000	60,125,000	100,125,000
May	40,000,000	60,062,500	100,062,500
Ultimately, per month	40,000,000	60,000,000	100,000,000

The table must be interpreted thus:

January. The figures are as we have already assumed.

February. We know that, according to the aggregate consumption schedule which we have assumed, if Y (in £'s) is 100 millions in any one month then C will be 60 in the next month. Hence, since the marginal propensity to consume is assumed to be one half, if Y is 101 millions in any one month C will be 60·5 millions in the next month. Thus, as Y is 101 millions in January, C is 60·5 millions in February. Therefore Y in February equals 100·5 millions, generated by X (=40 millions) and C (=60·5 millions).

March. Since Y decreased by 500,000 between January and February, C (which lags one month behind Y and changes by half the amount) falls by 250,000 between February and March, so that in the latter month C declines to 60,250,000 and Y to 100,250,000.

Later Months. The process continues in later months, C and Y falling all the time but by amounts which become less and less as time goes on. The ultimate monthly rate of Y can be calculated by noting that Y falls by 500,000 between January and February, by 250,000 between February and March, by 125,000 between March and April, and so on; the sum of the successive decreases being

$$500{,}000\ (1+\tfrac{1}{2}+(\tfrac{1}{2})^2+(\tfrac{1}{2})^3+\text{etc.})$$

which is equal to[1]

$$500{,}000 \text{ times } \frac{1}{1-\frac{1}{2}}, \text{ or } 1{,}000{,}000$$

Thus, if X remained steady at 40 millions a month, Y would ultimately decline by one million from 101 to 100 millions a month and the ultimate value of C would be 60 millions a month. Hence both Y and C would ultimately reach their equilibrium values corresponding to X=40 millions.

Changes in the Equilibrium Position

The second proposition which follows from our assumption of a completely stable aggregate consumption schedule is that if in any month, or other period, X and Y are in equilibrium (so that there is no tendency for C to change except as the result of a prior change in Y) any later change in X will have a *multiplied* effect on Y. Thus, in our example, if X increased from 40 millions a month to 41 millions a month, Y would ultimately increase not to 101 but to 102 millions a month. This can best be demonstrated by a suitable adaption of Table 21, shown below as Table 22:

[1] The sum to infinity of a geometric progression of the form: 1, c, c^2, c^3, c^4, etc., is $\frac{1}{1-c}$ provided that c (as in this case) is less than unity.

TABLE 22

Month	*Non-Consumption Sources of National Income (X)*	*Consumption of Home Products (C)*	*National Income (Y)*
	£	£	£
January	40,000,000	60,000,000	100,000,000
February	41,000,000	60,000,000	101,000,000
March	41,000,000	60,500,000	101,500,000
April	41,000,000	60,750,000	101,750,000
May	41,000,000	60,875,000	101,875,000
June	41,000,000	60,937,500	101,937,500
Ultimately, per month	41,000,000	61,000,000	102,000,000

The table must be interpreted thus:

January. Y and C are at their equilibrium values corresponding to X=40 millions a month.

February. X increases by one million, but C, which is related to Y in the previous month, remains at 60 millions. Thus Y in February is 101 millions.

March. Since Y increased by one million between January and February, C, which lags one month behind Y and changes by half the amount, increases by 500,000 between February and March. Thus in March C=60,500,000 and Y=101,500,000.

Later Months. The process begun in March now continues, C and Y rising all the time but by ever decreasing monthly amounts. Since successive monthly increases in Y are 1,000,000, 500,000, 250,000, 125,000, etc., the ultimate increase in Y is:

$$1{,}000{,}000\ (1+\tfrac{1}{2}+(\tfrac{1}{2})^2+(\tfrac{1}{2})^3+\text{etc.}),$$
$$=\frac{1{,}000{,}000}{1-\frac{1}{2}}=2 \text{ millions.}$$

Thus in this example, where the marginal propensity to consume is assumed to be one half, X's increase by one million in February, and its continuance at this higher level, results eventually in an increase of two millions in Y, on account of a series of consequential increases in C. The ratio of the ultimate increase in Y to the initiating increase in X *(two* in the above example) is known as the *Multiplier.*

More generally, if the marginal propensity to consume is not one half but *c,* an increase (decrease) of one million in X leads to an ultimate increase (decrease) in Y equal to:

$$1{,}000{,}000\ (1+c+c^2+c^3+\text{etc.}) = \frac{1{,}000{,}000}{1-c}$$

so that the general formula for the Multiplier, which we usually designate by k, is:

$$k = \frac{1}{1-c}$$

where c is the marginal propensity to consume.

Time-Lags

The outcome of the above argument is that on the assumption of a stable aggregate consumption schedule there is an equilibrium rate of national income (Y) and of personal consumption of home products (C) corresponding to each size of X. If in any period Y and C are not in equilibrium with respect to the current size of X, a series of adjustments occurs which bring Y and C nearer and nearer to their equilibrium values, provided of course that X does not change in the meantime. Again, if Y and C begin by being in equilibrium with respect to the current size of X and then X (and hence Y) increases, there follows a series of increases in C (and hence also in Y) as the result of which C and Y approach their new equilibrium values corresponding to the larger X—provided, in this case too, that X does not change again in the meantime.

In practice the 'Multiplier effect' initiated by an increase in X inevitably takes some time to 'work itself out'. As we concluded in the previous chapter, changes in C tend to lag behind changes in Y, and quite a number of changes in Y may be needed before the Multiplier effect dies down. In the numerical example we have used it has been assumed that the lag between Y and C is invariably one month, but this simple assumption was adopted for expository purposes only and makes no pretence of being realistic. In the first place our assumption failed to distinguish between two distinct time-lags, the interval between income and expenditure at times when income is flowing at a steady monthly rate and the (probably longer) interval between an *increase* in income and the resulting increase in consumption. It is the latter interval—the *consumption time-lag,* as we shall call it—which is relevant to the theory of the Multiplier. In the second place, it is clearly unrealistic to suppose that the consumption time-lag is the same for all income-receivers and on all occasions. In practice any assessment of the consumption time-lag of the community as a whole is sheer guesswork, but

it is reasonable to suppose that, given an increase in personal spendable income, a representative selection of income-receivers (including poor, middle class and well-to-do) would make a high proportion of the adjustment to their consumption expenditure inside two months. Many income-receivers, including most wage-earners, would of course react much more quickly, and might quite possibly make the full adjustment to their consumption in the week following the increase in their income. Thus, if this reasoning be accepted, the consumption time-lag is a fairly short one.

However, the period taken by the Multiplier effect to work itself out is compounded of a *series* of consumption time-lags. This point can be illustrated by taking the figures in Table 22 and comparing the increase in Y with that in X:

TABLE 23

Month	*Increase, compared with January, in:*		*Col. 2 ÷ Col. 1*
	Non-Consumption Sources of National Income (X) 1	*National Income (Y)* 2	3
	£	£	
February	1,000,000	1,000,000	1·0
March	1,000,000	1,500,000	1·5
April	1,000,000	1,750,000	1·75
May	1,000,000	1,875,000	1·875
June	1,000,000	1,937,500	1·9375
Ultimately, per month	1,000,000	2,000,000	2·0

It will be seen that only after some four consumption time-lags have elapsed does the Multiplier work substantially up to its full value. This suggests that in practice, the Multiplier may not have time to 'work itself out', even approximately, for any given value of X; for X in practice is likely to vary more or less continuously and may change quite appreciably during a period as long as four consumption time-lags.

We can see now that Figure 11 needs to be interpreted with considerable caution, because there are two relationships involved, with two different time-lags:

1. The aggregate consumption schedule CC^1 in Figure 11 is, we have supposed, drawn to show the flow of personal consumption of home products (C) which would result, after a period equal to the consumption time-lag, from any given size of national income (Y).

2. Figure 11 also tells us that given the aggregate consumption schedule it is possible to read off the *eventual* or equilibrium size of Y which would correspond to any given size of X, supposing that X remained constant long enough for the Multiplier effect to work itself out.

The second of the relationships illustrated by Figure 11, namely the relationship between X and Y, is best regarded as only a theoretical relationship, one which obtains only in a hypothetical state of equilibrium. In other words, we can deduce from an aggregate consumption schedule, in respect of any size of X, the value towards which Y tends to move, but which Y would not in fact achieve, except fortuitously, unless X remained constant for many months.

It may also be noted here that the relationship between X and Y illustrated in Figure 11 is not the only relationship between the two variables. Figure 11 implies that an increase in X results in due course in a greater increase in total income-generating expenditure and thus in the national income, but as we shall see in Chapter 19 any increase in income-generating expenditure may well lead in turn to a further increase in one of the components of X, namely in material investment of home products. It is the interaction of these relationships between X and total income-generating expenditure which provides the basis for the explanation, offered in Chapter 20, of the cumulative spirals of depression and recovery which have been such a conspicuous feature of British and Australian economic history.

CHAPTER 18

THE CONSUMPTION SCHEDULE

Money and Real Income

THE PURPOSE of this chapter is to relax the assumption, made in Chapter 17, that the aggregate consumption schedule is a stable and unique one, i.e., that there is a certain unique rate of consumption expenditure on home products (C) always associated with each value of the national income (Y).

The first point we have to consider is that the shape of the consumption schedule is likely to be different, according to whether a given change in personal income is, or is not, accompanied by a change in the prices of commodities which people buy with their incomes. Let us take a simple example. If my spendable income increases by 10 per cent but at the same time all the goods and services I habitually consume now cost 10 per cent more, it is surely probable that I shall merely go on buying the same goods and services as before, but pay 10 per cent more for them. In other words, my income and my consumption, in money terms, will both be 10 per cent higher than before; hence the proportion of the *addition* to my income used for consumption will be the same as the proportion of my *original* income so used.

Contrast this outcome with a situation where my money income increases by 10 per cent without there being any change in the prices of the goods and services which I buy. In this case the command which my income gives me over goods and services is 10 per cent greater, and any increase I make in my consumption expenditure represents an improvement in my standard of living. What in these circumstances shall I do with my additional income? On the one hand I may save most of it, i.e. use it to accumulate obligations; at the other extreme I may increase my consumption proportionately (or even more than proportionately, though this is rather unlikely) to my income. In any case there is a presumption that the change in my consumption expenditure will be different according to whether or not the increase in my income is accompanied by an increase in prices.

We see therefore that the aggregate consumption schedule cannot be expected to give the same answer to two quite different questions. It can be made to represent how C changes when money national

income changes but prices do not, or how C changes when prices and money national income change in the same proportion, but clearly it cannot represent both these things at the same time. Which of the two versions are we to choose? Version *one,* as it stands, is strictly speaking almost useless, since, as we saw in Chapter 15, it is rare for the national income to change, even at times of widespread unemployment, without *some* change in prices. Nevertheless, as we shall shortly see, a modification can be made to this version of the aggregate consumption schedule to render it applicable to circumstances when changes in income-generating expenditure are only in part in the price dimension. Version *two,* on the other hand, is obviously applicable only to circumstances when income-generating expenditure changes solely in the price dimension. Thus version *one,* suitably modified, is to be used when we are dealing with a situation of less-than-full employment, while version *two* is to be used when we are dealing with a situation of full employment. From now on, therefore, we must always be clear as to which of these situations we have in mind.

The peculiarities of a fully employed economy will be discussed in Chapter 21: until then we shall be assuming a less-than-fully employed economy. Hence we can forget about version *two* of the aggregate consumption schedule until we get to Chapter 21, and interest ourselves instead in making use of version *one.*

How can this version be modified to take full account of the fact that, even at times of less-than-full employment, there rarely occurs a change in the money national income without some concomitant change in prices? What is clearly required is some means for measuring C and Y, and indeed all categories of expenditure and income, so as to show what they would have been *had prices been the same as in some base year.* What we need, in other words, is to be able to measure all flows of expenditure and income not in *money* terms (as in Table 9) but in *real* terms, allowing for any changes in prices compared with whatever year we choose as base.

A simple, if rather approximate, way of expressing in real terms statistics of expenditure and income in successive years (or other periods) is to divide each year's figures by the proportionate change in prices which has occurred since the base year, measuring the proportionate change in prices by means of an index of the prices of the final output of home products. Thus if the year selected as base were 1957 and the price index, compiled in the manner described in Chapter 15, happened to be 110 in 1958 and 120 in

1959, then all the 1958 statistics of expenditure and income would be divided by 1·1 and all the 1959 statistics by 1·2. This procedure for converting figures of expenditure and income from money to real terms unfortunately suffers from the defect of being somewhat rough and arbitrary. In the first place, as we saw in Chapter 15, *any* index number of prices is to some extent approximate, partly owing to the index number problem, partly because of the difficulty of collecting accurate data. Secondly, the price index appropriate to final output as a whole may be inappropriate to some particular sector of final output or category of national income. Thus the overall price index might increase between 1957 and 1958 mainly on account of a rise in export prices or (to take a less plausible example) in the prices of industrial equipment, without much change in the prices of products bought by consumers. If such were the case, the adjustment of consumption expenditure and of national income in 1958 to a real basis by the procedure we have considered would lead us to underestimate both the volume of personal consumption in 1958 and the purchasing power of the 1958 national income over *consumption* goods and services. On the other hand the procedure of adjusting all components of expenditure and income by reference to a single overall index number has the great merit of simplicity, and since with certain notable exceptions, prices in different sectors of an economy tend to change in rough conformity,[1] it is doubtful whether a more sophisticated procedure would result in an improvement in accuracy sufficient to justify the introduction of many new complications. We shall, therefore, throughout this book, mean by *real* national income, *real* consumption, *real* exports, *real* investment, and so on, simply that the money figures have been adjusted by reference to changes in an overall index of prices, such as the one described in Chapter 15.

Changes in the Real Aggregate Consumption Schedule

Let us now consider the possibility of changes in the real aggregate consumption schedule. In what circumstances should we expect changes in real personal consumption of home products *not* due to changes in real national income? One reason for such *autonomous* changes in the former is a change in the laws governing taxation

[1] The most important exception to this generalization is in the case of the prices of Australian exports. Australian exports are mainly primary commodities, the prices of which vary more than the prices of other Australian products.

and transfer payments. An increase in the rate of most taxes, if unaccompanied by a corresponding increase in transfer payments, reduces the amount of real income going to private citizens out of a given real national income, and thus tends to induce them to reduce their real expenditure on home products. This is most obvious in the case of an increase in the rate of a direct tax, such as income-tax, but it may well be equally true of indirect taxes levied on goods and services. An increase in indirect taxes is passed on to the final purchaser in the form of higher prices for the goods and services comprising final output; hence the initial result is an increase in money national income unaccompanied by an increase in real national income. All the increase in the money national income goes (in taxation) to the government; consequently a higher proportion of the increased money national income *and also of the unchanged real national income* now goes to the government. Thus the real income of private citizens is reduced and, as a consequence, their real consumption. Will the reduction in real consumption take the form of a reduced consumption *of home products?* Almost certainly yes, provided that the new taxes are levied as much on home-produced as on imported goods. If, however, the new taxes are mainly import duties, it is quite likely that (even though total real consumption is reduced) there will be such a diversion of expenditure from imported to home-produced goods that real consumption of home products will increase, not diminish.

We now pass to changes in the laws governing transfer payments. Any increase in the rates of benefit applicable to child allowances, pensions and such-like cash social service benefits, if unaccompanied by an increase in taxation, has the effect of increasing the share of personal spendable income in total national income and thus of inducing an increase in consumption expenditure on home products. A similar effect results from the re-financing of government debt on less favourable terms, i.e. the replacing of one government liability with another bearing a higher initial rate of interest.

Having looked at the most important factors which might change the share of a given national income going to private citizens, let us consider some of the possible causes of a change in the relationship between personal spendable income and personal consumption of home products, both measured in real terms. There are many factors, besides the level of personal income, which influence the rate of consumption of home products. First, if there is a change

in the relative prices of home-produced and imported goods (due, for instance, to the imposition of a tariff) or if anything else happens to affect consumers' preferences as between home-produced and imported goods, this will have the effect of altering the consumption schedule. Second, changes in the distribution of personal income as between people who spend a high proportion of their incomes and those who save a great deal of their incomes are very likely to affect the amount of consumption expenditure on home products. Such changes may conceivably occur quite fortuitously, or alternatively they may be attributable to some definite factor. Thus a general rise in wage rates (as we shall see in Chapter 20) is likely to redistribute personal income in favour of the poor (who are unable to save heavily) and thus to increase personal consumption of home products. A similar result is achieved if the government takes steps to redistribute personal income in favour of the poor. This it can do by repealing taxes which everybody has to pay (e.g. excise duties on necessities) and replacing them by taxes falling exclusively on the rich (e.g. taxes on luxuries). Alternatively, the government can increase cash social benefits enjoyed equally by all or exclusively by the poor, financing the outlay by levying higher taxes on the rich.

A third reason for a change in consumption expenditure on home products, given the size of personal spendable income, is the growth of new tastes, or the introduction of new modes of living, or of new commodities. To give a single example, the introduction of wireless may well have resulted in people saving less of their incomes, in order to spend more on radio sets. Fourth, whenever personal consumption is financed by drawing on reserves or by borrowing, this will disturb the normal relation between personal consumption and personal income. The finance of personal consumption out of reserves, as well as out of current income, may assume large and dangerous proportions at times when a rapid decline in the purchasing power of money is occurring or is expected to occur,[2] but at other times it is not likely to be important except when a range of durable consumption goods comes on to the market for the first time or after a long period of non-availability. As to personal consumption financed by borrowing, the only important example is the buying of goods on a hire-purchase basis. (The definitions we adopted in Chapter 14 class house-purchase as investment, not as consumption.) If there is a

[2] See ch. 21.

'boom' in hire-purchase, as there was in the U.S.A. after both world wars, this will temporarily increase the amount of personal consumption maintained out of a given income, i.e., cause a temporary upward shift of the consumption schedule. However, apart from the examples quoted, it is difficult to say to what extent the finance of consumption expenditure out of borrowing has influenced total consumption expenditure.

Fifth, it has been argued, on a number of grounds, that the amount of a person's consumption, out of a given income, is influenced by changes in the rates of interest. On the one hand, it has been argued that the higher the yields on obligations, the more likely is an income receiver to buy such obligations with his income, in preference to buying consumption goods. Thus it is held, a rise in interest rates *deters* consumption. On the other hand, it has also been argued that a higher yield on long-term fixed-interest obligations enables an investor to secure a given income from such obligations with a smaller capital outlay, so that a rise in interest rates would induce people to devote less of their incomes to buying obligations and *more* to buying consumption goods. No satisfactory evidence is available to support either of these two theories, which are in any case mutually contradictory. A third theory, advanced by Lord Keynes, maintains that a fall in the long-term rate of interest influences personal consumption expenditure on account of the capital gains which accrue to anyone who holds bonds while the fall in yield (rise in price) is occurring. According to this theory, the Wall Street boom in 1929, when security prices soared rapidly and subsequently collapsed, would have resulted in an abnormally high rate of consumption during the period of rising security prices and an abnormally low rate of consumption while prices were falling. The statistical evidence on consumption in the U.S.A. during the periods in question has been investigated, but it gives little support to the Keynesian thesis. (For instance, it is significant that, in the statistical example which follows, 1929 does not appear to be an abnormal year.)

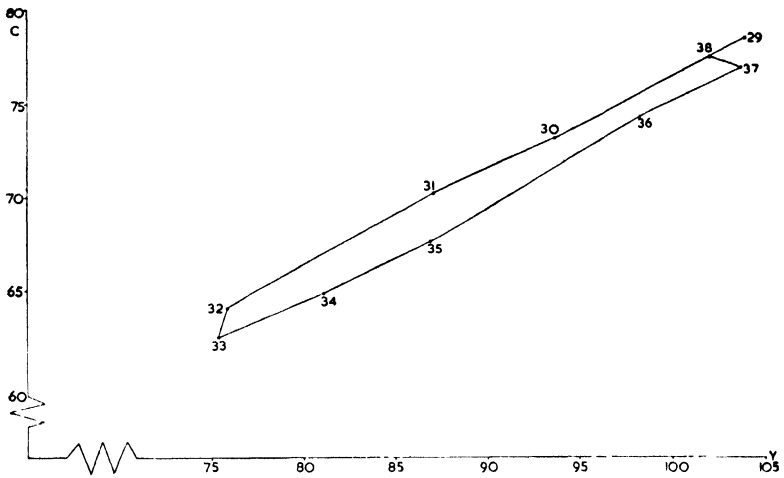
A Statistical Example

We now know of a number of possible reasons for changes in the aggregate consumption schedule. So far, however, we have merely been speculating in general terms, without attempting to assess how important these considerations are in practice. The most appropriate way of deciding this question would be to construct a

diagram, like the one shown below in Figure 12, with axes representing the annual real national income (Y) and annual real consumption of home products (C), and with points marked in to represent the recorded values of Y and C in a number of successive years in some one country. For if, on constructing such a diagram, we found that all the points marked lay on a single continuous and smooth line, we might reasonably conclude that this line was indeed the real aggregate consumption schedule of the country in question, and that this schedule had not shifted during the relevant period. But, lest we should expect too much from this procedure, let us take stock of the difficulties involved. First, in all countries the available figures of Y and C are only estimates, and usually rather doubtful estimates. Moreover, the methods by which the estimates are made are such that they may well lead to an erroneously close relationship between successive pairs of values of Y and C, i.e. the points corresponding to successive pairs of annual *estimates* of Y and C may well lie more nearly on a smooth, continuous line than the pairs of *actual* values of Y and C would have done, had they been accurately ascertainable. The best way of reducing this difficulty is to use American statistics, which have been compiled on a reliable basis for a longer period than those of Australia and Britain. Second, since C is defined as excluding imports for consumption, the procedure we are considering requires us to separate imports for consumption from those to be used by the government, for re-export, or for investment purposes. Such a separation would necessarily be arbitrary in the case of certain commodities, such as metal ingots, coal or tinplate, the uses of which are very varied. If, however, we use American statistics, we can ignore this problem altogether, for imports are very small in relation to total consumption. Third, since we wish to compare Y and C in real terms, we must choose for our investigation a period of *varying output*. As pre-1929 figures of national income and consumption are rather unsatisfactory, we are therefore in effect limited to the 1930's and early 1940's. Fourth, we must consider a period of years during which Y fluctuates, instead of merely increasing (or alternatively falling) steadily, for a continuous increase in Y, and therefore in C, would in all probabilty result in annual pairs of values lying along a smooth continuous line, even if some of the change in C were in fact independent of Y. (If Y at some stage began to decline, any lack of dependence of C on Y would immediately be revealed.) Fortunately for our

purposes, the United States' national income declined considerably after 1929 but recovered fully by 1938, so that this fourth difficulty can be avoided if we consider the period 1929-38.

Having chosen the U.S.A. in the 1930's as the only suitable field from which to draw our statistics, and having also reminded ourselves of some of the difficulties, let us now turn to our data, which are set out in Table 24 and plotted in Figure 12.



C = Real Personal Consumption in $ billion a year at 1929 prices
Y = Gross Real National Income in $ billion a year at 1929 prices

Figure 12—Income and Consumption in the U.S.A., 1929-38

Columns 1 and 3 of Table 24 are the U.S. Department of Commerce's estimate of the money value of *gross national income* (or gross national product, as they call it) and of *personal consumption,* as published in the Federal Reserve Bulletin of September 1947. Columns 2 and 4 are the same figures expressed in real terms by being adjusted for changes in an index (Column 5) of the prices of the final output of goods and services. This index is taken from Kuznets' *National Income and its Composition,* where it appears as column 7 of Table 4 on page 145. Referring now to Figure 12, it will be seen that the points corresponding to each of the years 1929 to 1938 do not lie precisely on a single line, but that instead they lie on one line during the period when Y is falling and on another (and rather lower) line during the period when Y is increasing. This lack of agreement between the results in the two

periods may be attributed to the consumption time-lag. When Y is increasing, the simultaneous value of C underestimates the equilibrium value of C which would eventually result from any particular value of Y; hence the points recorded on the graph should be raised a little to enable us to see the equilibrium relationship between Y and C. Similarly, when Y is falling, the points recorded on the graph need to be lowered a little. If these adjustments could be made it is possible that all the points on the diagram would then lie along a fairly smooth line. The line in question would be approximately straight, with a gradient of a little over *one half*. This statistical evidence, for what it is worth, therefore suggests that over the period 1929-38 the United States' real aggregate consumption schedule was reasonably stable and that the marginal propensity to consume, over the actual range of variation of Y, was about *one half*, corresponding to a Multiplier of *two*.

The Consumption Schedule and the Multiplier

In Chapter 17 we considered the *Multiplier effect* as the sum of the series of consequential increases in the consumption of home

TABLE 24

Gross National Income and Personal Consumption in the U.S.A., 1929-1938

Year	Gross National Income		Personal Consumption		Index of Prices 1929 = 100
	In money terms	In real terms	In money terms	In real terms	
	1	2	3	4	5
	$ billion	$ billion	$ billion	$ billion	
1929	103·8	103·8	78·8	78·8	100
1930	90·9	93·7	70·8	73·0	97
1931	75·9	87·2	61·2	70·3	87
1932	58·3	75·7	49·2	63·9	77
1933	55·8	75·4	46·3	62·5	74
1934	64·9	81·1	51·9	64·9	80
1935	72·2	87·0	56·2	67·7	83
1936	82·5	98·2	62·5	74·4	84
1937	90·2	103·7	67·1	77·1	87
1938	84·7	102·0	64·5	77·7	83

products (C) occurring as the result of an increase in any of the other four sources of national income, collectively labelled X. The Multiplier was defined as the full increase in national income (Y), arising both from the increase in X and from the consequential increases in C, divided by the increase in X alone. The size of the Multiplier, we found, was given by the formula

$$k = \frac{1}{1-c}$$

where k is the Multiplier and c the marginal propensity to consume, the latter corresponding to the gradient of the aggregate consumption schedule.

What we have now to note is that an upward (or downward) shift of the aggregate consumption schedule provokes exactly the same Multiplier effect as an increase (decrease) in X. Thus supposing that, as shown in Figure 13, there is an upward shift of the aggregate consumption schedule from CC' to cc', so that without a prior increase of the national income, the initial size of which corresponds to OA, the rate of consumption of home products autonomously increases by an amount corresponding to the distance PQ.

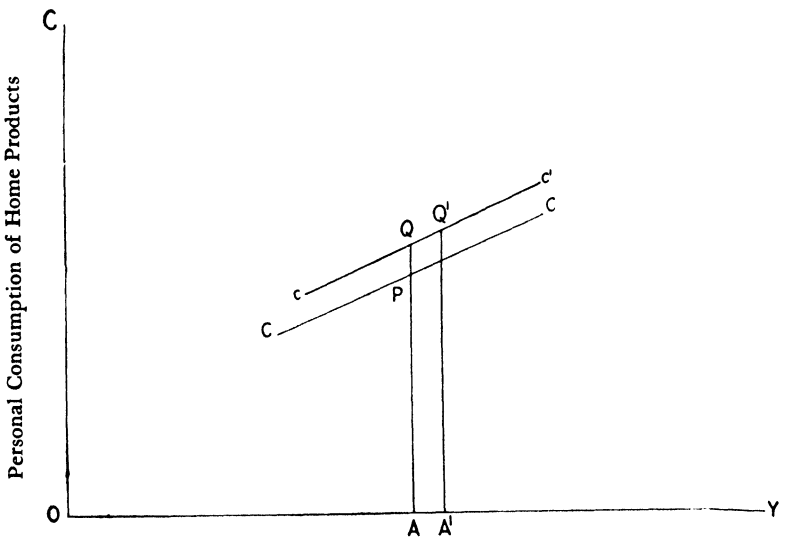


Figure 13—A Shift in the Aggregate Consumption Schedule

Then, corresponding to this increase in C, there must be an equal and simultaneous increase in Y, for consumption of home products is a source of national income. Hence, unless by chance there happened to be an offsetting fall in X, Y would increase from OA to OA^1, where $AA^1=PQ$. Thus Y would be equal to the horizontal distance OA^1 and C to the vertical distance AQ. But, according to the schedule cc^1, the level of C appropriate to $Y=OA^1$ is not the distance AQ, but the (greater) distance A^1Q^1. Hence, after a time-lag, there would be a second increase in C (corresponding to the excess of A^1Q^1 over AQ), and therefore a second increase in Y. This process would continue indefinitely, but since each increase in Y would be less than the preceding one the full increase in Y would be finite. Moreover, as can readily be shown, the size of the full increase is given by the Multiplier, being equal to the initial increase PQ multiplied by the fraction

$$\frac{1}{1-c}$$

where c is the marginal propensity to consume.

CHAPTER 19

MATERIAL INVESTMENT

OF THE five sources of national income distinguished in Chapter 16, we have so far considered the causes of variations in only one, namely personal consumption of home products. We have therefore now to deal with the remaining four sources, and for convenience of exposition we had best begin with *material investment of home products*. We shall consider variations in this source (as we did variations in personal consumption in the previous chapter) in real terms.

Investment Projects[1]

The flow of real investment of home products (i.e. material investment of home products, measured in real terms) is due to individual enterprises carrying out investment projects. In each enterprise some person or group of persons—whom we may call the 'entrepreneur' of the enterprise—has from time to time to make a definite decision to go ahead with this or that project: otherwise the flow of real investment would in due course peter out altogether.

The attractiveness to an entrepreneur of a project for material investment depends on:

1. The additional return (i.e. the additional sales proceeds minus any additional operating expenses, e.g. wages, salaries, materials) which he expects to accrue to the enterprise in the future, as the result of acquiring projected new material assets. Let us call this the 'prospective return' from the investment project.
2. The terms on which the enterprise can finance the acquisition of the new material assets. Let us call this the 'terms of finance'.

When an entrepreneur reviews the possible investment projects he might undertake, with a view to selecting the best, there is no reason for believing that he will choose the one which calls for the largest capital outlay. There is indeed a variety of factors which tend to make a large project less attractive than a smaller one. Let us consider these factors in two stages, according to whether they relate to the prospective returns of projects or to the terms on which finance for them can be obtained.

[1] In this and the following section I have, with the editor's kind permission, quoted extensively from my article on 'The Finance of Investment', published in the July 1952 issue of *Oxford Economic Papers*.

1. If the different projects are arranged in order of size, their prospective returns may, beyond a point, fail to increase proportionately with the financial outlay required. The prospective returns of a project arise in either or both of two ways: first, the project may make possible an increased output,[2] and second, it may make possible the production of the same output with lower operating costs. In the first case, the larger the outlay the larger will be the increase in output-capacity, and consequently the greater will be the problem of finding customers for the extra output. This problem can perhaps be mitigated if a greater variety of goods is produced, instead of more of the same kind, but only by incurring the trouble and expense of launching out in new directions. There may also, with a large project, be difficulty in obtaining the appropriate complement of labour or of raw materials. In the second case, where the project aims at reducing operating costs, the extent to which it is worth while to incur investment expenditure to this end is obviously limited by what is technically possible. (The entrepreneur cannot install labour saving machinery if it has not been invented.)

2. The terms of finance may be increasingly unfavourable to the entrepreneur, the larger the amount of finance which he requires for his project. This point requires to be considered at some length.

The source of finance most readily available to an enterprise for financing an investment project comprises its own reserves of liquid or marketable assets—such as a time deposit or government bonds. The amount of such assets already held by an enterprise at any point of time is however a fixed sum, so the supply of internal finance is inevitably limited. But even before the limit is reached, the entrepreneur will draw on his reserves with reluctance, since they are the basis of the liquidity of his enterprise and the more they are drawn upon, the more illiquid will the enterprise become.

The other sources of finance available to an enterprise all involve borrowing from, or issuing equity to, outside investors. When an enterprise seeks finance from outside, there are two general considerations, besides several more specific ones, which may limit the total amount available, or at any rate worsen the terms of finance the larger the amount required. The first general consideration is simply that outside investors are very far from unanimous in their attitude to an enterprise: a given enterprise can usually get a larger amount of outside finance only by seeking subscriptions from investors who are less interested, or less well informed, or less trusting, and who consequently need to be tempted by better terms.

[2] 'Output' is here used in a broad sense, to mean 'volume of sales'.

The second general consideration is that the number of outside investors capable of fully understanding the potentialities of a given project is usually very small; the rest have therefore good reason to be cautious about believing in the additional profit which the new project is alleged to assure and to concentrate their attention instead on how they would fare if the profits available for paying interest or dividends did not greatly increase beyond their level in the recent past. If such is the attitude of outside investors they will naturally conclude that the larger the amount of new capital sought by an enterprise the more thinly will future profits have to be spread.

In addition to these two factors affecting the availability of all types of outside finance there are two important factors affecting respectively equity and fixed-interest finance: the former factor being the danger of weakening the existing controlling interest, the latter the danger of excessively high gearing.

The seriousness of the former differs very greatly from case to case. A controlling group is usually secure if it owns over half the equity capital of an enterprise, so that an enterprise can issue equity freely so long as this criterion is satisfied and thereafter further issues are all right if at least a half can be taken up by the existing controlling group. If this were the whole story the limitation on equity financing would usually be serious, since the existing members of a controlling group normally have only limited resources for new subscriptions and the number of new shareholders who could be absorbed into the group without undermining its cohesion would normally be strictly limited. Admittedly there are effective ways of securing control without owning 51 per cent of the equity;[3] but on the whole these apply almost solely to giant corporations. *Most* enterprises *are* severely limited in the amount of new equity they can issue without weakening the existing controlling interest, and most controlling groups are more or less reluctant to weaken their position. In consequence, the greater the amount of new equity finance required for an investment project, the worse will the terms of finance tend to become, if we subsume in 'terms of finance' *all* the sacrifices (whether monetary or not) which are involved in obtaining the finance.

If the amount of equity finance which it is possible or prudent to obtain for a project is limited, only a limited amount of fixed-interest finance can be accepted without causing a more highly

[3] See pp. 31-2.

geared[4] capital structure. High gearing may be disliked by the equity holders in an enterprise, since it reduces the stability of the distributable profits and increases the risk of bankruptcy: it is equally disliked by the fixed-interst creditors, since it increases the risk that the enterprise will not be able to meet their claims to interest and repayment. Thus a given enterprise with a given availability of additional equity finance may have to pay a higher rate of interest the greater the amount of its fixed-interest borrowing, to compensate the lenders for the additional risk; and (more important) there will almost certainly be an absolute ceiling to the total amount of new borrowing, representing either the maximum amount which lenders are prepared to lend or the maximum amount which the controlling group of equity holders is prepared to borrow. (In practice the two parties are often in close agreement as to the height of the ceiling.)

Thus far our argument has been equally applicable to investment in fixed equipment and to investment in inventories, except in one important respect. This is that it is frequently possible to borrow on short-term against inventories up to a substantial proportion of their value on terms which are virtually unaffected by the size of the amount borrowed. Accommodation of this kind is provided mainly by the banks and the discount houses, or in the form of trade credit. But such accommodation is available only to satisfy *part* of the entrepreneur's requirement for finance: a trader whose assets are entirely inventories may hope to get half or even more of his finance from his bank,[5] but he obviously would not get *all* his finance in this way since this would put him in a position of acute financial embarrassment,[6] and in finding the balance he is liable to encounter all the difficulties which would obtain had he been trying to finance new fixed equipment.

The Flow of Real Investment

Now if the entrepreneur decides, on a certain date, to undertake some particular investment project, limited in size by the conditions of supply of finance or by less-than-proportional prospective returns, or by a combination of both, this project need not of course be the only one he will ever undertake. The fact that it is in his interest to choose a £1 million project in 1930, in preference to a

[4] See p. 44.

[5] The precise proportion will depend on many factors, including the prevailing views as to the future course of commodity prices.

[6] See pp. 44-5.

£2 million project, does not preclude the possibility that it may be in his interest to invest a second £1 million in 1940. For projects which are unattractive, unfeasible, or even inconceivable at one date may well become more eligible with the passage of time, due to developments which improve either their prospective returns or the terms on which they can be financed. Any theory about the flow of real investment per annum must be concerned with the analysis of such favourable events, as well as with events which serve to increase the relative attractiveness of large projects, as against small ones. Anything which leads an entrepreneur to adopt bigger investment projects, or to adopt them more frequently, is favourable to the flow of real investment, and vice versa.

Many theories about the flow of real investment deal with events which favour the improvement in prospective returns. One such favourable event is the wearing out or obsolescence of machinery and other equipment, which improves the prospective returns from new machines to be used in their place. There may also be inventions and discoveries which make new projects feasible. Or again, there may be an increase in real income-generating expenditure, which from the point of view of the enterprises affected means an increase in the volume of sales. However, these considerations—several of which are dealt with in the next two sections of this chapter—need, as their complement, an analysis of the events which, with the passage of time, improve the terms on which an enterprise can obtain finance for investment.

In theories which have paid attention to the effect of the terms of finance on the flow of real investment, the 'terms of finance' have usually been taken to mean either the short-term rates of interest, especially the overdraft rate and the bill rate, or the long-term bond rate of interest. This, however, as we saw in the previous section, neglects aspects of the terms of finance which are likely to be of greater importance in practice—questions of liquidity, of gearing, of preserving the existing controlling interest, and of the limited nature of the market for any particular company's securities. We shall consider the effect of interest rates later in this chapter but already we are in a position to see the main factor which, with the passage of time, makes finance available for further projects. This factor is the spendable income of the enterprise itself, together with the saving of the investors who are prepared to supply finance to the enterprise—particularly the key investors who comprise the existing controlling group. The size of this flow of saving depends

in turn on the profits earned by the enterprise, together with the profits of other enterprises in which the relevant investors are interested. The profits of the enterprise are also important in overcoming the caution of sceptical investors: if an enterprise executes project A in 1930 and thereby increases its annual profits throughout the following decade, it will probably encounter much less difficulty in raising outside money for project B in 1940 than would have been the case in 1930.

With our present state of knowledge, or rather of ignorance, it is unhappily impossible to make a satisfactory assessment of how many enterprises have their flow of real investment restrained mainly by factors which limit the prospective returns from investment projects, and how many by factors which limit the availability of finance. For though we may accept that the vast majority of firms are faced with a more or less strictly limited supply of finance for investment, we are certainly not in a position to say in how many cases the *effective* limiting factor on investment is mainly the lack of finance, rather than the inadequacy of prospective returns. All we can say is that there is a certain amount of evidence for the view that it is the small enterprise whose projects are restrained by lack of finance, and the large one whose projects are able to go to the limit set by considerations of prospective returns. However, even this vague generalization must admit of many exceptions.

Inventions and Discoveries

We have already noted that inventions and discoveries may make new projects feasible, and thus provide a stimulus to the flow of real investment. It is easy to call to mind cases where the stimulus has been very powerful. The canal and the railway, coal gas and electricity, the steamship and the automobile, are all inventions the commercial exploitation of which has in each case required material investment on an enormous scale. The opening up of the Canadian prairies, the finding of gold in Australia and South Africa and of oil in America, are all examples of discoveries which have acted as powerful stimuli to material investment. The list could be extended considerably, but a mere catalogue of spectacular examples might lead us to overlook the innumerable minor inventions and discoveries which are occurring all the time, and which, taken together, must constitute a strong and steady incentive to investment. Many, of course, are not commercial propositions, and many others become commercial propositions only after

prolonged teething troubles or as the result of some complementary invention or discovery. Others again are such small improvements on existing methods of production or sources of supply that their effect is merely to cause some slight anticipation of the date when existing equipment would in any case be scrapped and replaced. But when all reasonable concessions have been made to the sceptic, there is overwhelming evidence that a large proportion of investment in fixed equipment (even where investment takes the form of expenditure on replacement) is undertaken as the result of inventions and discoveries.

The Flow of Income-Generating Expenditure

We saw in Chapter 15 that an increase in income-generating expenditure may take the form either of a 'stretching' in the price dimension, or of a stretching in the output dimension, or of a combination of both. In so far as the increase takes the form of a stretching in the output dimension it corresponds to an increase in *real* income-generating expenditure, and represents an increase in the volume of purchases of home products by consumers, by the government, by enterprises for investment or by foreigners. An increase in the volume of purchases of home products may well increase the prospective returns from material investment, both in inventories and in fixed equipment. Moreover, it also serves to facilitate the financing of material investment, for the greater the volume of purchases of home products, the greater the turnover and, in all probability, the profits of the enterprises producing and distributing them. It is, however, solely the effect on prospective returns that we shall be considering here.

Let us look more closely at the relation between the level of real income-generating expenditure and the incentive to invest in inventories. Inventories, as we have used the term, include both work in progress and goods awaiting sale or processing. The amount of work in progress in any enterprise is for technical reasons closely related to the volume of purchases from that enterprise, and any increase (decrease) in the latter will require an approximately proportionate increase (decrease) in the former. Thus a rise in real income-generating expenditure will almost certainly lead to investment in work in progress and a fall to disinvestment in work in progress. The relation between real income-generating expenditure and stocks of goods awaiting sale or processing is similar in character though much less rigid. It is a frequent policy of distributors and

manufacturers to hold stocks equal in amount to so many weeks' turnover, the number of weeks of course being different for different classes of goods, and in so far as such a policy is successfully followed the amount of stocks held will vary proportionately with the volume of turnover, as in the case of work in progress. But though such a policy is a very popular one, the number of weeks' stock which it is considered most advantageous to hold is in practice almost certainly subject to considerable variation from time to time, depending among other things on the ease or difficulty of obtaining finance and the likelihood of a rise (or fall) in prices. Moreover a policy of keeping x weeks' stock on hand is by no means easy to maintain in practice, whenever there are *unexpected* changes in turnover. Thus a sudden rise in consumers' purchases may have the initial effect of depleting, rather than increasing, inventories, if distributors and manufacturers have placed their orders on the basis of a smaller increase in sales than that which actually occurs. In the opposite circumstances there may be an unwanted accumulation of unsold goods. However, it is reasonable to suppose that in most cases an unwanted decumulation (or accumulation) of stocks would be rapidly remedied by an appropriate increase (or decrease) in the size or frequency of orders placed for new supplies.[7] It therefore remains true of all inventories, and not merely of work in progress, that real investment (or disinvestment) tends to be greater the more rapid the increase (decrease) in other categories of real income-generating expenditure. It should never be forgotten, however, that this relationship is only a tendency, which in certain circumstances may be modified or even reversed by the operation of other factors.

The relation between the flow of real investment in fixed equipment and the rapidity of change of real income-generating expenditure is much more erratic even than the relation which we considered in the previous paragraph—much more erratic but none the less highly important. Let us first consider a point of definition. Investment in fixed equipment, as defined in Chapter 14, means *gross* investment, i.e., including replacement expenditure and with-

[7] This conclusion does not apply to certain primary products, the output of which is unresponsive to changes in market conditions. For instance, stocks of wool tend to increase, rather than decrease, whenever there is a decline in the usage of wool. The inducement to hold stocks is provided by a fall in the current price of wool in relation to the price expected to obtain in the future; the current price must fall sufficiently to induce dealers to hold in stock the excess of current production over current usage.

out any deductions on account of depreciation. Hence it follows from our definition that investment in fixed equipment, unlike investment in inventories, cannot be negative. But even if we had defined investment as *net* of depreciation, there would remain the hard fact that disinvestment of fixed equipment cannot proceed as rapidly as disinvestment of inventories. Inventories of finished goods can be run down by selling them to private consumers, to the government, or to foreigners; inventories of unfinished or semi-finished goods can be similarly disposed of once they have been suitably processed. But fixed equipment can be 'run down' only by the slow process of physical deterioration or obsolescence. Hence it is that following a decline in sales, inventories are in a matter of months—or of a year or two at the very most—run down to the appropriate lower level, whereas fixed equipment remains in existence, even though used with little profit or not at all. It is indeed common knowledge that in almost all industries except farming[8] a falling-off in demand leads to the emergence of 'excess capacity' (equipment which is not being operated at its full pace for the full working week). Thus the circumstances which lead to disinvestment in inventories result in the case of fixed equipment in a low but positive rate of *gross* investment and the appearance of excess capacity. This brings us to another significant difference between inventories and fixed equipment, namely that, so long as excess capacity remains in existence, an increase in real income-generating expenditure may provide little or no stimulus to investment in fixed equipment. For there is no imperative need for the manager of an enterprise to extend his factory or buy new machinery merely because his turnover is increasing, provided that his present equipment is for the time being adequate to cope with all orders. Thus an increase in real income-generating expenditure may have little effect on the flow of investment in fixed equipment except when existing capacity is already in full use or when it is expected to become so by the time that new plant can be constructed. Beyond a certain point, however, a further rise in income-generating expenditure, if expected to last for some time, acts as a powerful stimulus to investment.[9]

[8] Farming and certain other primary industries are exceptional owing to the fact that output is maintained despite a deterioration of the market and a fall in product prices. Thus (to take farming as an example) farm equipment is not usually left idle in a depression, though of course low product prices are as strong a deterrent to the purchase of new farming equipment as a low volume of sales is to the purchase of new manufacturing equipment.

[9] It should be noted that it is the *rise* in real income-generating expenditure

Interest Rates

In general, the attractiveness of investment projects which are of relatively short duration, both because the material assets involved are expected to have a short earning life and because the necessary finance is to be arranged by borrowing on short-term or issuing dated securities, suffers relatively little from a rise in interest rates. This is because in such cases the entrepreneur's main concern is to amortize (that is, pay off) the capital sum borrowed, the interest charge (unless the interest rate is higher than usually occurs in practice) being relatively unimportant.

An extreme example of the unimportance of changes in interest rates is where an enterprise borrows on short-term to finance the holding of inventories. Statistical investigations have shown that it is uncommon for enterprises to hold inventories much in excess (in value) of three months' turnover. If this be accepted, a rise in the rate of interest by 4 per cent per annum, which in practice is quite a large change, would increase the interest charge on debts incurred to finance the holding of inventories by only 1 per cent of the turnover, surely a proportion so small that it must have an insignificant effect on the profitability, or otherwise, of holding inventories.

In the case of projects involving the purchase of fixed equipment, the effect of a change in interest rates is illustrated in Table 25, which shows the annual debt service which would have to be paid, with different rates of interest, on a £100 machine, supposing that the initial cost were amortized over a period of y years and the debt service met in y equal annual instalments.

It will be seen from this table that if a manufacturer is considering the purchase of a £100 machine, which has to pay for itself in three years, his main concern is with the question: will it earn its cost in three years? He would be foolish to bother very much about the rate of interest on the sum invested, for whereas the capital sum to be paid off in three years is £100, the total interest cost, even if the interest rate were as high as 8 per cent, would be only

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which provides the stimulus. If the rise comes to an end and gives way to a high but stable level of income-generating expenditure, the stimulus will die out, for once the equipment necessary to produce a high level of output has been brought into existence, the need for further investment is no longer pressing.

All that can be said of a high, stable level of income-generating expenditure, as distinct from a rising level, is that it is conducive to a high level of profits and thus assures a steady flow of finance for investment.

about £16, and if by some means he were able to reduce the interest rate to 4 per cent (an enormous change) the annual debt service would merely fall from £38. 16s. to £36. 1s., a reduction of only 7 per cent. If, however, he expected his machine to have an earning life of forty years, and pay for itself over that period, the same reduction in the rate of interest would reduce the annual debt service by nearly 40 per cent (namely from £8. 8s. to £5. 1s.).

TABLE 25

Annual Debt Service on a £100 Machine

(Compiled on the basis of equal annual instalments of principal and interest)

Interest Rate %	*Amortization Period (y)*				
	3 years	*5 years*	*10 years*	*20 years*	*40 years*
	£ s.	£ s.	£ s.	£ s.	£ s.
2	34 14	21 4	11 3	6 2	3 13
4	36 1	22 9	12 7	7 7	5 1
6	37 8	23 15	13 12	8 14	6 13
8	38 16	25 1	14 18	10 4	8 8
10	40 4	26 8	16 6	11 15	10 5

It is clear, then, that the crucial point to be settled is: how frequently, and for what reasons, are investment projects *not* 'of relatively short duration'? Let us first consider the length of the earning life of different kinds of fixed equipment. Such equipment commonly remains with its first owner—and may remain in constant use—for a period of ten or twenty years, or even, particularly in the case of buildings, for a still longer period.

It is, however, most doubtful whether many machines are bought which are not expected to pay for themselves in considerably less than 20 years or factories erected which are not expected to pay for themselves in considerably less than 40 years. This is because, for the bulk of manufacturing equipment, physical life and earning life are far from being identical. The earning life of an item of equipment may come to an end for three distinct reasons other than physical deterioration:

1. It may become obsolete, through the invention of a better device for the job;
2. It may become useless, because the products it makes are no

longer bought in such amounts as before, either because consumers' tastes have changed or because of a trade depression; or

3. It may cease to earn profits, due to a fall in the prices of the goods it produces or a rise in the cost of its operation.

The manager of most kinds of manufacturing enterprises must therefore try to take these additional factors into account, but however shrewd he is, the estimate he makes of the earning life of a new piece of equipment will frequently be in the nature of a guess. Only rarely will he be able to predict such things as his customers' requirements, the state of technical knowledge, the prices of commodities and the level of wages, ten or twenty years hence. Consequently, the wise manager tends in most cases to be cautious, and most probably his caution will take the form of buying only such equipment as will pay for itself in the forseeable future.[10]

This conclusion is, however, specifically limited to 'the bulk of manufacturing equipment', for a limited range of manufacturing equipment and a wide range of non-manufacturing equipment quite possibly have a sufficiently long amortization period for a change in interest rates, by an amount that might occur in practice, to be significant. The types of fixed equipment, the earning life of which may be expected to be long (say upwards of twenty years), fall into three categories:

1. House property. This is physically durable, has no operating costs (which therefore cannot vary[11]) and has a fairly assured demand, due to the fact that housing accommodation is a necessity and that people are reluctant to leave their homes, even in adversity.

2. General-purpose shops, offices, warehouses and factories, located in large urban centres. These again are physically durable and have low operating costs. The demand for shop-, office-, warehouse- and factory-space is to a considerable extent assured if the buildings concerned are genuinely general purpose, and are therefore not linked to the fortunes of one particular industry or line of business. Moreover, tenants would often be deterred from leaving, even during a trade recession, on account of the costs of removal, the loss of goodwill or the interruption to business. Lastly the landlord may sometimes assure himself a steady rental by negotiating long leases with his tenants.

[10] The amortization period adopted by a business man when deciding whether or not to buy a new machine need not be the same as the period he assumes for accounting purposes once the machine has been bought.

[11] However the costs of maintenance may vary.

3. The equipment of public utility enterprises. The equipment of enterprises operating railways, motor transport, electricity stations, gas works and the like is in many cases assured a long earning life. Not only is such equipment highly durable, but the enterprises owning it usually have a legal monopoly of an essential service and are therefore able, in many cases, to charge such prices to their customers that a 'reasonable' profit[12] is earned year by year, irrespective of the state of trade.

Our conclusion then is that investment in certain types of buildings and by public utilities often takes the form of carrying out projects which are long-term in that the assets acquired can be expected to enjoy a long earning life. By contrast investment in inventories and in 'the bulk of manufacturing equipment' takes the form of carrying out projects which need not be long-term, in the sense that assets of these types are normally acquired only in the expectation that they will pay for themselves over a relatively short period.

However, a project which is short-term in respect of the assets acquired may still have to be regarded as long-term if it involves raising finance by issuing long-term obligations, whether fixed-interest or equity. Changes in the ruling rate of interest on long-term fixed-interest obligations may thus have a considerable influence on the flow of real investment, even where the investment is in assets whose expected earning life is relatively short. This consideration is reinforced by the fact that a very common type of long-term fixed-interest obligation issued by companies is the irredeemable preference share, for the preference shares of many companies are sufficiently risky for their yield to change much more than the yield on high-class bonds. If for example a company of rather weak financial standing suffers an adverse change of circumstances, such as the onset of a trade depression, its preference shares may well depreciate so much in market price (and thus rise so much in yield) as effectively to deter investment in any project requiring finance in this form.

But even more important than changes in the prices of preference shares are variations in the prices of ordinaries. This is partly because ordinaries are always irredeemable, partly because the existing gearing of a company may mean that equity is the only kind of new finance that can be obtained, or can be accepted, and partly

[12] Almost always, whether or not such enterprises are government-owned, there are official regulations designed to ensure that the enterprises cannot make 'excessive' profits.

because the prices of ordinaries are so much more variable, even than are the prices of preference shares. When anything happens to weaken the profit-earning ability of a company (for instance the onset of a trade depression) it may well happen that the outside investor becomes more pessimistic than the entrepreneur, with the result that there may be a tendency, accentuated by bear speculation, for the price of its ordinaries to fall in greater proportion than the entrepreneur's own estimate of future profits: in other words the yield on the ordinaries becomes, in the entrepreneur's view, 'unreasonably' high. In such circumstances the entrepreneur clearly has a strong incentive to abandon, or at any rate postpone, the raising of finance by issuing new ordinaries, so that investment projects which would otherwise have been undertaken may have to be put aside for the time being. On the other hand, any misfortune which reduces (albeit to an unequal extent) the optimism of both the entrepreneur and outside investors with regard to the profit-earning ability of the company, with its present complement of assets, is likely to affect also the returns which the entrepreneur expect from *new* assets. Thus the fall in the current price of the company's ordinaries may merely render even more unattractive a project which the entrepreneur would in any case wish to abandon.

CHAPTER 20

THE TRADE CYCLE

THIS BOOK does not attempt to defend in detail the evidence in support of the thesis that, in the century and a half preceding the second world war, there were fluctuations in the level of business activity in the British economy, of sufficient regularity to justify the use of the term, the *trade cycle*. Still less does it attempt to examine the more ambitious thesis that the trade cycle became to an increasing extent an international phenomenon, bringing simultaneous prosperity or depression not only to Britain and Europe but to the new countries such as the U.S.A. and Australia and to tropical countries like Malaya. However, the evidence for both theses is almost overwhelming.

A masterly, yet simple and clear, exposition of the evidence is contained in Appendix A to Beveridge's *Full Employment in a Free Society* and any newcomer to economics is strongly recommended to consult this authoritative work. It presents an index of industrial activity in Britain, covering the whole period from 1785 to 1938. Up to the outbreak of the First World War there were fifteen separate industrial fluctuations, varying in length from five to eleven years, beginning with the boom in 1792 and ending with that of 1913. The dates of the successive crests and troughs of the fluctuations are as follows:

TABLE 26

Cyclical Fluctuations in Britain, 1792-1913[1]

CRESTS	TROUGHS	CRESTS	TROUGHS
1792	1797	1860	1862
1803	1808	1865	1867
1810	1816	1874	1879
1818	1821	1882-3	1886
1825	1832	1889	1893
1836	1842-3	1899	1903-4
1845-6	1849-50	1906-7	1908-9
1853	1858	1913	—

[1] Beveridge, op. cit., p. 281.

In the inter-war period, successive crests and troughs occurred as follows:

TABLE 27

Cyclical Fluctuations in Britain, 1920-1938

CRESTS	TROUGHS	CRESTS	TROUGHS
1920	1922	1929	1932
1924	1926	1937	—

Thus here again, if we ignore the dislocation due to the General Strike in 1926, there is a series of crests (in 1920, 1929 and 1937) separated by intervals which conform closely to pre-1914 experience. On the other hand, business fluctuations since the end of the second world war have been much less severe and much less regular than in the periods studied by Beveridge.

As Beveridge shows, the seventeen cycles between 1792 and 1937 had a number of significant features in common besides their duration. Three of these are of particular interest to us. First, as we could expect, there is a close correspondence between the author's index of industrial activity, which measures as accurately as is possible the volume of final output, and the proportion of intending workers actually in employment. Reasonably satisfactory unemployment statistics are available from 1856 onwards, and since that date a high level of industrial activity has synchronized with a low percentage of workers unemployed, and conversely. Second, over the greater part of the period under consideration there is a marked parallel movement of commodity prices and production. Generally speaking a high volume of output has coincided with a high level of prices, and vice versa. This second feature of the cycles is in accord with our conclusions in Chapter 15, where we decided that an increase in income-generating expenditure, measured in money terms, is likely in most circumstances to take the form of an increase both in the volume of output and in the level of prices. The third common feature of the British trade cycles, and the last we shall refer to here, is the greater severity of fluctuations in the industries producing fixed equipment than in all industries considered together.

The evidence that business was for so long subject to periodic booms and slumps has led many economists to conclude that the

capitalist system may suffer from a more or less inherent instability, an instability which should be capable of a more or less general explanation. The explanation most widely favoured is that the trade cycle may be attributed to the cumulative interaction of total real income-generating expenditure and one of the elements which comprise such expenditure, namely real investment. This explanation is in part suggested by the evidence, cogently presented by Beveridge in his book, that the industries producing fixed equipment were (during the period he studied) subject to greater cyclical fluctuations than were all industries as a whole. Let us therefore look more closely into the relation between real investment and real income-generating expenditure, confining our attention in this chapter to a closed economy, that is an economy with no trading or financial relations with the rest of the world. (The additional complications of an open economy will be considered in Chapter 26.)

In a closed economy, income-generating expenditure is the only source of national income, and consists of personal consumption, material investment and government purchases, all of which should here be considered in real terms. If for the time being we suppose that the last of these sources does not vary, we are left with real consumption and real investment as the only varying components in income-generating expenditure. Moreover if we further suppose that real consumption varies only in response to prior changes in real national income (i.e., that the aggregate consumption schedule never shifts its position) it follows that all changes in real consumption arise solely from prior variation in the other sources of national income, that is, on our assumptions, from prior variations in real investment. Thus in our model economy, there are only two varying kinds of real income-generating expenditure, real investment and real consumption (or more briefly 'investment' and 'consumption') and of these the latter changes only as the result of a change in the former.

It is easy to see how, in such an economy, a decline in investment may initiate a vicious spiral of depression, or an increase in investment a spiral recovery. For in the former case, a decline in investment induces a decline in consumption and therefore has a 'multiplied' effect on income-generating expenditure, which in turn (as we saw in Chapter 19) both reduces the profitability of further investment and makes the financing of investment more difficult. Hence it is likely that there will be a further decline in investment and therefore in income-generating expenditure, and so on. Con-

versely, an increase in investment may well start a cumulative interaction of investment and income-generating expenditure, resulting in a continuous rise in the latter, and therefore in national income.

This argument offers an explanation of why changes (upwards or downwards) in the flow of income-generating expenditure should not correct themselves but tend, as it were, to feed on themselves. But no explanation has yet been offered of the *turning points* in the trade cycle. Why should recoveries reach a climax and then give way to depressions? Why should depressions finally 'touch bottom' and give way to recoveries? Perhaps the best way of accounting for the turning points in the trade cycle is to describe briefly some of the main features of each phase of a cycle, neglecting all complications due to international trade, government action, and shifts in the aggregate consumption schedule.

Phase One: The Downswing

Let us begin our story at the peak of a cycle and suppose that for the present both consumption and investment are neither increasing nor diminishing. Is there any reason why investment should begin to decline? There are innumerable possible reasons, but many of them (e.g. a political crisis) would be specific to a particular cycle, and we are looking for a general reason, which is likely to apply in any cycle. Such a general reason could be formulated as follows: during the final upswing of the previous cycle the flow of investment was being stimulated by the fact that income-generating expenditure was constantly rising, whereas now, at the peak of the cycle, income-generating expenditure (being at its maximum) is rising no longer. Sooner or later therefore the scope for additional investment, whether in fixed equipment or in inventories, will begin to contract and there will be a falling off in orders placed for investment purposes and, somewhat later, in investment itself.[2] In this way a downward spiral is begun.

Phase Two: The Slump

The main reason why the decline in income-generating expenditure ultimately comes to a halt is that investment cannot decline without limit. Investment in inventories can be negative for a time, but clearly they cannot be run down indefinitely. Investment in fixed equipment (defined as *gross* of any provision for depreciation) can-

[2] Cf. footnote 9 on p. 168.

not be negative and even in the deepest depression a certain amount of essential expenditure is sure to continue. In practice, therefore, it is impossible for investment as a whole to continue at an appreciable negative rate for more than a short period. Since the decline in investment is ultimately arrested, the decline in consumption will also cease. Moreover there is an overwhelming presumption that even if investment declined to *nil* the resulting decline in total income-generating expenditure (determined by the Multiplier effect) would not be *nil*. How far the national income would fall would depend on the shape of the economy's aggregate consumption schedule; if in a closed economy investment declined to *nil* the corresponding level of national income would be represented by that point on the aggregate consumption schedule at which consumption fell short of national income by the amount of government purchases. Thus, from Figure 11 on page 142, we see that the consequence in a closed economy of investment declining to *nil* would be that national income (measured along OY) would fall until the vertical distance between CC^1 and OS was no more than the flow of government purchases. For if (say) QR were equal to the flow of government purchases, a national income equal to OP would result in consumption at a rate PQ (given by the aggregate consumption schedule CC^1); and this, supplemented by government purchases QR, would generate income at a rate PR, which is equal to the existing flow of national income OP. The reasons for thinking that the equilibrium level of national income corresponding to *nil* investment is not itself *nil* should now be obvious from Figure 11. They are, first, that government purchases will continue (though in practice not necessarily at an unchanged rate, as we have postulated), despite the fall in government spendable income; and second, that consumption is likely to be reduced by less than the fall in national income. (The second reason corresponds in Figure 11 to the gradient of CC^1, i.e. the marginal propensity to consume, being less than unity, so that as national income declines, the distance between CC^1 and OS also declines.)

Phase Three: The Upswing

Why does stagnation ultimately give place to revival? Quite often in the past the apparent cause has been some spectacular invention, such as the railway or the motor car, which has become a commercial proposition and whose development has called for a vast amount of investment. At other times the cause has been the

discovery of some new source of material wealth, such as a new goldfield. On other and more tragic occasions the stimulus to recovery has been war, with the concomitant increase (which, however, we have assumed away in our model economy) in government purchases. But even in the absence of spectacular stimuli such as railway building, gold rushes or war, it is unlikely that stagnation would continue for ever, for the following reasons:

1. Arrears of replacements would not be allowed to accumulate indefinitely.
2. During the period of stagnation minor inventions and discoveries would be being made all the time; some of these, taken alone or used in conjunction, would sooner or later become commercial propositions.
3. Consumers' tastes would change, calling for the production of new commodities.
4. In so far as investment has been restrained by difficulties of obtaining finance, this restraint would sooner or later be weakened by enterprises defaulting on their fixed-interest liabilities.

The last of these four reasons probably requires a little more explanation. During a prolonged slump many enterprises not only appear to be in danger of defaulting on their fixed-interest obligations, they *do* default, since their profits and current assets are inadequate to cover the claims for interest and repayment which the holders of the obligations attempt to enforce. Default may take either of two forms. First, the enterprise may undergo a financial reconstruction, whereby the holders of some or all of its fixed-interest obligations forgo these obligations in return for a share in the equity of the enterprise. In this way the enterprise becomes less highly geared. Alternatively the enterprise may go bankrupt and its assets be sold for what they will fetch. In this case the enterprise's fixed equipment may be bought simply for scrap, but more often the assets will be taken over as a whole (that is, as a 'going concern') by another enterprise, quite possibly a new enterprise specially formed for the purpose. If the bankrupt's assets are taken over as a going concern, the purchasing enterprise, having secured (most probably at a bargain price) a business freed of all past debts, will in all probability be in a strong financial position, and be much better able than the defaulting enterprise to obtain finance for new investment. Thus default, in the form either of reconstruction or bankruptcy, opens up again the possibility of obtaining finance for new investment.

Phase Four: The Boom

Having noted an explanation of why investment should ultimately revive and thereby initiate a spiral of recovery, we now have to ask why the increase of investment, and therefore also of income-generating expenditure, eventually reaches a maximum and ceases to rise any further. If the rise in investment did not reach a ceiling for any other reason, the rise in the volume of physical output would be brought to a halt as the point of full employment, whether of labour or of equipment, was reached. In practice, however, the increase in the flow of investment frequently tails off before full employment is reached. The explanation of this characteristic of past cycles is unfortunately still a matter for conjecture. Perhaps business men act in anticipation of full employment being achieved, or maybe it is simply that their optimism ceases to keep pace with the boom; but, whatever the reason, their rate of investment tends to increase less rapidly, and finally not to increase at all.

Conclusion

It is clear that the inter-relation between investment and income-generating expenditure is such as would account for a tendency for recessions and recoveries to feed on themselves. What is more difficult to explain is why recessions and recoveries should each peter out and give place to the other, thus producing a cycle of recession and recovery with a fairly regular interval between each boom or slump and the next. It is possible, however, as we have seen, to describe a plausible and logical sequence of events, the consequence of which would be regular, self-reversing fluctuations in investment and income-generating expenditure, of a kind that seems to bear a close resemblance to the trade cycle described by Beveridge.

Nevertheless, it will be realized that our model of the trade cycle is highly abstract, and that innumerable factors which may in practice modify the cycle, or indeed inhibit it altogether, have so far been assumed away or ignored. The assumptions of an invariable flow of government purchases and of a stable aggregate consumption schedule are relaxed in the next section, where we shall consider the government's role in the trade cycle. The further assumption of a closed economy is abandoned in Chapter 26, which deals with the international aspects of the trade cycle. But even so, our story will at best be only in the nature of a thumbnail sketch. Hence the reader interested in the subject is advised to read at least

the literature recommended in the bibliography at the end of this book.

The Government and the Trade Cycle

The action which a government can take to mitigate a trade depression may be considered with reference to the four categories of real income-generating expenditure: government purchases, consumption, investment, and (in an open economy) exports.

1. It is important that the government should not react to a fall in income-generating expenditure (and therefore in government spendable income) by curtailing its own expenditure on goods and services. Instead it should maintain or even increase its rate of purchases, if necessary by borrowing. Most governments nowadays would probably adopt this latter policy in the event of an incipient slump, although few governments did so in the post-1929 slump.

2. A government can also help to combat a depression by taking action to raise the aggregate consumption schedule. This it can do either by reducing taxation or by increasing transfer payments. Since poor people are likely to spend on consumption a higher proportion of any additional income than rich people do, a given reduction in taxation is likely to be more efficacious in increasing consumption if the relief is given in such a way as to benefit the poor rather than the rich. Likewise the additional transfer payments are likely to be more efficacious if made to the poor. Lastly, if we relax our assumption of a closed economy, we can take note of the possibility of raising the aggregate consumption schedule by discouraging (e.g. by tariffs) the consumption of imported goods. This point is developed in Chapter 25.

3. A successful policy of maintaining consumption and government purchases would itself assist in mitigating the fall in investment, for investment, as we have seen, may be very sensitive to a fall in income-generating expenditure. Other policies which the government might in certain circumstances undertake with effect are to offer subsidies or tax concessions to enterprises undertaking investment and (as the dominant partner in the country's monetary authorities) to assist in the maintenance of low rates of interest.

4. In certain circumstances, in an open economy, it may be possible to stimulate exports by exchange depreciation or similar devices. This point is taken up again in Chapters 24 and 25.

Most of the techniques available to the government to stimulate real income-generating expenditure in a depression can be employed in reverse at the peak of a boom, if full employment has been reached, to combat inflation.

Changes in Wage Rates

One of the most widely advocated remedies for trade depressions is a change in wage rates. On the one hand we are told that a reduction in wage rates, by reducing costs of production, acts as a stimulus to production. On the other hand we are advised that the remedy for trade depression is an *increase* in wage rates, for this has the effect of increasing the incomes of workers, thus enabling them to buy more goods and services. Clearly both these arguments cannot be true at one and the same time; what we have to decide is whether either is true, or whether changes in wage rates do not appreciably affect the volume of final output one way or the other.

It is convenient to begin by constructing a hypothetical economy in which the volume of output is completely unaffected by changes in wage rates. Happily we already have a model which is admirably suited to our purpose, namely the one described in Chapter 15 to illustrate the theoretical possibility of an all-round 10 per cent increase in wage rates leading to a 10 per cent upward shift of the price-output schedule. This model economy, it will be remembered, was a closed economy, with fairly general unemployment and unused capacity; the 10 per cent rise in wage rates was general in all industries and was associated with a 10 per cent increase in rents and in the prices of primary products. Lastly, all manufacturers and distributors worked to a constant percentage profit margin and all indirect taxes were *ad valorem*. In this hypothetical economy, it was argued, the rise of 10 per cent in wage rates would result in a 10 per cent upward shift of the price-output schedule.

What, in such an economy, would be the effect of the 10 per cent increase in wage rates on the volume of final output, i.e. on income-generating expenditure, measured in real terms? Since the economy is a closed one, there are only three categories of income-generating expenditure: government purchases, consumption and investment. Thus a rise of 10 per cent in wage rates and consequently in prices will result in a change in the volume of output only in so far as it:

1. Induces the government to vary the number of its employees or to revise its armament and public works programmes, that is, to vary the volume of government purchases;
2. Induces private consumers to change their standard of living, that is, to change their real consumption;
3. Induces business managers to change their plans for building new factories, buying new machines and undertaking other investment work, that is, to change real investment.

As to (1), it is likely that a 10 per cent increase in wage rates and prices will have no appreciable effect, and that the government will for the time being simply pay 10 per cent more for the same flow of goods and services as before.

As to (2), since we have assumed a closed economy and have just concluded in (1) above that there will be an unchanging real flow of government purchases, real consumption can vary only on account of a prior change in real investment or of a shift in the community's aggregate consumption schedule. There is no reason to expect the change in wage rates to lead to a shift in the aggregate consumption schedule, expressed in real terms, unless it had the effect of changing the proportion of national income going to private citizens or if it redistributed personal spendable income as between the rich and the poor. However, on the drastic (and admittedly unrealistic) assumptions we have made, any redistribution of national income as between private citizens and other recipients, or of personal spendable income as between different income groups, might quite possibly be small, so let us assume that any such redistribution is negligible, in which case real consumption would change only on account of a prior change in real investment.

Now as to (3): will a 10 per cent rise in wage rates and prices affect real investment? On the one hand the prices of new machines are now 10 per cent higher and so are operating expenses (mainly wages, salaries, and materials); on the other hand the selling price of the products to be made by new machines will also be 10 per cent higher. Thus, to introduce yet another assumption, *if the rise in wage rates and prices is expected to be permanent* there is no reason why real investment should be affected.

On the assumptions we have made, a 10 per cent rise in wage rates will result in a 10 per cent upward shift of the price-output schedule, but little change in the volume of output (or in employment). Thus the rise in income-generating expenditure will be approximately 10 per cent and will take the form almost entirely of a rise in prices.

When we pass from this simplified model to the real world, where our simplifying assumptions do not necessarily obtain, the consequences of a 10 per cent rise in wage rates could be predicted, if at all, only in the light of the circumstances of each particular case. Of the complications introduced in passing from our model economy to the real world, three stand out as being particularly significant:

1. As we saw in Chapter 15, an all-round 10 per cent rise in wage rates in the real world is unlikely to raise the price-output schedule by as much as 10 per cent. As a consequence, there will be a redistribution of the national income in favour of wage earners mainly at the expense of the more well-to-do sections of the community, so that *if the other sources of real national income remained unchanged* there would be a tendency for real consumption to increase. But can we assume that the other sources of real national income will remain unchanged? No, because the industries whose selling prices have not risen by the full 10 per cent will now represent less attractive avenues for investment, so that real investment may decline. Unfortunately we cannot deduce *a priori* which would be greater, the increase in real consumption or the decline in real investment.

2. Real investment will be depressed if the rise in wage rates is expected to be temporary, and will be stimulated if the rise is expected to be first of a series. This is because changes in wage rates are known to affect the prices of items of fixed equipment, and business managers are less likely to buy equipment now if they expect the price of such equipment to fall than if they expect the price to rise. Investment in inventories is for similar reasons depressed (stimulated) by the expectation of future reductions (increases) in wage rates.

3. If we relax our assumption of a closed economy, we must recognize that the 10 per cent rise in wage rates and the consequent rise in the prices of home-produced goods is likely to lead to a number of further complications, discussed in some detail in Chapter 25, the outcome of which may on balance favour either a rise or a fall in real national income, but more probably (in most circumstances) the latter.

We saw in Chapter 15 that in conditions of widespread unemployment, an increase of 10 per cent in all wage rates will raise the price-output schedule in a smaller proportion than 10 per cent. Given the old and the new position of this schedule (as in Figure 8 on page 127) the change in income-generating expenditure in the price dimension depends partly on the change in the output dimension, but this, as we have seen, may be in either direction, depending on the circumstances. Likewise, an all-round *reduction* in wage rates will cause a less than proportional downward shift of the price-output schedule, but may cause output to change in either direction. Unfortunately it is not possible to be more definite than this, except with reference to a specific case.

CHAPTER 21

INFLATION

Full Employment

HITHERTO we have been concerned with variations in income-generating expenditure at times of less than full employment of labour and equipment.

At such times (as we saw in Chapter 15) variations in the level of output serve to reflect changes in aggregate demand, and therefore help us to distinguish a rise in the price level attributable to an increase in demand from one attributable to a prior shift in the price-output schedule, due e.g. to an increase in wage rates.

Once, however, full employment has been reached and output can increase no further, it becomes much more difficult to decide whether a given increase in the price level is attributable (even in part) to an increase in demand. Increases in wage rates offer a very unreliable guide, since at times of full employment they are a likely concomitant of a rise in prices, whatever its cause may be, and one can rarely be clear whether rises in the wage rates of any particular group of workers are *due to* prior rises in the prices of the goods they help to make, or whether the rises in their wage rates themselves *cause* the rises in the prices of these goods. In both cases there would be rises in both wage rates and product prices: the only difference is that in the former case product prices are demand-determined, and wages rise only because workers insist that wages as well as profits should benefit from the higher prices; while in the latter case product prices are cost-determined, and rise because of the rise in wage rates.

Why though should wage rates rise at times of full employment under a regime of cost-determined product prices? The answer to this question is currently the subject of heated debate, in which three main points of view can be distinguished:

1. Whenever a fairly high proportion of the labour force is employed (even if *full* employment of labour or equipment has not been achieved) the trade unions find themselves in a strong bargaining position, which they exploit by pressing successfully for higher wages.
2. Wage rates are cost-determined in that the main reason why the workers in one industry decide to press for a rise in the wage

rates is a previous rise in the prices of the things they want to buy (mainly things produced by other workers, or imported). The so-called 'wage-price spiral', as we shall see, may arise when both product prices and wage rates are cost-determined.

3. Wage rates are demand-determined in the sense that the presence of excess demand in the product markets (see below, page 189) makes employers very ready to concede claims for higher wage rates.

Inflation with Demand-determined Product Prices

Let us however first consider what happens in a fully employed economy in which the prices of all goods and services produced by enterprises are demand-determined. In such an economy, supposing that there is no official rationing of goods, any attempt by consumers, by foreigners, by government authorities or by investing enterprises to increase their purchases of home products has the effect of bidding up the prices of these products, not of calling forth an increased total volume of output. Hence the Multiplier effect, if measured in *real* terms, is clearly negligible, for appreciable increases in real national income are no longer possible.

However, at times of full employment, there is still a marked tendency for an increase in the non-consumption sources of the national income (our X in Chapter 17) to have a multiplied effect on national income, provided that both are considered in *money* terms. Indeed it can be shown by a simple numerical example that there is a tendency for the money national income to increase roughly in the *same proportion* as the increase in X. Let us suppose, as we did in Chapter 17, that (measured in £ millions a month) the national income (Y) is in equilibrium at 100, X being 40 and consumption of home products (C) being 60. Then let us suppose that X, in money terms, increases by 10 per cent to 44, so that Y increases by 4 to 104. This increase in Y will induce the recipients to increase their expenditure on home products, so that C will increase too, but by how much? It is plausible to argue, as we did in Chapter 18, that if the money income of an individual citizen were increased by x per cent, without any change in his *real* income, the outcome would be that he would increase his consumption, in money terms, in the same proportion, that is, by x per cent. Let us for the sake of argument assume that what applies to an individual citizen also applies to the recipients of the national income as a whole, and suppose, subject to later correction, that an x per cent increase in *money* Y, unaccompanied by any increase

in *real* Y, leads to an x per cent increase in *money* C. Then, to revert to our example, the increase in Y from 100 to 104 will cause C to increase by 4 per cent of 60, i.e. by 2·4. Thus there will be a second increase in Y, namely of 2·4, and this in turn will be followed by a series of further increases, the magnitude of which (it will be found) continues the geometric progression, the first two terms of which are 4 and 2·4. Hence the full increase in Y is the sum of the series

$$4\ (1+0{\cdot}6+(0{\cdot}6)^2+(0{\cdot}6)^3+\text{etc.})$$
$$=\frac{4}{1-0{\cdot}6}=10$$

In the long run therefore the national income (Y) will increase from 100 to 110, as the result of the increase in X from 40 to 44; and the proportion of Y represented by X will decline to its old level, namely 40 per cent. This result suggests that at times of full employment, when real national income cannot be appreciably increased, X cannot increase at the expense of C, except while the Multiplier effect is in course of 'working itself out'. Thus an increase in X in real terms can be maintained only if X in money terms, and also Y in money terms, increase continuously without limit, so that the Multiplier effect is forever in a state of 'working itself out'.

We are left with two questions which remain to be settled:

1. Was it entirely reasonable of us to suppose that, at times of full employment, an increase in Y would lead the recipients to increase their money expenditure on home products (C) in exactly the same proportion?
2. Is it to be expected that X in real terms would be maintained despite continuously rising prices?

As to the first, consumption expenditure on home products, expressed in money terms, might increase less than proportionately to national income

1. If the taxation system is such that as money national income increases, the proportionate share going to the government also increases, or
2. If higher prices for home products serve so to divert purchases from home-produced to imported goods that total expenditure on the latter absorbs a higher proportion of personal income, or
3. If personal spendable income comes to be distributed increasingly to the disadvantage of poor people (who have high propensities to consume).

The taxation systems of Australia and Britain today, with their high incidence on large *money* incomes, are probably such as to satisfy the first condition. The second condition may or not be satisfied in the two countries, depending on the circumstances—particularly on the type and severity of the tariffs and other import restrictions in force at the time. The third condition would probably not be satisfied, for the Arbitration Courts in Australia and the strong trade union movements in both countries would almost certainly ensure that money wage rates would rise more or less proportionately with prices. However, on balance, the weight of argument would seem thus far to be on the side of the rise in consumption expenditure on home products probably being somewhat less than proportional to the increase in money national income. But one factor has still to be considered, namely, that if the rise in prices is sufficiently persistent, the public may possibly lose confidence in the purchasing power of money;[1] and if this should happen consumption expenditure on home products is likely to increase irrespective of prior changes in the money national income. In technical language, the rise in prices may be aggravated by an upward shift in the aggregate consumption schedule.

The second question to be settled is whether X in real terms would be maintained despite a prolonged rise in prices. The four sources of national income included in X are government purchases of, exports of, and material investment of, home products—together with (a much smaller item, which we need not consider here) net income from overseas. If domestic prices rise, the first of these sources, measured in real terms, may well remain unchanged but the second is likely to suffer a reduction. In the case of real investment, however, a rise of prices, *if it is expected to continue,* is clearly a stimulus, a stimulus moreover which becomes overwhelmingly powerful if the rise in prices is rapid.

Our conclusion then must be that at times of full employment (with demand-determined prices and no official rationing of goods) an attempt by consumers, by foreigners, by government authorities or by investing enterprises to increase their share of the given total output of home products can succeed temporarily by means of a limited rise in prices, but that a permanent re-allocation of the output of home products, if practicable at all, would require a continuous and indefinite rise in prices.

[1] See p. 192.

Inflation with Demand-determined Wage Rates

So far we have been assuming that the effect of an increase in demand, at times of full employment, is to bid up product prices. This, however, may not always occur. It may on the contrary happen, particularly in the case of manufactured articles, that manufacturers, either willingly or because of official price control, adhere to a policy of raising prices only to the extent that this is necessary to pass on increases in costs, caused (for example) by rises in wage rates, in indirect taxes, or in the prices of imported materials.

If such a pricing policy is in operation throughout the economy (as, for the sake of argument, we shall now suppose to be the case), a rise in demand, if unaccompanied by a rise in costs, has as its immediate consequence not a rise in prices, but a lengthening of queues, a growth of waiting lists, an accumulation of unexecuted orders, and other symptoms of excess demand—a state of affairs commonly known as 'suppressed inflation'. It is only a rise in wage rates, or in other items entering into costs of production, which leads to a rise in prices—to an extent which is governed largely by the same considerations (already dealt with in chapter 15[2]), which would operate at times of less than full employment.

If, however, such a situation arises and wage rates are *demand*-determined (the third possibility listed on pages 185-6) the emergence of excess demand will immediately set in train a rise in wage rates, and therefore also in product prices, and the outcome will differ only in minor details from what would occur under a regime of demand-determined product prices.

Cost-push Inflation

Let us therefore pursue the remaining possibilities, which deal with inflation in circumstances where neither product prices nor wage rates are demand-determined. Following common usage, we can refer to such cases as examples of 'cost-push' inflation. Under cost-push inflation, product prices rise only as the result of a prior increase in costs, and increases in costs do not occur automatically with the emergence of excess demand.

Increases in costs may however occur for other reasons, and if they do they will not merely push up product prices: they may well also affect the state of demand, i.e. increase or reduce the amount of excess demand.

[2] P. 125.

If, for example, the rise in costs is due to a rise in wage rates, there will also be an increase in the quantity of goods which income receivers would want to buy if the old level of prices had remained unchanged: since however the old level of prices has *not* remained unchanged, but has increased, the quantity of goods which people will want to buy may be either more or less than before, depending mainly on the circumstances already considered in the last section of Chapter 20, entitled 'Changes in Wage Rates'. However, since we are now considering what happens at times of full employment, any increase in the quantity of goods which people want to buy cannot cause an increase in output (which is what we should have concluded in Chapter 20) but only (if neither product prices nor wage rates are demand-determined) an increase in excess demand. Conversely, any decrease in the quantity of goods which people want to buy will in these circumstances lead to a decrease in excess demand, until the point is reached where this excess demand disappears, or at any rate comes to be limited to certain 'bottleneck' industries instead of being widespread. Any reduction in demand beyond this point would reduce the actual level of output, and the economy would once more behave as described in Chapter 20.

If the rise in costs were not due to a rise in wage rates, there might be no increase in private money income to match the increase in prices, so that there would be unambiguously a reduction in excess demand, with a shortening of queues and waiting lists, and maybe even an elimination of excess demand and a curtailment of output. If, for example, there was an increase in indirect taxes, not balanced by concessions in other taxes or by any increase in government purchases or transfer payments, this would lead to a rise in prices but no increase in private money income. Similar consequences might in certain circumstances ensue if there occurred a rise in the prices of imports.

If in a regime of cost-determined product prices wage rates too are cost-determined (the second possibility listed on pages 185-6), there may well occur a phenomenon commonly referred to as the 'wage-price spiral'. This arises when the policy is adopted of increasing money wages to compensate for increases in the workers' cost of living (i.e. in the prices of things which workers buy), so as to offset any fall in *real* wage rates. In Britain such a procedure is frequently accepted by both trade unions and employers, and even where it is not accepted as a definite policy a rise in the cost

of living may well be accepted by both sides as a valid reason for an increase in wage rates. In Australia the adjustment of wage rates in the light of the workers' cost of living was until recently the accepted policy of the arbitration courts.

If it is the case that any rise in the workers' cost of living leads to a proportionate increase in wage rates, while (due to many prices being cost-determined) any increase in wage rates leads to a rise in the cost of living, then an initial increase in the cost of living—due, for example, to a rise in the prices of imports—inevitably gives rise to a succession of price increases, each one corresponding to a further turn of the wage-price spiral. However if, as is likely, an x per cent rise in wage rates leads to a smaller proportionate rise in prices, say by $\frac{1}{2}x$ per cent, then the successive increases in prices will get smaller and smaller, so that the price level does not increase indefinitely, but instead approaches a determinate ceiling.[3]

Summary

We have now developed two alternative theories of prices at times of full employment, one in respect of an economy subject to 'demand-pull' inflation (where either product prices or wage rates are demand-determined) and the other in respect of an economy subject to 'cost-push' inflation. In practice matters are complicated, almost inextricably so, by the fact that few economies fall definitely into the one or the other category: most are in fact hybrid. Moreover, to make matters worse, most are unstable hybrids. For example, if at the time when full employment is reached, most prices are cost-determined, an increase in excess demand is likely, if it proceeds far enough, to lead to more and more prices slipping over into the demand-determined category. This may still be true even if cost-determined prices are imposed on the economy by official price control, owing to the increasing difficulty of suppressing black markets and other types of evasion. Suppressed inflation is indeed a practicable state of affairs only if the amount of excess demand is small enough to make people believe that it will be 'worked off' in due course without a serious rise in prices. Otherwise a state of suppressed inflation will give way to an open inflation.

[3] If the initial price increase (due, let us say, to an increase in import prices) is by x%, and in consequence wage rates increase by x%, then the second price increase (on the assumption made earlier in the paragraph) would be by $\frac{1}{2}x$%, the third by $\frac{1}{4}x$%, the fourth by $\frac{1}{8}x$%, and so on, the total increase being:

$$x\,(1+\tfrac{1}{2}+\tfrac{1}{4}+\tfrac{1}{8}+\text{ etc. . . . .}) = 2x \text{ per cent}$$

There is of course a close resemblance between the mathematics of the wage-price spiral and of the Multiplier, but there the resemblance ends.

The Monetary Aspects of Rising Prices

Of the various purposes which money serves, two require it to be demanded as an asset: namely, to serve as a means of payment and to serve as a store of value. The effect of rising prices is likely to increase the demand for money for the former purpose but may well diminish the demand for the latter purpose. Thus the monetary effect of rising prices on the level of demand for goods and services would seem to be equivocal.

On the one hand, rising prices and rising money incomes presumably tend to increase the demand for money as a means of payment, and thus cause the liquidity preference schedule to shift upwards to the right. Thus if the monetary authorities are wise enough to refuse any increase in the public's total holdings of liquid assets, there would ensue a rise in the yields (i.e. a fall in the price) of bonds, and of shares too. Such a rise in yields would tend to choke off the demand for goods and services.[4]

On the other hand, a rise in prices, *if expected to continue,* makes money and promises of money less attractive as a store of value (since the purchasing power of such assets would decline *pari passu* with any future rise in prices) and by the same token makes the purchase of goods and services a more attractive alternative. Unfortunately, such an increase in the demand for goods and services will, once full employment has been achieved, operate either to raise prices or to generate excess demand, thus in either case justifying the original expectation that money's command over real resources would suffer a deterioration. This provides the main explanation of why it is possible for inflation to feed on itself, sometimes to the extent that a country's money may become virtually worthless.

[4] See ch. 19.

CHAPTER 22

YIELDS FURTHER CONSIDERED

IT WILL BE recalled that when we entered upon our discussion of the yields and prices of bonds and shares in Chapters 12 and 13, we deliberately limited our task to a consideration of the equilibrium position *at any one time,* or at any rate within 'a period so short that any additional wealth created must be small in relation to that already in existence'.[1] What we still have to take into account is that 'loan expenditure . . . steadily adds to both the supply of, and the demand for, corporate securities'[2] and other obligations, with the result that the equilibrium pattern of yields on different sorts of obligations would probably be quite different on January 1st of some particular year from what it was on January 1st five years earlier, even if there had been no change whatever in the 'tastes' of each investor throughout the intervening period, or in official monetary policy (as reflected in the shape of the liquidity supply schedule). We are now in a position to take up the story as we left it at the end of Chapter 13, by considering what is meant by loan expenditure, and how it affects the yields and prices of different obligations.

Loan Expenditure and Unspent Income in a Closed Economy

In any period of time, say a year, the recipients of the national income, whether they be private citizens, enterprises or the government, can dispose of their spendable incomes (which in this chapter are to be considered in money terms) in two and only two ways: they can purchase goods and services or they can accumulate obligations. Income disposed of in the latter manner we can describe as *unspent.* Thus the excess of personal spendable income over personal consumption is unspent personal income, the excess of business spendable income over material investment is unspent business income, and the excess of government spendable income over government purchases is unspent government income. We should note however that the difference between spendable income and expenditure on goods and services can be negative instead of positive, in which case the balance can be called negative unspent income or *loan expenditure.* A private citizen, for instance, may

[1] See footnote 3 on p. 88.

[2] See pp. 99-100.

sometimes find it advantageous to spend beyond his income, that is, to undertake loan expenditure, either by disposing of obligations previously held as assets or by incurring new obligations as liabilities. The same is true, and is very much more frequent in practice, in the case of an enterprise. It is quite normal for an enterprise's expenditure on material investment in any year to exceed its spendable income, the difference corresponding to business loan expenditure in the form either of a decumulation of obligations hitherto held as assets or of an increase in the amount of obligations owed as liabilities. Lastly, the government too can in any year buy goods and services in excess of its spendable income, the excess being in this case government loan expenditure.

In a closed economy, as we saw in Chapter 20, national income is generated solely by three types of expenditure: personal consumption, material investment and government purchases. The income thus generated in any year is distributed either as personal spendable income, as business spendable income or as government spendable income. Thus in any year, in a closed economy, the following account necessarily balances:

$$\left.\begin{array}{l}\text{Personal Consumption}\\ \text{Material Investment}\\ \text{Government Purchases}\end{array}\right\} = \left\{\begin{array}{l}\text{Personal Spendable Income}\\ \text{Business Spendable Income}\\ \text{Government Spendable Income}\end{array}\right.$$

Though individual private citizens may spend in excess of their incomes, personal spendable income in total is, in practice, almost certain to be in excess of personal consumption. Let us therefore subtract the latter from both sides of the account. We are left with:

$$\left.\begin{array}{l}\text{Material Investment}\\ \text{Government Purchases}\end{array}\right\} = \left\{\begin{array}{l}\text{Unspent Personal Income}\\ \text{Business Spendable Income}\\ \text{Government Spendable Income}\end{array}\right.$$

On the other hand, business spendable income in total is likely to be *less* than material investment in total, so that subtracting 'business spendable income' from both sides, we get:

$$\left.\begin{array}{l}\text{Business Loan Expenditure}\\ \text{Government Purchases}\end{array}\right\} = \left\{\begin{array}{l}\text{Unspent Personal Income}\\ \text{Government Spendable Income}\end{array}\right.$$

The balance between government spendable income and government purchases may in practice be either negative or positive. If, for the sake of argument, we suppose it to be the former, we can write our equality thus:

$$\left.\begin{array}{l}\text{Business Loan Expenditure}\\ \text{Government Loan Expenditure}\end{array}\right\} = \text{Unspent Personal Income}$$

The alternative assumption would result in the equality being between business loan expenditure on the one hand and unspent personal income, plus unspent government income, on the other. In either case we have shown that in a closed economy total *unspent income* in any period is necessarily equal to total *loan expenditure* in that period,[3] or (to put the proposition in yet another way) the acquisition of obligations out of income in any year is necessarily equal to such income-generating expenditure as is financed either by disposing of obligations hitherto held as assets or by incurring new obligations as liabilities.

The reader may protest at this point that the demonstration that (in a closed economy) unspent income and loan expenditure are equal leaves him at a loss to understand how the equality is achieved. Perhaps the best way of dealing with this difficulty is to abandon, for the time being, the consideration of an economy as a whole and turn instead to follow through the consequences of a single act of loan expenditure. Let us suppose that the newly-formed Soap Manufacturing Company is in process of building a factory for the manufacture of soap. Production has not yet commenced, so that to date the company's spendable income has inevitably been *nil*, and all the expenditure on the factory (that is, all the material investment undertaken by the company) has been loan expenditure. One such item of expenditure has been the purchase of the services of Mr P, the painter. Loan expenditure for this purpose initially takes the form of trade credit, for Mr P does not demand payment in money until after he has finished the job. Let us suppose that by June, Mr P has just finished, having done work to the value of £100. This £100 would appear on the Soap Manufacturing Company's balance sheet thus:

LIABILITIES		ASSETS	
	£		£
Trade Creditors . .	100	Material Assets	100

The company has therefore by this date undertaken loan expenditure to the extent of £100. At the same time income has accrued

[3] Readers of Keynes' *General Theory* will recognize that this equality corresponds closely (though not quite exactly) with the Keynesian *ex post* equality between saving and investment.

to Mr P to the extent of £100, all of which is unspent, for being a prudent man he does not spend his income until it reaches him in the form of money.

Mr P receives payment in money in July, and in August spends £50 of it on consumption goods and services. More precisely, he and his family go on holiday and £50 is the amount of the hotel account. How now, in the year in question, is the equality between unspent income and loan expenditure preserved? The Soap Manufacturing Company has undertaken loan expenditure to the value of £100, of which only half is now represented by Mr P's unspent income. The balance of £50 is accounted for in the form of unspent income belonging to the hotel proprietor and his staff. For Mr P's £50 of expenditure on hotel accommodation generates an equal income for the hotel proprietor and his staff,[4] who, like Mr P and most other people, do not spend their income immediately. But in September, let us say, the hotel proprietor and his staff spend £30 of the £50 on consumption goods of one sort or another, generating £30 of additional income for the producers of the goods, and this £30 of income is likewise left unspent for a period but is later on partly spent. Hence in general terms the equality between unspent income and loan expenditure is explicable on the following lines:

1. Any act of loan expenditure generates an equal amount of income.
2. For a time the income so generated is left unspent by the recipients.[5]
3. Later on, the recipients are likely to dispose of some part of the income in the form of consumption expenditure. This corresponds, for the economy as a whole, to the assumption of a marginal propensity to consume in excess of *nil*.
4. Such consumption expenditure generates more income, which again is for a time left unspent by the recipients.
5. Thus the attempts of income receivers as a whole to spend the income they obtain as the result of an act of loan expenditure merely serve to generate more income, without causing unspent income to fall short of loan expenditure. This increase in income

[4] And to some extent also for the tradesmen and others who supply the hotel with provisions.

[5] If any of the recipients of extra income have been undertaking income-generating expenditure in excess of their incomes, the effect of the extra income will be to reduce their loan expenditure, rather than to increase their unspent income. Thus though in all cases the original act of loan expenditure would be balanced by additional income left unspent by the recipients, this additional income would in some cases increase the recipient's unspent income but in other cases reduce his loan expenditure.

corresponds to the 'Multiplier effect', described in Chapter 17, except that we are now considering income and expenditure in money terms, not in real terms.

The Yields of Obligations

The type of obligation immediately involved in an act of loan expenditure is usually money, loan expenditure usually taking the form of a money payment in return for some good or service. The only important exception is where (as in our example of the Soap Manufacturing Co.) the loan expenditure creates a debt to trade creditors; but even then the debt is normally discharged, after a short interval, by a money payment. In many cases however the money required for loan expenditure has been obtained for that purpose by disposing of some other obligation, hitherto held as an asset, or by incurring some new obligation as a liability. If this be so, it will be more convenient for our purposes to regard money as being in the nature of an intermediary, and to regard the loan expenditure as being financed by the disposal of, or the creation of, the other obligation. Likewise unspent income initially accrues to the recipient in the form of an accumulation of money or (as in the case of Mr P, the painter) of amounts owed by trade debtors who, however, pay in money after a short interval. But here again money may be only an intermediary, for the holders of unspent income, in so far as they intend to hold it more or less permanently (instead of using it to buy goods in the near future), are quite likely to decide to switch out of money into other types of obligations.

Thus loan expenditure has two aspects which have to be borne in mind if we wish to understand the effect of such expenditure on the current yields of different types of obligations. First, anyone performing an act of loan expenditure makes additional obligations available to the rest of the community, and these obligations may well comprise or include non-monetary obligations, particularly securities. Second, the corresponding equal accrual of unspent income is likely to take the form of an accumulation not only of money but of other types of obligations. Thus loan expenditure is likely to increase either or both the supply of and the demand for non-monetary obligations, but only by chance would the increased supply of any one type of non-monetary obligation be matched exactly by an equal increase in the demand for the same type of obligation. Consequently it is clear that the absorption by the investing public of the additional non-monetary obligations

made available to them by acts of loan expenditure may require adjustments in the yields of these obligations, whether upwards (to stimulate demand) or downwards (to choke it off). The direction and extent of the changes in yields on each type of obligation clearly depend, first, on what type of obligation is made available by the loan expenditure, and second, on the tastes of the income-receivers who hold the additional unspent income. Let us consider a few applications of this proposition:

1. Suppose that the loan expenditure took the form of government expenditure on public works, financed by borrowing from the banking system. Then the new obligations made available to the banks (or discount houses) by the government would be (say) Treasury Bills, but (as we saw in Chapter 10) the additional obligations made available to the *public* would be demand deposits, with the option of switching into other liquid assets. Hence unless the monetary sector 'mopped up' some part of the additional liquid obligations by an issue of bonds (which in practice it might well do), the consequence of our hypothetical act of loan expenditure would be a fall in the yield of long-term securities, for it is likely that some at least of the unspent income resulting from the loan expenditure would accrue to people who would use their additional demand deposits to bid for bonds and shares.

2. The same consequence would ensue if the act of loan expenditure took the form of material investment, financed by bank overdraft.

3. The fall in the yields of long-term securities would be greater in so far as the additional unspent income accrued to income receivers who would not want to hold liquid assets.

4. Material investment financed exclusively by sales of bonds would (again provided that the monetary sector did not intervene in the bond market) depress the prices of bonds and raise the bond rate. The yields of shares would probably move in sympathy, since the higher bond rate would induce some investors to try to sell their shares with the object of buying bonds.

5. There would also be an increase in the yields of both shares and bonds if the material investment were financial exclusively by the issue of shares. However, if only shares were issued, the rise in share yields would probably be greater, and in the bond rate less, than if the securities issued had been bonds. (This is because if only shares were issued some would almost certainly have to be taken up by investors who hitherto had held bonds; that is, the margin of substitution would shift in the direction of investors who required a higher differential yield on shares.)

6. The rise in the yields of long-term securities would be greater, in so far as the unspent income resulting from the loan expenditure accrued to income-receivers who preferred to hold liquid assets rather than bonds or shares.

These illustrations show that loan expenditure has an effect on the yields of obligations which differs greatly according to the circumstances. One set of circumstances is perhaps worthy of special consideration, namely when there is an increase in loan expenditure arising mainly from an increase in the pace of material investment, such as normally occurs during the upswing of a trade cycle. Material investment by an enterprise in excess of its own spendable income may be financed by trade credit (which throws the burden of finance on to another enterprise), or by borrowing from the banking system which (in the absence of offsetting action by the banking or other institutions in the monetary sector) has the effect of making liquid obligations available to the public, or again by the sale of long-term securities, whether new ones or old ones previously held as reserves. Of these ways of financing material investment, the second—by borrowing from the banks—is unlikely to be predominant, so that the increase in loan expenditure by enterprises may result in only a modest increase in the public's holding of liquid assets.

On the other hand, during periods when material investment (and therefore the national income) is rising, it is likely that a significant proportion of unspent income will accrue to people or enterprises wanting *liquid* assets. This is so because income receivers as a whole, whether private citizens or enterprises, will have increased monetary receipts and payments and will therefore want to hold more money as a means of payment, an objective which they can readily achieve simply by retaining their unspent income in the form of money instead of acquiring income-earning obligations. Thus if other things were the same there might well be a tendency during the upswing of the trade cycle for the yields of long-term securities to rise. In the case of prefs and ordinaries this tendency is concealed by the widespread expectation of increased business profits, which operates to raise the current prices, and thus to reduce the yields, of these types of obligations. But in the case of bonds, it is quite reasonable to expect a rise (though maybe only a small one) in the yield as trade revives, should the institutions in the monetary sector not intervene to support the bond market.

In an Open Economy

In an open economy there are not three sources of national income, but five, the two additional ones being exports and net income from overseas. Moreover within such an economy only expenditure on home products is income-generating. Hence we get the equality:[6]

Personal Consumption Material Investment Government Purchases Exports *minus* Imports Net Income from Overseas	=	Personal Spendable Income Business Spendable Income Government Spendable Income

which (using the argument on page 194) can be simplified thus:

Business Loan Expenditure Government Loan Expenditure Exports *minus* Imports Net Income from Overseas	=	Unspent Personal Income

Unfortunately it is now necessary to anticipate certain conclusions reached in Chapter 23, to which the reader should refer in case of difficulty. It will be seen in that chapter that the items

Exports *minus* Imports, and
Net Income from Overseas

constitute the economy's *balance of current payments* with the rest of the world. Thus we can say of an open economy that unspent income in any period is necessarily equal to the sum of loan expenditure and the balance of current payments. Or again we could say that unspent income, which is the acquisition of obligations out of income, is equal in any period to the sum of

1. Expenditure financed not out of income but by decumulating existing obligations hitherto held as assets or by incurring new obligations as liabilities.
2. The net accumulation of overseas assets. (This would be negative if the balance of current payments happened to be unfavourable.)

In what way do the added complications of an open economy require us to amend our conclusions concerning the yields of

[6] See Figure 5 on p. 114.

obligations? What, for instance, would be the effect on the yields of obligations in Australia of a favourable balance of current payments? Owing to the workings of the Australian banking system the additional overseas assets which the Australian monetary sector would acquire would be London Funds, but the additional obligations which the Australian public would acquire would be demand deposits or other liquid obligations. Thus unless the Australian monetary sector took steps (as well it might) to 'mop up' the additional liquid obligations by offering more bonds to the public, the result would be a fall in the bond rate. It will therefore be seen that the effect on the bond rate, and indeed on the yields on all long-term securities, of a favourable balance of current payments is exactly analogous to an increase in loan expenditure in the form of increased government purchases financed by borrowing from the banks.

Do our conclusions as to the effect on Australian yields of a favourable balance of current payments apply equally to Britain? Yes, but with some complications. For sterling operates as an international currency and, as a consequence, Britain's net accumulation of overseas assets, due to a favourable balance of current payments, may take either of two forms:

1. As in Australia, the accumulation of international reserves by the British monetary sector (in practice by the Exchange Equalization Account[7]); or
2. The transfer of ownership of sterling obligations (that is, London Funds) from overseas holders, such as the Australian banks, to British residents.

In the latter case, since the London Funds held by overseas monetary authorities for the most part consist of liquid obligations, the additional obligations made available to British residents would be mainly liquid assets. Hence, as in the other case, there would tend to be a fall in the yields of long-term sterling obligations, unless the institutions of the British monetary sector took offsetting action by selling bonds.

[7] See footnote 4 on p. 50.

PART THREE

OVERSEAS RECEIPTS AND PAYMENTS

CHAPTER 23

THE BALANCE OF PAYMENTS AND RATES OF EXCHANGE

The Mechanism of Overseas Payments

PAYMENTS MADE from one country to another differ from payments made within a single country partly because different countries have different types of money or currencies, and partly because international transactions are subject to much closer regulation by the governments of the countries concerned than are transactions between two parties within a single country.

Our first task is to understand the essentials of the mechanism by which payments are made from Mr A in one country to Mr B in another. Let us therefore begin by considering how payments are made between Australia and Britain. Payments are made by Australians to Englishmen and by Englishmen to Australians through the facilities offered by the Australian commercial banks, the so-called Trading Banks. Such payments can be made:

1. By Telegraphic Transfer (T.T.), in which case Mr A in Australia receives payment in Australian pounds at virtually the same time that Mr B in England parts with his English pounds (and vice versa if the payment is from Australia to England), or
2. By bill, in which case Mr A draws on Mr B and discounts the bill at an Australian bank, thereby receiving payment in Australian pounds up to several months before Mr B parts with his English pounds (and vice versa if the payment is from Australia to England).

In the former case the Australian Trading Banks are simply facilitating a payment from Mr B to Mr A, but in the latter they are also in effect making a loan to Mr A; therefore in the latter case the Trading Banks will *charge interest* and Mr A will get rather fewer Australian pounds for each £E100 paid by Mr B than if the payment had been made by T.T. In explaining the mechanism of overseas payments we can assume that all payments are by T.T. and thus avoid the added complications which arise when a loan transaction is grafted on to a 'pure' exchange transaction. However, a detailed description of how a payment by bill of exchange is made between one country and another can be found in many textbooks.[1]

[1] See also the Bibliography, p. 242.

Ever since 1931 the Australian Trading Banks have been prepared to facilitate payments by T.T. between Britain and Australia at an exchange rate of approximately £A125=£E100. (The adjective 'approximately' is inserted because in order to cover their expenses and to earn profits the Trading Banks charge a small commission, which takes the form of *buying* £E100 for £A125 but selling £E100 for £A125. 10s. We can, however, neglect this minor complication.) The exchange facilities offered by the Australian Trading Banks depend on the willingness of these banks to add to, or draw on, their London Funds, which consist in part of bank deposits held by Australian Trading Banks at English Joint Stock Banks (Joint Stock Banks being the English name for commercial banks). If Mr A wants to pay £A125 to Mr B, he will go to his Trading Bank and in effect say, 'You reduce my bank deposit at your Adelaide branch and in return transfer £E100 from your London Funds to Mr B in London'. The Australian bank will thereupon reduce Mr A's bank deposit by £A125 and telegraph its London Office to draw a cheque for £E100 on its account at (say) the Westminster Bank in favour of Mr B. Then when Mr B receives the cheque he will pay it into his bank deposit at one of the Joint Stock Banks and, when the cheque clears, £E100 will be transferred from the Australian bank's account at the Westminster Bank to Mr B's account at his Joint Stock Bank. In tabular form the transaction as a whole can be represented thus:

—	LIABILITIES		ASSETS	
Mr A	—		Bank Deposit	−£A125
The Australian Trading Bank	Bank Deposit	−£A125	London Funds	−£E100
The English Joint Stock Banks	Bank Deposits			
	(a) held in England	+£E100		
	(b) held overseas	−£E100		
Mr B	—		Bank Deposit	+£E100

Why does the Australian Trading Bank assent so readily to a transaction which will deplete its London Funds? In the first place, each Trading Bank is continuously engaged in facilitating payments not only from Australia to Britain but also from Britain

to Australia, so that withdrawals from, and additions to, London Funds for the most part cancel out. Again, if a Trading Bank's London Funds should ever become inconveniently small or inconviently large the bank can always replenish or deplete its London Funds by buying English pounds from, or selling them to, the Commonwealth Bank. We are now a little way towards an explanation of why the Trading Banks are so ready to exchange Australian for English pounds and vice versa at the rate of £A125=£E100, for this is the rate at which they can buy English pounds from, or sell them to, the Commonwealth Bank. The purchase of English money (that is, *sterling*) from the Commonwealth Bank involves the following transaction:

—	LIABILITIES		ASSETS	
The Trading Bank	—		Bankers' Cash London Funds	−£A125 +£E100
The Commonwealth Bank	Bankers' Cash	−£A125	London Funds	−£E100

Thus whether or not Mr A's Trading Bank replenishes its London Funds by resorting to the Commonwealth Bank, the effect of Mr A's payment to Mr B is that the Australian monetary sector has reduced its international reserve by £E100 and its deposit liabilities to the Australian public by a like amount, namely £A125. Thus the outcome is in accord with the commentary on Table 7, page 75.

If Australia's international reserve had been held, not by the central bank, but, as in Britain, by a government account (the Exchange Equalization Account), the Trading Bank would in effect have replenished its London Funds by offering the government some of its own securities, such as Treasury Bills, in exchange for the required amount of London Funds. Thus the outcome as it would appear in Table 7 is that the reduction on the right hand side would be in 'net government indebtedness in the home currency', instead of being in the 'international reserve of the banking system'. The reduction on the left hand side would however be the same in both cases, namely in deposit liabilities to the public.

Why does the Commonwealth Bank readily buy and sell sterling at the exchange rate of £A125=£E100? The answer is that the Australian monetary authorities believe:

1. That it is in Australia's best interest to have a stable rate of exchange with England, so that the price in Australian money of £E100 is the same day after day instead of changing from time to time like the price of tomatoes in a local market;
2. That it has not been in Australia's interest to change the exchange rate from that chosen in 1931.

The grounds for these beliefs will be considered later, but given that these beliefs are the basis of Australian policy, the most practical course of action is for the country to have one of the institutions comprising its 'monetary authorities' (in this case the Commonwealth Bank) charged with the job of buying or selling sterling in unlimited amounts at the chosen official price for all legitimate purposes. Since applications to purchase sterling from the Commonwealth Bank may in any period either exceed or fall short of applications to sell sterling, it is necessary for the Bank to hold a stock or reserve of English money or of assets which can readily be converted into English money. This 'international reserve' consists of the Commonwealth Bank's stock of gold, which can readily be sold for sterling, and its London Funds. The latter comprise English money and other sterling obligations which are either liquid or readily marketable in London. If applications to purchase sterling from the Commonwealth Bank consistently exceeded applications to sell sterling, the Commonwealth Bank's London Funds would eventually become exhausted, and the policy of stabilizing the price of sterling in terms of Australian money would be imperilled. The remedies available for dealing with this contingency will be considered later.

Australian is not alone in arranging for payments to and from Britain in the manner that has been described above. Each of the countries in the *Sterling Area* (which consists of the British Commonwealth except Canada together with Burma and a number of smaller countries), follows the same policy of holding London Funds and buying and selling sterling in unlimited amounts at an official rate of exchange for all legitimate purposes.

The fact that the Sterling Area countries follow a common policy with respect to payments to and from Britain provides them with a very convenient means for making payments to each other. Thus payments between Australia and any other Sterling Area country are no more difficult than between Australia and Britain. Consider for example the case of Mr Importer of Adelaide who wants to

make a payment by T.T. of £A125 to Mr Exporter of Cape Town. Australia maintains an official exchange rate of £A125=£E100; South Africa one of £SA100=£E100. Thus Mr Importer's bank, the Bank of Adelaide, can readily effect the payment by transferring the appropriate amount of sterling from its London Funds to the London Funds of Mr Exporter's bank, the Standard Bank of South Africa. In tabular form the transaction is as follows:

—	LIABILITIES		ASSETS	
Mr Importer, of Adelaide	—		Bank Deposit	−£A125
The Bank of Adelaide	Bank Deposit	−£A125	London Funds	−£E100
The Standard Bank of South Africa	Bank Deposit	+£SA100	London Funds	+£E100
Mr Exporter of Cape Town	—		Bank Deposit	+£SA100

Thus the members of the Sterling Area use their London Funds much as the Australian Trading Banks use their bankers' deposits at the Commonwealth Bank. So long as no member of the area runs out of London Funds completely, payments between one member and another simply involve the change of ownership of sterling obligations, just as payments from one Trading Bank to another merely involve a change in the ownership of bankers' deposits. Hence it is reasonable to describe sterling as the *international currency* of the Sterling Area.

The use of sterling as an international currency is not confined, however, to payments within the Sterling Area. Sterling is used for making the vast majority of payments between Sterling Area countries and the rest of the world and is even used for making payments as between two countries, neither of which is in the Sterling Area. The only currency, apart from sterling, in common use by the Sterling Area countries for conducting their overseas transactions is the U.S. dollar. However it is the almost general practice of the whole Sterling Area to sell, for sterling, its dollar earnings to the British Exchange Equalization Account and to obtain dollars by buying them from this Account; hence the whole of Australia's overseas receipts and payments are in effect receipts and payments of sterling.

The Balance of Payments

The concept of a country's balance of payments in any period can best be understood by analogy with the monetary receipts and payments of (say) a shopkeeper in the course of a year. The shopkeeper's receipts and payments could be classified as 'current' and 'capital', and if we include among the latter the 'balance', or excess of total receipts over total payments, it is clear that this item must be equal to the year's increase in the shopkeeper's holding of money. If the 'balance' happened to be negative, this would correspond to a reduction during the year in the shopkeeper's holding of money.

A shopkeeper's statement of his annual receipts and payments might be as follows:

TABLE 28

Monetary Receipts and Payments in the Year ended 30 June 1946

RECEIPTS		PAYMENTS	
	Current Items		
	£		£
Sales of Goods	5,000	Purchases of goods	4,500
		Purchases of services (e.g., transport)	200
		Interest paid on loans . .	100
		Gifts to friends	50
	Capital Items		
New borrowing during year . .	100	New lending during year .	nil
		Balance	250
	5,100		5,100

This hypothetical statement may be compared with Australia's balance of payments in the year ended 30 June 1946, as shown in Table 29 on page 211.

The significance of the 'balance' of the following account (item 9) can readily be understood by analogy with the balancing item in Table 28. Items 1, 2 and 3 in Table 29 represent Australia's total receipts of sterling during the year, expressed in Australian pounds at the prevailing exchange rate of £A125=£E100; items 4 to 8 represent Australia's total sterling disbursements during the

year, again expressed in Australian pounds; hence item 9 corresponds to Australia's accumulation of sterling during the year, measured in Australian pounds, that is, in practice, the year's increase in the London Funds of the Commonwealth Bank. However, the £9,000,000 shown against item 9 was not the full increase in Australia's international reserves in the year 1945-6, for during that year the Commonwealth Bank acquired a further £7,000,000 of reserves, not by operating as the residual buyer and seller of sterling at the official exchange rate, but simply by purchasing all the gold mined in Australia during the year. The full increase in

TABLE 29

*Australian Balance of Payments in the Year ended 30 June 1946**

(Figures in £A million)

RECEIPTS		PAYMENTS	
Current Items			
1. Exports of merchandise on civil account (f.o.b.) ..	148	4. Imports of merchandise on civil account (f.o.b.) ..	111
2. Net receipts from other goods and services ..	55	5. Freight and insurance ..	22
		6. Public authority interest payments	24
		7. Other income payable overseas, net	15
	203		172
Capital Items			
3. Private borrowing overseas	21	8. Public authority lending overseas	43
		9. Balance	9
	21		52
Total, all items ..	224	Total, all items .	224

* Taken from the Australian White Paper on National Income and Expenditure, 1945-46.

Australia's international reserves was therefore £16,000,000 of which £7,000,000 consisted of gold and £9,000,000 of sterling obligations.

The only other item which requires specific comment is item 5, namely payments for freight and insurance. This item arises mainly because imports of merchandise (item 4) are valued free on board (f.o.b.), that is to say, they are valued at what they were worth

when they were shipped from the country of origin; and Australia has to make overseas payments not merely for the f.o.b. value of goods she imports but also (if the goods are brought in non-Australian ships) for the cost of bringing them to Australia.

The distinction between current and capital items is that the former are *income;* current receipts are income to the producers of the goods and services specified in items 1 and 2; current payments are income to the overseas producers who supplied Australia with the goods and services specified in items 4 and 5 and to the overseas recipients of items 6 and 7 . Capital items do *not* represent income either to Australians or to the overseas party to the transaction. The excess of current receipts over current payments is known as the 'balance of current payments'. If it is positive the balance is said to be active or favourable; if negative, passive or unfavourable. Thus in 1945-6, Australia had a favourable or active balance of current payments to the extent of £A31,000,000. The excess of Australia's capital payments (including the accumulation of London Funds) over her capital receipts, which is necessarily equal to her balance of current payments, represents the year's increase in 'net Australian overseas assets', as defined in Chapter 1.

Rates of Exchange

The significance of item 9 is that it arises solely as a consequence of the Commonwealth Bank fulfilling its task of 'buying or selling sterling in unlimited amounts at the chosen official price (£A125= £E100) for all legitimate purposes'.

What would happen, however, if the Commonwealth Bank ceased to fulfil its task of buying and selling sterling? Suppose, for instance, that item 9 was persistently negative and that eventually the Commonwealth Bank completely exhausted its international reserves. What would be the consequences? In answering this question it is important to note that the analogy we have drawn between our shopkeeper's accounts and Australia's balance of payments does not apply strictly to the circumstances we are now considering. If our shopkeeper's 'change in money held' (the balancing item in Table 28) were persistently negative he would eventually become insolvent. If, however, Australia completely exhausted her international reserves the consequence would be not national insolvency but a fall in the value of the £A in relation to the £E. Thus the exchange rate instead of being maintained at £A125=£E100 would change to say £A200=£E100, that is, the Australian pound would

depreciate from its present value of sixteen English shillings to ten English shillings. That such would be the case can be seen most clearly if we bear in mind that the exchange rate between the £A and the £E is the price in Australian money of £E100; and that in the absence of official price control this price, like the price of wool or wheat, may be expected to bring about the equation of supply and demand.[2] In this case Australia's supply of sterling consists of her overseas receipts measured in £E and her demand for sterling consists of her overseas payments measured in £E.

The fact that unlike most prices the price of £E100 has remained constant since 1931 indicates that the price of sterling has been officially controlled more rigorously than most other prices. But the methods of official control are precisely the same whether applied to the price of sterling per £E100 or to the price of wool per lb. Official price control of any commodity is no more than a dead letter unless supported by either or both of two expedients:

1. An official agency holding a reserve of the commodity in question and entrusted with the task of buying and selling the commodity freely at the official price;
2. Rationing, whether official or informal. (Informal rationing covers for instance the various devices adopted by suppliers to share among their customers scarce goods the prices of which are fixed by law.)

As we have already seen, the Australian monetary authorities have for a long time made use of the first expedient. The second expedient, in the form of exchange control, has also been in use since 1939.

In the absence of official intervention in either of the two forms described above, the price in £A of £E100 would be determined in much the same way as the price in £A of 100 lbs. of wool. We could in both cases represent the price as the point of intersection of a supply schedule (S) and a demand schedule (D), as shown in Figures 14 and 15 on page 214.

Though the shape and position of each of the schedules is a matter for conjecture it has been assumed that the supply schedule of sterling is a vertical line, for a large part of Australia's sterling earnings results from the export of farm products whose supply,

[2] The analogy between the Australian prices of sterling and of wool or wheat seems to be a close one, but our conclusions in regard to the Australian exchange rate may not in certain cases be exactly applicable to other exchange rates. See p. 227.

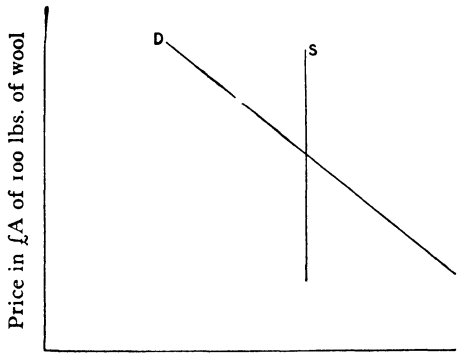


Figure 14—The Supply of, and the Demand for, Wool

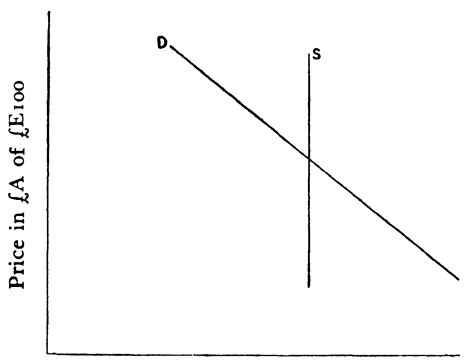


Figure 15—The Supply of, and the Demand for, Sterling

like that of wool, is not very responsive to changes in price. On the other hand Australia's demand schedule for sterling is taken to be sloping downwards to the right on the ground that if sterling becomes cheaper Australians will buy more imported goods and will therefore require more sterling to pay for them. Naturally, both the supply and the demand schedules must be assumed to shift from time to time, and in particular the supply schedule would move bodily to the left as the result of a bad season or a decline in the overseas demand for Australian export products.

The adoption of a policy of stabilizing the price of sterling at

some official level (such as the present one of £A125=£E100) by entrusting the Commonwealth Bank with the task of buying and selling sterling freely at the official price can be represented by inserting a horizontal line PP' in our diagram (as in Figure 16) at the level where the price in £A of £E100 is 125. On the basis of the hypothetical supply and demand schedules shown in the diagram, the exchange rate in the absence of official price control would have been £A150=£E100, but at the official rate of £A125=£E100 the annual demand for sterling exceeds the supply by an amount measured by the distance AB. Thus in such a situation

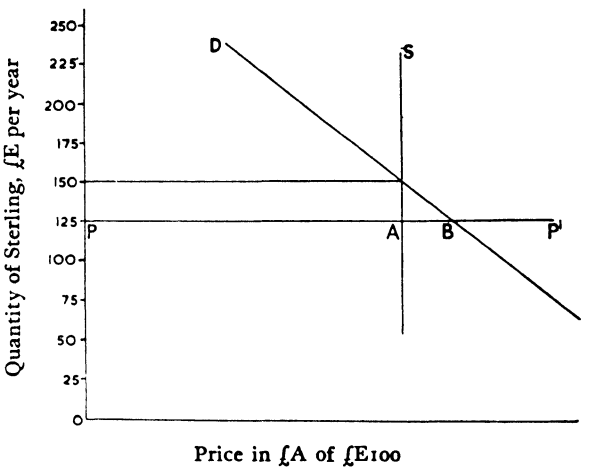


Figure 16—The Determination of the Price of Sterling

the Commonwealth Bank would be called upon to decumulate sterling at an annual rate corresponding to AB. If, however, the supply and demand schedules shifted so that their point of intersection lay *below* the line PP', the Commonwealth Bank would then be called upon to add to its sterling reserve at a rate equal to the excess of supply over demand at the official price.

If, at the official exchange rate with sterling, the demand for sterling persistently exceeded the supply, the Commonwealth Bank's international reserve would sooner or later come near to exhaustion. What could the Australian monetary authorities do in these circumstances? In general terms they have seven choices open to them:

1. To impose new tariffs, so as to deter Australians from buying so many imported goods;

2. To depreciate the value of the £A in relation to the £E;
3. To use exchange controls to ration the available sterling among the rival claimants;
4. To abandon all attempt to maintain an official rate of exchange, allowing the price of sterling to fluctuate freely and to 'find its own level';
5. To impose quantitative restrictions (quotas) on the import of goods;
6. To enforce lower wage rates, which will reduce the prices of home-produced manufactured goods and thus induce Australians to buy more Australian-made goods in place of imported goods;
7. To allow or enforce a reduction in real national income and thus in employment.

The cases for and against each of these rival policies cannot be readily understood until we have considered the relation between a country's balance of current payments and its national income. It is to this relationship that we turn in the next chapter.

CHAPTER 24

THE NATIONAL INCOME AND THE BALANCE OF CURRENT PAYMENTS

Introduction

THE AUSTRALIAN POLICY of stabilizing domestic money in terms of sterling is, as we have seen, one adhered to by many other states. Moreover, countries which do not stabilize the value of their money in terms of sterling almost always seek to stabilize it in relation to some other international currency, or *standard,* such as gold or the U.S. dollar. It is reasonable, therefore, to begin our consideration of the relation between a country's national income and its balance of current payments on the basis that the country in question stabilizes the value of its money in terms of some international standard, let us say sterling, and that its monetary authorities hold an international reserve of the standard (London Funds if sterling is the standard) which they are prepared to augment or draw upon, as required, to ensure that overseas receipts and payments balance at the official rate of exchange. It will also for convenience of exposition be assumed for the time being that no variations occur in the rate of borrowing (or lending) overseas, so that the only varying capital item in the balance of payments is changes in London Funds, such changes thus always being equal in amount to the balance of current payments.

The relationship between the national income and the balance of current payments is a complex one. First, current receipts from overseas, consisting of the proceeds of exports plus net income from overseas,[1] are sources of national income. Second, the remaining non-consumption sources of the national income, namely material investment and government purchases of home products, are likely to require complementary imports. For most material investment projects require both home-produced and imported goods and many schemes requiring government expenditure call for imported goods as well as home products. Thus, in the case of material investment, new buildings frequently require some imported fittings, new machinery requires some imported components or materials, and goods added to stock may well include some products either im-

[1] These together would, in Table 29, on p. 211, comprise items 1 and 2, minus items 6 and 7.

ported or made in part of imported materials. In the case of government purchases, an increased armaments programme usually requires the import of some types of munitions, or of materials for making munitions, and a public works programme may also (though to a smaller extent) call for some imported materials. Hence an increase in material investment or government purchases is likely both to increase the national income and to change unfavourably the balance of current payments. Third, the consumption of home-produced and of imported goods are also complementary, in the sense that they are likely to change together following an increase in the national income. Thus any increase in the national income, even if due to an increase in some source other than personal consumption, will almost certainly lead to an increase in imports for consumption purposes. Fourth, though imported goods, whether for investment, for consumption or for government use, are complementary to home products *so long as the relative prices of imported and home-produced goods do not change,* they are also competitive in that purchases tend to be diverted to or from imported goods whenever their prices change relatively to the prices of home products. A new tariff, for instance, is likely to divert expenditure from imports to home products and thereby at once to increase the real national income and to reduce expenditure on imports. The effect of a change in the domestic price level (due for instance to a reduction in wage rates) or of a change in the exchange rate is likewise to change the relation between the prices of imports and the prices of home products, and thus to change both real national income and expenditure on imports. Fifth, another effect of a change in the domestic price level in relation to the level of prices prevailing overseas may be to encourage or discourage the production of goods for export, and hence to affect both the real national income and the balance of current payments. For example, an increase in the domestic price level, due to a rise in wage rates, will raise the export-producer's costs of production without in any way altering the conditions of overseas demand, and may therefore discourage export production.

Assuming Stable Prices and Stable Exchange Rate

The relationship between the national income and the balance of current payments is simplest when income-generating expenditure (which accounts for all *home-produced* national income) is varying mainly in the output dimension, for then we can dismiss as rela-

tively unimportant all the complications which arise from changes in the relative prices of imported and home-produced goods. Let us therefore take this relatively simple case (which corresponds to what would occur in practice at times of widespread unemployment, supposing that nothing happened to cause a shift in the price-output schedule[2]), and consider what would happen to the balance of current payments if the national income received:

1. An internal stimulus, in the form either of an increase in material investment or government purchases, or of an upward shift of the aggregate consumption schedule.
2. An external stimulus in the form of an increase in exports or in net income from overseas.

Let us consider the effect of each of these stimuli on the balance of current payments.

1. An increase in the national income provoked by an increase in material investment or in government purchases will cause a deterioration in our balance of current payments for two reasons. First, an increase in material investment or government purchases may well consist of expenditure on imports as well as on home products. Second, that portion of the expenditure which is on home products will have a 'multiplied' effect on the national income, and the higher level of national income will induce a higher level of imports for consumption. An upward shift of the aggregate consumption schedule will affect our balance of current payments in much the same way. For first, if the increased consumption of home products is due to consumers deciding to spend a higher proportion of their incomes than hitherto (and not to an increased preference for home produced, as against imported, goods) the extra consumption may well consist of expenditure on imports as well as on home products. And second, the increased consumption of home products will in any case have a 'multiplied' effect on the national income, and the higher level of national income will induce a higher level of imports for consumption.

The deterioration caused in our balance of current payments by any of these internal stimuli to our national income will be embarrassing to our monetary authorities unless our accumulation of London Funds has hitherto been so rapid that (despite the setback)

[2] We shall in the next chapter consider the consequences of shifts in the price-output schedule, due to changes in wage rates and in tariffs, and also the consequences of the steepening of the price-output schedule, as full employment is approached.

it remains an accumulation, and does not become a decumulation, or unless our London Funds are in any case so large as to be in no immediate danger of exhaustion. If for either of these reasons our monetary authorities acquiesce in the deterioration in the balance of current payments, they will in effect be allowing the home country's recovery to 'spill over' into other countries. For our additional imports constitute additional exports for whoever supplies them, and the exporting countries will thus enjoy an increase in their national incomes. Moreover the increased prosperity we cause overseas may redound to our advantage, for the overseas countries which have benefited from our increase in imports will in turn increase their own imports, including maybe their imports from us. (This point is developed in Chapter 26.)

However, if our monetary authorities cannot acquiesce in the deterioration of our balance of current payments for fear of our international reserves becoming exhausted, they will have to take steps either to reverse the increase in expenditure or alternatively to direct it exclusively to home products. The former remedy serves to arrest the recovery of the national income, the latter to stimulate it further.

2. An increase in the national income provoked by an increase in exports or in net income from overseas has initially the effect of improving our balance of current payments, for both these stimuli themselves consist of receipts from overseas. But an external stimulus, just like an internal stimulus, has a 'multiplied' effect on our national income, the rise in which induces a higher level of imports for consumption. Moreover, if as the result of the increase in income-generating expenditure, entrepreneurs are persuaded to undertake additional material investment, there may also be an increase in imports for investments purposes. The increase in imports, whether for consumption or for investment, serves to counterbalance the original increase in exports, so that the ultimate improvement in our balance of payments will be less than the initial improvement. (Indeed the increase in imports may conceivably exceed the original increase in our exports.) In so far as the increase in our exports results in a counterbalancing increase in our imports, we are in effect passing on to our overseas suppliers the stimulus we have received from our overseas customers, thus helping to spread prosperity in an ever widening circle.

CHAPTER 25

THE NATIONAL INCOME AND THE BALANCE OF CURRENT PAYMENTS
(continued)

HITHERTO we have been arguing on the basis of a stable price-output schedule, a fixed rate of exchange and widespread unemployment. We shall in this chapter relax these assumptions one at a time and consider the effects on the real national income and the balance of current payments.

Changes in Wage Rates

A shift of the price-output schedule, such as the one illustrated in Figure 8 on page 127, may occur for various reasons, but particularly because of changes in tariffs (i.e. import duties), in other indirect taxes, in wage rates, or in profit margins. The effect of changes in tariffs on the balance of current payments is peculiar, and will be treated separately in a later section. The effect of changes in other indirect taxes is in reality small, because of the common practice of exempting exports from such taxes. The effects of changes in wage rates and in profit margins are broadly similar, so we shall confine ourselves here to considering only the former. Let us then follow through the consequences of a reduction in wage rates, first on the national income and then on the balance of current payments.

Effect on Real National Income. Since a reduction in wage rates is to lower the price level, we must be careful to distinguish between what happens to our country's *money* national income and what happens to our *real* national income. The real national income, as we saw in Chapter 20,[1] may either rise or fall, depending on the circumstances; and this is so even apart from the complications of overseas trade, for one cannot say in general terms whether the depressing effect which a fall in wage rates has on real consumption will or will not be outweighed by the possible stimulus to real investment. But suppose that on balance there was no initial change in consumption and material investment, measured in real terms; would there then be any stimulus, or the reverse, to our real national income, due to a change in imports or exports?

So far as imports are concerned, the fact that their prices do not

[1] Pp. 182-4.

fall proportionately with domestic prices and incomes[2] results in a smaller volume of imported goods being bought but this does not necessarily mean that the reduction in expenditure on imports will be more than proportionate to the reduction in our money national income. It is therefore conceivable that the typical consumer, whose money income decreases roughly in proportion with the fall in domestic prices, may buy less foreign goods without increasing, or perhaps even decreasing, his real expenditure on home products. If a country's imports are such that acceptable substitutes can be produced at home, a fall in wage rates and home prices will probably stimulate purchases of such home products in place of imports; but if on the other hand the bulk of imports are vital necessities which cannot be produced at home, the home consumer may well continue to buy them despite his lower money income, preferring to economize on his purchases of home products. Thus the change in imports, resulting from a reduction in wage rates, may be associated with either an increase or a decrease in our country's real national income, depending on the circumstances.

Now let us turn from imports to exports. The export producer, as the result of the reduction in wage rates and in the domestic price level, is faced with lower costs of production but unchanged conditions in his overseas markets. If in these circumstances he merely maintains his previous physical output, as frequently happens in the case of primary producers, his market will continue to absorb his produce at the old price; consequently he will enjoy an increase in income, as a result of which he can be expected to increase his real consumption. Thus in this case there tends to be an expansion in the volume of our final output, and therefore in our real national income, initiated by a rise in real consumption. (The apparent rise in real exports, due to the fact that the total value of our exports has not declined in line with the reduction in the overall price index, is fictitious, since the overall price index is in these circumstances unrepresentative of export prices.[3]) Alternatively, if the exporter had reduced his selling prices to accord

[2] Import prices would fall only if: (a) our imports consist of commodities, the output of which is not readily discouraged by a decrease in demand, *and* (b) if we are such a large purchaser of these commodities that a decrease in our demand for them represents a significant decrease in the total demand for them. These conditions are not satisfied in the case of Australia, but may be to some extent in the case of Britain.

[3] This shortcoming of our definition of 'real exports' was noted in ch. 18 p. 151.

with the fall in his costs of production, a reaction which corresponds more nearly to the practice of exporters of manufactured articles, the volume of his sales (our *real* exports) would have risen. Moreover, since he would be getting approximately the same real profit per unit output on a larger volume of output, his real income would also increase and likewise his real consumption.[4] In either case, therefore, the effect on the export-producer of a general reduction in wage rates is such as to stimulate our country's real national income whether or not there is a rise in the volume of exports. It should be noted, however, that the increase in real consumption and in the volume of exports will tend to be less in so far as exporters' costs of production include payments for imported goods, the prices of which would not fall when wage rates were reduced.

On the whole, taking into account both exports and imports, an open economy would seem to be more likely than a closed economy to enjoy an increase in real national income following a reduction in wage rates;[5] and conversely, *mutatis mutandis,* for an increase in wage rates.

Effect on Balance of Current Payments. Let us next consider how a reduction in wage rates affects the balance of current payments, assuming, for the sake of argument, that on balance there is no change in real national income. Since the volume and hence the total value (in money terms[6]) of imports will fall, our overseas payments will be less. The volume of exports may increase, but this may or may not result in an increase in their total money value. If the overseas buyers of our goods already get the bulk of their supplies from us and have little inclination to increase their rate of purchases, to reduce our export prices may not lead to a fully compensating increase in volume, in which case the overseas demand is said to be *inelastic.*[7] Hence the effect of the fall in wage

[4] These conclusions follow whether or not the overseas demand for our exports is 'elastic' in the sense that the term is used below.

[5] This conclusion has of course been reached on the basis that the reduction in wage rates is confined to our own economy.

[6] Since we are not here assuming a change in the exchange rate, it is a matter of indifference whether we value imports and exports in terms of the domestic currency or in terms of the appropriate international standard.

[7] In more technical language, when an x% reduction in price leads to an x% increase in the volume of sales (so that sales proceeds remain unchanged) the demand is said to have an elasticity of unity, and when the resulting increase in the volume of sales is less than x% (so that sales proceeds decline) the demand is said to have an elasticity of less than unity. Thus what we have labelled an *inelastic* demand should more strictly be referred to as a demand with elasticity of less than unity.

rates on the balance of current payments cannot be stated for certain even if we could assume that real national income remained unchanged. All we can say is that the total money value of imports will fall and that the total money value of exports will decline only if the volume of exports increases in the face of an *in*elastic overseas demand. The reverse applies, *mutatis mutandis,* to a rise in wage rates.

Changes in the Exchange Rate

Effect on Real National Income. A depreciation of our currency,[8] whereby the international standard (by assumption, sterling) becomes dearer in terms of our domestic money, is in many ways comparable with a reduction in wage rates, and an appreciation comparable with a rise in wage rates. A reduction in wage rates lowers the domestic price level in relation to prices prevailing overseas; a depreciation of our currency raises overseas prices, *measured in our own monetary unit,* in relation to domestic prices. However, in the case of exchange depreciation there are fewer internal complications than in the case of a decrease in wage rates, for the relationship between wage rates and prices is unlikely to be disturbed in industries producing goods and services which do not enter into foreign trade. Thus we may reasonably assume that a change in the exchange rate will affect our real national income only by way of changes in imports and exports. On the other hand, a change in the exchange rate introduces a new complication, for it makes it necessary to decide whether to measure changes in imports and exports in terms of the home monetary unit or in terms of the appropriate international currency unit, the £E. Incomes in the home country are paid in the home currency, and the prices of most home products are largely unaffected by the depreciation of our currency; hence if we are interested in the effects *on the national income* we should measure changes in imports and exports in home monetary units. Measured in this way, the total value of imports may either rise or fall as a result of the rise in their prices and the consequent decrease in the quantity imported; and if expenditure on imports changes, expenditure on home products is likely to change in the opposite direction. Thus

[8] As in the preceeding chapter, the home country is supposed to adhere to an international standard, which for the sake of simplicity we call 'sterling'. The argument which follows applies to *any* country adhering to *any* standard, but it is helpful to have in mind a specific example, which could be that of Australia adhering to the sterling standard.

(as in the case of a decrease in wage rates) a change in imports resulting from a depreciation of the home currency may be associated with either an increase or a decrease in our country's real national income, depending on the circumstances.

As for exports, the conditions of overseas demand will appear to improve; the price which foreigners will pay *in their own currencies* for any given volume of exports will now represent a larger sum than before when expressed in our own monetary unit. Hence our export producers will be able to increase their prices, measured in our currency, or alternatively to increase the volume of their sales, so that in either case the exporter will enjoy an increase in income, and will thus in all probability increase his real consumption. In addition, if exporters increase the volume of their sales, this constitutes a rise in *real* exports. (However, as in the case of a reduction in wage rates, the increase in real consumption and in real exports will be less in so far as exporters' costs of production include payments for imported goods.)

On the whole it would seem that, taking imports and exports together, a depreciation of our currency is likely to stimulate our real national income.

Effect on Balance of Current Payments. How does a depreciation of our currency affect the balance of current payments, assuming for simplicity that there is no change in the real national income? Here we must measure the change in imports and exports in terms of the international standard to which our country adheres, sterling. For changes in our balance of current payments are of importance to us because they help to determine the rate at which we accumulate or decumulate our London Funds, which are sterling assets. How then would a depreciation of our currency affect our imports, measured in £E? Since we would buy a smaller volume of imports, their total sterling value would decrease. The volume of exports may or may not increase, depending mainly on whether our exports are manufactures or primary commodities; but if the volume of exports does increase the sterling proceeds will either increase or decline, depending on whether or not the overseas demand for our exports is elastic. Hence, as in the case of a decrease in wage rates, we cannot establish for certain whether a depreciation of our currency will cause a favourable or an unfavourable change in the balance of current payments. Neglecting any change in the real national income, all we can say is that the total sterling value of imports will decrease and that the total sterling value of exports

will decline only if the volume of exports increases in the face of an *inelastic* overseas demand. The reverse applies, *mutatis mutandis*, for an appreciation of our currency.

The conclusion of the last paragraph calls into question the applicability of Figure 16, reproduced below as Figure 17, to all countries in all circumstances.

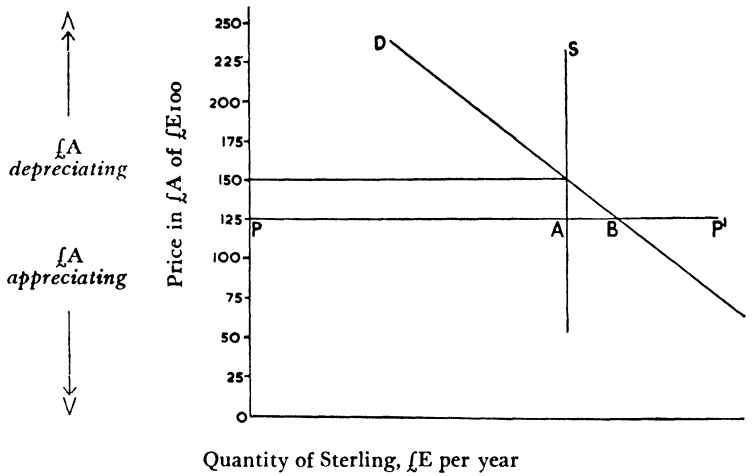


Figure 17—The Determination of the Price of Sterling

Figure 17 implies the thesis that a country's balance of current payments improves steadily as its currency depreciates (that is, in Figure 17, as sterling becomes more valuable in £A's), so that if at the present exchange rate the demand for overseas currency should exceed the supply (which would be the case in Figure 17 if the present exchange rate were £A125=£E100), a suitable depreciation of the home currency (to £A150=£E100 in Figure 17) would effectively eliminate the deficit without the use of international reserves. It must be admitted that this implied thesis is not necessarily true of all countries. It is most probably true in the case of Australia, for Australia's production of export commodities is peculiarly unresponsive to changes in their prices. measured in £A; hence the supply schedule of overseas currency (sterling in this case) is presumably more or less vertical, as shown in Figures 16 and 17. (The vertical supply schedule implies that the volume of Australia's exports, and hence their sterling sales-

proceeds, are comparatively unaffected by changes in the Australian exchange rate.) If, however, Australia's exports were, like Britain's, mainly manufactured articles, the production of which might readily be increased in the face of an improvement in the conditions of demand, and if also the overseas demand for these articles were inelastic (which may in the short run be true of Britain's exports), then the supply schedule for overseas currency would, like the demand schedule, slope downwards to the right, and the two schedules might conceivably never intersect, or at any rate be so nearly parallel that quite small shifts in either schedule would cause very great changes in the equilibrium exchange rate, represented by the point of intersection of the schedules. Thus if Australia exported mainly manufactured articles, the supply and demand schedules for sterling might be as shown in Figure 18, where the two schedules

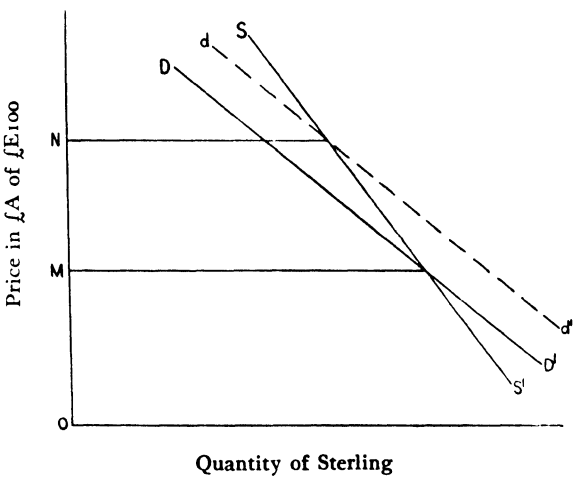


Figure 18

are so nearly parallel that an increased demand for sterling, due for example to government purchases of foreign munitions, might cause a very large depreciation of the £A, if it were allowed to fluctuate freely. In this diagram the shift in the demand schedule from DD' to dd' has the effect of causing the price in £A of sterling to rise from OM to ON, a much greater change than would have occurred had the supply schedule, SS', not been sloping downwards to the right.

Here then we have one possible reason for a country adhering to an international standard, instead of allowing its exchange rate to fluctuate freely in response to changing conditions of supply and demand. Freely fluctuating exchange rates might be tolerable if the fluctuations were reasonably small, but no country would willingly face the disclocation to its foreign trade which would result from its currency becoming virtually worthless.

It might here be objected that the demand for a country's exports is very unlikely to be inelastic (or even nearly inelastic) *in the long run,* since though more competitive selling prices may fail initially to attract much additional custom (especially in the case of manufactured articles) the inertia of overseas buyers will eventually give way. Such may indeed be the case, but it is surely the elasticity of export demand in the relatively short run which exerts most influence on the day-to-day demand for a country's currency.

Tariffs and Currency Depreciation Compared

It would seem from our conclusions so far that the effect of changes both in wage rates and in the rate of exchange on the balance of current payments, and even possibly on the real national income, does not permit of a simple answer applicable to all countries at all times.

In Table 30 our general conclusions are set down in tabular form. It has been assumed that the relevant international currency is sterling, and *no account has been taken either of the effect on the balance of current payments which would result from any change in the real national income, or of the effect, considered in Chapter 20, which changes in wage rates may have on the real national income other than by influencing imports and exports.* On these assumptions, it seems that the general effects on the balance of current payments and on real national income of a reduction in wage rates and of a depreciation of the home currency are much the same. In particular, the circumstances in which the outcome would be not an improvement but a *deterioration* in the balance of current payments are seen to be the same in the two cases; and likewise the circumstances in which there would be a reduction, rather than an increase, in real national income are also the same in the two cases.

Table 30 also includes, for purposes of comparison, the effect on both the balance of current payments and the real national income of a new or increased tariff. So far as *the balance of current pay-*

TABLE 30

The Effect of Various Measures on the Balance of Current Payments and the Real National Income of a Country (e.g. Australia) on the Sterling Standard

—	*Effect on Balance of Current Payments** (measured in sterling)		*Effect on Real National Income*		
	IMPORTS	EXPORTS	*via* IMPORTS		*via* EXPORTS
Reduction in Wage Rates	Reduces volume of imports and thereby reduces sterling expenditure	Volume of exports will (if anything) rise; this will increase sterling earnings if overseas demand is elastic	Reduces volume of imports but expenditure on imports may conceivably not fall proportionately with fall in money national income	Hence real expenditure on home products, though likely to increase, may conceivably decline	Increases purchasing power of exporters' incomes and hence real consumption; possibly also increases the volume of exports
Exchange Depreciation	as above	as above	Reduces volume of imports but expenditure in home currency on imports may conceivably increase		as above
Increased Tariff	as above	Volume of exports will (if anything) fall; this will increase sterling earnings if overseas demand is *in*elastic	Reduces payments to foreigners without reducing private spendable income, provided that there is an offsetting reduction in other taxes; hence causes increased expenditure on home products		The opposite of the above, but only in so far as higher duties are imposed on imported materials required for producing export goods

* Ignoring any effect on imports of a change in real national income.

ments is concerned, a tariff will affect the volume (and sterling value) of exports, only in so far as duties are imposed on imported materials used for the manufacture of export goods.[9] Thus whereas currency depreciation tends to lower the export prices, measured in sterling, of our manufactured goods, and therefore to increase the volume of exports,[10] a tariff has, to some extent, the opposite effect. Hence a country's sterling earnings are increased by currency depreciation if overseas demand is elastic and by a tariff if overseas demand is inelastic. The effect of the two policies on sterling expenditure on imports is much the same, except that a tariff can be selective, i.e. can be made to apply with unequal incidence as between different types of goods or as between different sources of supply.

As to the effect of a tariff on *the national income,* in so far as it depresses the volume of exports it will thereby depress real national income. On the other hand, a tariff can in all circumstances be made to achieve a diversion of expenditure from imported to home-produced goods; all that is required is that the additional government revenue obtained from the new tariff should be offset by an equal reduction in other taxation or by an increase in transfer payments. For the change in expenditure on imported goods, following the imposition of a tariff, is compounded of a reduction in payments to the overseas suppliers (since the volume of imports is less) and an increase in import taxes paid to the government. If, therefore, the latter payment is restored to the public by a corresponding concession, more spendable income will be available for purchasing home products. The increase in real expenditure on home products will be the greater if the new tariff is imposed exclusively on goods for which there is a passable home-produced substitute, the output of which can readily be increased.

Countries wishing to improve their balance of current payments or to increase their real national income have frequently shown a preference for the tariff as against either wage reductions or currency depreciation. The unpopularity of a reduction in wage rates is readily understood. Unless the reduction applies equally and simultaneously to all workers, the workers whose wage rates

[9] No attempt is made in Table 30 to allow for the possibility of overseas countries retaliating against our tariff or exchange depreciation by, e.g. imposing a tariff against *our* goods.

[10] This tendency may be weakened, but cannot be reversed, by the fact that currency depreciation, like a tariff, may increase the prices of imported materials used for producing export goods.

are cut first or cut furthest suffer a deterioration in their standard of living, whereas their more obstinate colleagues in other trades enjoy improved standards. This naturally puts a premium on obstinacy. But the workers' reluctance to accept a wage reduction is explicable even if all wage rates could be cut equally and simultaneously, for (as we saw in Chapter 20) a general reduction of wage rates has the effect of reducing the proportion of the national income going to workers as a whole.

We are left then with the question: Why prefer tariffs to currency depreciation? A tariff is clearly much more efficacious than currency depreciation in improving the balance of current payments whenever the overseas demand for exports happen to be inelastic.[11] A tariff would also be more efficacious in stimulating the real national income, provided that the duties could be levied predominantly on goods, substitutes for which can readily be produced in the home country. The greater efficacy of a tariff would be more marked if imported materials needed for producing export goods were exempt from duty and if it were possible to avoid taxing goods imported from countries which are good customers for our exports, and which are therefore able to retaliate effectively against taxes imposed on their goods.

A third reason for preferring a tariff to currency depreciation is that the latter can be more effective than the former in improving the balance of current payments and raising the real national income only if it achieves a substantial increase in the volume of exports. This may frequently mean forcing more goods on reluctant foreign customers, who will take them only at an appreciably reduced price, measured in overseas currency. At the same time there may be some reduction in import prices, measured in overseas currency,[12] but on balance there will result a deterioration in the terms at which our country exchanges its exports to, for imports from, the rest of the world or, in technical language, a deterioration in our *terms of trade*. By contrast, a tariff does not have the effect of increasing the volume of exports, but rather the contrary, so that there is no deterioration, and maybe an improvement, in the terms of trade. Hence, looking at the matter from a strictly national

[11] It is of course conceivable if the overseas demand for our goods is inelastic, that our balance of current payments might be improved by *appreciating* our currency; but this remedy has the disadvantage that the demand for exports, however inelastic it may be in the short run, is likely to be elastic in the long run.

[12] See p. 222, footnote 2.

and selfish point of view, currency depreciation, unlike a tariff, suffers from the disability that it results in our being 'exploited' by the foreigner, who is able to exchange his goods for ours on more favourable terms.

It would, however, be mistaken to measure our country's benefit from foreign trade merely by the terms of trade, without reference to the volume of trade, so that the case for preferring a tariff to a depreciation of the currency is by no means decisive in all circumstances, even from a selfish national point of view. For example, if we had already cut down our imports to essentials which could not be produced at home, we ought in our own interests to incline towards a policy of expanding our exports, even though this would cause an adverse movement in the terms of trade, in preference to a policy of contracting still further the volume of our imports. Of course if our object was to improve our balance of current payments and the overseas demand for our goods was thought to be definitely inelastic, an increase in exports would be inappropriate, but subject to this proviso we ought to attach importance to the *volume* of trade as well as to the *terms* of trade.

The above arguments, some of which indicate that a tariff may in certain circumstances be preferable to currency depreciation, should not be taken to imply that in practice tariffs are imposed only when they are the best means to the desired end or that the ends desired by tariff-makers are invariably creditable. Tariffs are frequently imposed from prejudice or ignorance or as the result of political pressure from interested parties, without reference to the good of the community as a whole. Even when they are imposed for the advantage of the community, it is frequently a selfish national advantage that is sought, such as the stimulation of the home national income at the cost of spreading depression overseas, or of improving the terms of trade with the rest of the world. Moreover, far too little heed has been paid to the fact that beggar-my-neighbour is a game that all can play, and that if all do play it, the players as a whole, and possibly every single player, will finish by being worse off than at the beginning. There are in fact only a few creditable economic aims which are attainable by the use of a tariff, and undoubtedly the most important of these in practice is to avoid the exhaustion of international reserves. Whether a tariff is the best means to this end depends, as we have seen, on the circumstances; however, there are almost certainly *some* circumstances in which a tariff is to be preferred to the alternatives. But

clearly this particular reason for a tariff cannot be used to defend tariffs in *all* countries, for if some countries are losing international reserves, other countries must be receiving them—it is obviously impossible that every country should be losing reserves to the rest of the world. The universal popularity of tariffs throughout the world therefore suggests that some at least have been imposed from prejudice or ignorance, or for beggar-my-neighbour motives, or again for non-economic motives, such as to foster industries which are valued for social or strategic reasons.[13]

Before proceeding to another topic, we should take note of yet another device for regulating imports, the import *quota*. A quota differs from a tariff in that it reduces imports not by taxing the imported goods but by rationing them. The usual way in which a quota is operated is for the importation of specified goods to be made illegal, except under licence, licences being issued to 'approved' importers on the basis of some supposedly equitable rationing scheme. The main disadvantage of a quota, as compared with a tariff, is that it in effect creates a legal monopoly for the benefit of the licence holders, who are thereby enabled to extract higher prices from their customers. (If a tariff were imposed instead of a quota, the customers would still have to pay higher prices, but the addition to the price would accrue to the government, not to the importers.[14])

The Approach to Full Employment

We saw in Chapter 15 that as an economy approaches a state of full employment, any increase in income-generating expenditure will increasingly take the form of a rise in prices instead of an increase in output. Though this was argued on the basis of a *stable* price-output schedule, rising upwards to the right with a steepening gradient (like Figure 7 on page 124), the consequence of the price rise, so far as imports and exports are concerned, would be much the same as with a price rise brought about by an upward shift in the price-output schedule, due to a rise in wage rates.

If then we want to apply our conclusions in Chapter 24 to an

[13] A common economic argument in favour of a tariff is the so-called 'infant industry' argument: new industries must be protected until they have had time to become well established. However, a cynic might note how rare it is for industrial infants to grow up.

[14] Cases have been known where licences have been issued not to the importer but to the overseas exporter or the exporting country. This way of arranging a quota is stupid or at any rate quixotic, for it enables the foreigner to enjoy monopoly profits at the home country's expense.

economy approaching a state of full employment, we must superimpose on them the consequences of a rise in prices, these consequences being the opposite of those specified in Table 30 as resulting from a reduction in wage rates.

Full Employment

We have still to consider the relation between the balance of current payments and the national income at times of full employment. Let us therefore assume a given official exchange rate, and follow through the effects at such times of an increase in demand.

1. If the increased demand is by foreigners, this will involve an increase in the volume of exports only in so far as the purchasers are able to divert to export production resources which have hitherto been supplying the home market. It is difficult to discuss in general terms how this could be achieved in the case of an economy in which neither wage rates nor product prices respond to an increase in demand, for if the foreigner is not allowed to get the things he wants by bidding up their prices, but is instead told (in effect) to join the queue, the forms of persuasion he may use to secure preferential treatment are so varied and devious that no general conclusions could be drawn. Let us then make the contrary assumption that foreigners do bid up the prices of the goods they want.

How, in these circumstances, would the extra goods be made available for export? Let us consider all other demands on the home market under the three headings of government purchases, material investment, and personal consumption, all measured in real terms. Government purchases in real terms would probably be unaffected by the increase in exports, while real investment would if anything be stimulated rather than depressed. Hence if real exports increased, it would have to be at the expense of real consumption, or as the result of an increase in imports. In so far as the former was the case, it could occur only while the Multiplier effect described in Chapter 21[15] was 'working itself out': in other terms real exports and real invesment could remain at a higher level, at the expense of a reduction in real consumption, only if the price level and the *money* national income increased continuously without limit. However, in the face of persistently rising prices, real exports would clearly *not* be maintained.

What will be the effect on the balance of current payments?

[15] P. 187 ff.

The initial increase in foreigners' demand for our goods, increasing as it would both the volume and the prices of our exports, will of course improve our balance of current payments. But if the prices of our goods continue to rise, for reasons we considered in the previous paragraph, this will cause a slackening of the flow of our exports in volume, and in total value also assuming that the demand of foreigners for our goods is elastic. On the side of imports, a continuing rise in the prices of home products will cause a continuing increase in the volume, and therefore in the total value, of goods imported. It thus seems that the initial improvement in our balance of current payments, due to the increased foreign demand for our goods, is likely (though not certain) to be steadily eroded by the consequential rise in the prices of home products.

2. If the initial stimulus to our national income is not external but internal, the effect on our balance of current payments would almost certainly be adverse if we consider a regime in which neither wage rates nor product prices respond to an increase in demand, for home residents would almost certainly find means of buying more imports and of diverting goods from the export market to the home market; but how they would do these things and on what scale are not questions on which it is easy to generalize. Let us therefore make the contrary assumption. Then the effect of the increase in domestic demand will be to cause an increase in prices, and this will continue until the increased demand is either choked off or alternatively satisfied by an increase in imports and by a diversion of goods from the export market to the home market. In either case, the rise in prices will lead to an increase in the volume of imports and a decrease in the volume of exports. Imports will also increase in total value (since the prices of imported goods will not fall), and exports will decline in total value if overseas demand is elastic. Though we cannot say *a priori* what the outcome will be, practical experience seems to indicate that (so long as the old exchange rate is maintained) a rise in money national income at times of full employment, if due to an increase in domestic demand, is associated with a *deterioration* in the balance of current payments.

CHAPTER 26

INTERNATIONAL ASPECTS OF THE TRADE CYCLE

THE RELATIONSHIP which we have considered between a country's national income and its balance of current payments helps to elucidate some of the international aspects of the trade cycle. As we have seen in Chapter 20, an important feature of the trade cycle has been the synchronization of business fluctuations in different countries. The basic reason for this synchronization has already been suggested in the last two chapters: prosperity in one country 'spills over' into other countries because it usually results in an increase in imports, and depression is equally contagious because it tends to bring about a reduction in imports.

Let us suppose that for any of the reasons suggested in Chapter 20 there is a collapse of the boom in some one country, say Ruritania, whose imports from the rest of the world thereupon contract. As a result there will be a tendency for the national incomes of other countries to decline, and in addition many countries (particularly those whose international reserves are already nearly down to the prudent minimum) may run into 'balance of payments difficulties', in the sense of their balances of current payments becoming so adverse as to threaten the exhaustion of their international reserves. Hence for three distinct reasons, there will most likely be a general decline of imports into countries other than Ruritania:

1. Unless the other countries take rapid and effective action, on the lines described in Chapter 20, to offset the consequences of the fall in their exports to Ruritania, there will be a general decline in national incomes throughout the world, and consequently a general decline in imports.
2. The most popular, if pernicious, kind of offsetting action is the imposition of a higher tariff, which restores prosperity at home at the cost of depressing still further the level of imports.
3. Countries experiencing balance of payments difficulties may have to cut down their imports, irrespective of what happens to their national incomes.

Thus there is likely to follow a general and cumulative decline in foreign trade and in the national incomes of countries throughout the world. Countries with ample international reserves may do

something to check the landslide, for they can adopt measures (such as additional government purchases) designed to maintain both their national incomes and their imports; but even with the best intentions and the greatest competence such measures may prove inadequate, so that the most we should expect of a country is that its imports decline less rapidly than its exports. Countries which run into balance of payments difficulties would be unable to achieve even this measure of success in combating the international recession, for of necessity they must reduce their imports more or less in accordance with the fall in their exports. Worst of all is the policy of the country which stimulates its own national income with beggar-my-neighbour remedies, such as the imposition of tariffs sufficiently severe to restrict imports by more than the decline in exports.

It should be noted here that, in the past, countries experiencing balance of payments difficulties at times of an international business recession usually include most of the countries whose exports are predominantly primary commodities. Australia, for instance, has almost always had balance of payments difficulties, reflected in a serious decline in London Funds, whenever there has been a world depression. Three reasons have been offered in explanation of this phenomenon:

1. The conditions of production of, and demand for, most primary commodities, particularly farm products, are such that their prices fluctuate, between boom and depression, far more than the prices of manufactured articles. Hence, though the volume of production, and of exports, of primary commodities does not contract very much in a slump (indeed, if it did the fall in prices would be less catastrophic) the *total value* of output and of exports falls more than in the case of manufactured products.

2. The countries which export primary commodities have in the past borrowed heavily overseas, frequently on fixed-interest terms, for purposes of internal development, such as the construction of railways and public utilities. Much of this overseas borrowing was repaid during the last war, but prior to 1939 a large amount was still outstanding and the interest burden constituted a highly inflexible element in the borrowing countries' overseas payments.

3. Though the interest burden on past overseas borrowing constitutes an overseas payment on current account, new borrowing constitutes an overseas receipt on capital account, and hence serves to alleviate balance of payments difficulties. In practice, however, the great producers of primary commodities, such as Australia, have always found it easy to borrow overseas during a boom but

difficult or impossible at times of depression. The reluctance of investors in the lending countries, particularly Britain, to subscribe to Australian securities at times of depression must be attributed partly to the knowledge that the Australians were in balance of payments difficulties and might conceivably have to default on interest payments, partly to the knowledge that Australian enterprises were, like British enterprises, suffering a serious decline in profits. The former reason applied to all Australian securities, government and corporate alike, the latter only to corporate issues. But the consequences were unhappily the same: just when Australia (and countries similarly situated) were getting into balance of payments difficulties because of the collapse of the prices of primary commodities, their difficulties were seriously aggravated by a virtual cessation of overseas receipts on capital account.

The World Multiplier

The reader will probably have suspected that the cumulative process by which a recession or recovery spreads from country to country is somewhat analogous to the Multiplier effect in a single country. Nor would such a suspicion be unfounded. We could, if we wished, study the international trade cycle by abstracting from it all the complications which distinguish international from domestic trade, and thus treat the world as a whole as a single closed economy. Looking at the matter in this way, we need to revise our notions about the basis of Multiplier theory, the marginal propensity to consume. The marginal propensity to consume in any country depends partly on how any increase in its national income is distributed, and partly on how each of the recipients of the increase disposes of his share. With respect to a single country the only method of disposal which is income-generating is the purchase of *home-produced* goods and services, but in the world as a whole the purchase of *any* goods and services, whether home-produced or imported, is income-generating, for imports generate income in the countries from whence they are obtained. Thus if we transfer our attention from one country to the world as a whole, we cannot derive the *world* marginal propensity to consume, or the *world* Multiplier, from the respective marginal propensities to consume of the individual countries, for such a procedure would lead us to underestimate the world Multiplier. A simple example will illustrate this point. Suppose that in each single country the marginal propensity to consume home products is one half and the marginal propensity to consume imports is one eighth. Then the

world marginal propensity to consume is not one half but five-eighths. Thus, using the formula

$$k = \frac{1}{1-c}$$

we see that the Multiplier of the individual countries is 2 whereas the world Multiplier is $2\frac{2}{3}$. Hence, on the basis of this example, a fall of £x a month[1] in the national income of Ruritania due, say, to a decline in her material investment of home products, would cause the world income to fall by £$2\frac{2}{3}x$ a month, even though her domestic Multiplier would suggest a fall in her own national income of only £$2x$. The discrepancy between the two results has two explanations. First, Ruritania's home Multiplier of 2 neglects the decline in the national incomes of other countries. Second, her home Multiplier also neglects the fact that the depression which Ruritania spreads among her neighbours may redound to her disadvantage, in the form of a decline in her exports and hence in her national income. Nor is this the end of the story. For quite possibly the decline in material investment in Ruritania may have comprised a decline in the purchase of imported goods as well as of home products. Let us by way of illustration put the decline in the former at £$\frac{x}{4}$. Then the full decline in world income will not be £$2\frac{2}{3}x$ but £$3\frac{1}{3}x$, for the world Multiplier operates, as it were, on the total decline in material investment, not simply on the decline in investment of home products.

The above argument gives the basis of the explanation of the cumulative spread of depression (and *mutatis mutandis* of recovery) from country to country. The Multiplier of an individual country, as defined in Chapter 17, significantly under-estimates the consequences on world income of an initial variation in material investment or in government purchases, or of a shift of a country's aggregate consumption schedule. In order therefore to take into account the full consequences of a reduction in, say, the pace of material investment, we need to pay attention not merely to the home Multiplier of the country concerned, but to the repercussions on international trade and on the national incomes of *all* countries.

[1] This and the other flows of income and expenditure mentioned in this paragraph must be supposed to be in real terms: i.e. the money amounts must be supposed to have been adjusted for changes in an index reflecting the world price level of final output. (It must be admitted that the difficulties of compiling such an index are so formidable that no one is likely to make the attempt.)

BIBLIOGRAPHY

The following comprises a short selection of authoritative works, each of which treats part of the subject matter of *Wealth and Income.* The list is very far from being exhaustive and is intended merely to give the beginner an introduction to the vast literature which relates to this field of economics. The more difficult books are marked thus*.

Chapters 1 and 2

J. R. Hicks: *The Social Framework,* Part III (Oxford University Press, 1952)

Chapters 3 to 7

W. T. C. King: *The Stock Exchange* (London, Allen & Unwin, 1947)

F. W. Paish: *Business Finance* (London, Pitman, 1953)

N. B. Rydge: *The Australian Stock Exchange* (Sydney, Rydge's Business Journal, 1934)

Chapters 8, 9 and 10

W. D. Arndt: *The Australian Trading Banks* (Melbourne, F. W. Cheshire, 1957)

W. M. Dacey: *The British Banking Mechanism* (Hutchinson, 1958)

L. F. Giblin: *The Growth of a Central Bank* (Melbourne University Press, 1951)

R. S. Sayers: *Modern Banking* (Oxford University Press, 1958)

R. S. Sayers and others: *Banking in the British Commonwealth* (Oxford University Press, 1952)

R. S. Sayers: *Central Banking after Bagehot* (Oxford, Clarendon Press, 1957)

Chapters 11, 12, 13 and 22

J. M. Keynes: *General Theory of Employment, Interest and Money,* Book IV* (London, Macmillan, 1936)

F. W. Paish: 'Cheap Money' *(Economica,* August 1947)

D. H. Robertson: *Essays in Monetary Theory** (London, King & Staples, 1940)

Joan Robinson: *The Rate of Interest* (Macmillan, 1952)

T. Wilson: 'A Reconsideration of the Theory of Effective Demand'* *(Economica,* November 1947)

Chapters 14 and 15

R. I. Downing: *National Income and Social Accounts, an Australian Study* (Melbourne University Press, 4th ed., 1959)

H. C. Edey and A. T. Peacock: *National Income and Social Accounting* (Hutchinson, 1954)

Chapters 16 to 20

H. Arndt: *Economic Lessons of the 1930's* (Oxford University Press, 1944)

W. H. Beveridge: *Full Employment in a Free Society* (London, Allen & Unwin, 1944)

F. A. Burchardt and other members of the Oxford Institute of Statistics: *The Economics of Full Employment,* Parts I to IV* (Oxford, Basil Blackwell, 1944)

D. B. Copland: *The Road to High Employment* (Sydney, Angus & Robertson, 1945)

A. H. Hansen: *Fiscal Policy and Business Cycles* (New York, Norton and Co., 1941)

M. Kalecki: *Essays in the Theory of Economic Fluctuations** (London, Allen & Unwin, 1939)

J. M. Keynes: *General Theory,* Books III and IV*

J. A. Schumpeter: *Business Cycles** (New York, McGraw-Hill, 1939)

H. W. Singer: 'Wage Policy in Full Employment' *(Economic Journal,* December 1947)

T. Wilson: *Fluctuations in Income and Employment** (London, Pitman, 1948)

Chapter 21

League of Nations: *The Course and Control of Inflation** (Geneva, 1946)

A. J. Brown: *The Great Inflation, 1937-51* (Oxford University Press, 1955)

Chapter 23

G. Clare and N. Crump: *The A.B.C. of the Foreign Exchanges* (London, Macmillan, 1936)

Gillett Brothers: *The Bill on London* (Chapman and Hall, 1952)

Chapters 24 to 26

R. F. Kahn: 'Tariffs and the Terms of Trade'* *(Review of Economic Studies,* No. 37)

C. P. Kindleberger: *International Economics* (Illinois, Richard D. Irwin, 1958)

J. E. Meade: *The Balance of Payments** (Oxford University Press, 1951)

Joan Robinson: *Essays in the Theory of Employment,* Part III (London, Macmillan, 1937)

Joan Robinson: 'The Pure Theory of International Trade'* *(Review of Economic Studies,* No. 36)

M. C. Samuelson: 'The Australian Case for Protection—Re-examined'* *(Quarterly Journal of Economics,* November 1939)

B. Tew: *International Monetary Co-operation* (Hutchinson, 1959)

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