WHAT EVERYBODY WANTS TO KNOW ABOUT MONEY

A PLANNED OUTLINE OF MONETARY PROBLEMS

By
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Chapter III: Currency and Central Banking

By R. F. Harrod

Kinds of Money. The function that money is required to perform in modern society is in essence a simple one. But the mechanism by which money is provided and used has become very complex with the course of time, and whoever understands these complications thoroughly is well on the way to knowledge of why and how man is failing so manifestly to achieve the comfort and happiness that lie within his grasp.

It is the purpose of this chapter to describe the regulations governing the issue of currency and the tasks which central banks do and might undertake. A description of rules governing procedure whether statutory or customary is, however, bound to degenerate into a meaningless catalogue, unless related at every point to an account of the essential purpose and nature of money. In the task of description it will probably be best to begin not with what is most fundamental but with what is most familiar.

The economic life of every individual has two aspects, his personal contribution by the exercise of energy or skill to the wealth of the community and his draft upon that wealth to provide for his own needs and comforts. The amount he is allowed to draw out of the common pool for himself or his dependents is closely related to the value assigned to what he puts in; his contribution is in an individualistic community taken to include not only that due to his personal exertion but also that which accrues from any fixed property the ownership of which is vested in him. His act of contributing to the common stock is marked by the receipt of units of money; the value assigned to the contribution of each individual in a given period may be measured by comparing the number of units he receives with the number which any other receives. The quota of goods which he can then draw out of the common pool is proportional to the number of units of money he can offer for them. He is given money rather than goods in the first instance, in order to allow him freedom to satisfy his own private tastes; this freedom is a great asset; money entitles him to receive goods in general; having made his contribution to the common stock, he can pause to consider in what form he would like to take out the share of it to which he has become entitled.

If an individual is asked how much money he has, he is likely to answer in a way that is not in accord with economic terminology. He will assess the value in terms of money of all the property he owns at the time, and give as his reply this value expressed in pounds, shillings and pence. His answer clearly does not indicate the actual number of pounds, shillings and pence he possesses, but this plus the number of pounds, shillings and pence he could acquire by the sale of the other items of his property, stocks and shares, land, houses, industrial plant, etc. The valuation thus includes not merely his title to draw upon the community’s stock of goods, but also the number of goods which he has already chosen to acquire. If pressed by his economist interrogator to eliminate the items which do not actually constitute money, but are merely exchangeable for money in the market, how should he proceed? All he need do is to ascertain the number of coins and notes in his possession and add this to his credit balance at the bank. (If, however, he is overdrawn at the bank he must not subtract his debit balance).\(^1\) The total amount of money in the community is found by adding together the amounts held by all individuals, corporations and institutions; it is equal to the total of coins and notes in circulation plus all the deposit balances at all the banks. The amount of money held by the banks themselves should, however, not be included, for reasons which will appear in due course.

\(^1\) Cp. p. 133.
On this basis the monetary stock of the community is of two main kinds, the notes and coins on the one hand, constituting the currency, and bank balances on the other. First let us direct our attention to the notes and coins.

Coins may be principal or subsidiary. Subsidiary coins, half-crowns, shillings, pence, etc., in our own system, satisfy the needs of the community for small change. They are issued at the discretion of the Mint; their melting value is well below the value assigned to them in the monetary system and in law they can usually only be tendered in payment for limited amounts. The principles on which they should be issued are now well understood, and involve no unsolved problems. They need not detain us here.

Nor need principal coins long detain us; for, except in the East, they have gone out of fashion since the war. For purposes of this exposition, principal coins can be considered along with notes. When notes are issued there is usually a provision that a certain quantity of gold (or silver) must be held in reserve by the issuing authority to back them. Principal coins may be regarded as notes which carry the whole or part of this backing about with them. When the coins have a melting value equal to their value in the monetary system, their backing is 100 per cent. There is no difference in principle between such coins and the notes called Gold Certificates which constitute part of the U.S.A. currency and have 100 per cent gold reserve kept to back them. Thus the main kinds of money which we shall have to consider are currency notes on the one hand and banking deposits on the other.

The Gold Standard. There are two main kinds of monetary system, those the value of whose units is kept equal to some external standard, such as a certain quantity of gold or silver or units of another monetary system, and those which are independent or autonomous. In the former case the country which has such a monetary system is said to be "on the gold standard," "on the silver standard," or, where the external standard is the money of another country, "on the sterling standard," "on the dollar standard," etc. Monetary authorities have usually made it their ideal to maintain such a standard, and regulations governing the issue of notes and principal coins have accordingly been adapted to that end. Two conditions are requisite for the effective maintenance of such a standard. One is that holders of gold, silver, the foreign currency, or whatever the standard commodity may be, should be able to get units of the home currency in exchange for it without limit at the official rate of exchange; the other is that holders of the home currency should be able to get units of the standard commodity without limit at the official rate of exchange. The former condition prevents the value of the home currency rising above its official valuation in terms of the standard; the latter prevents it falling below.

The first condition is easy of fulfilment; the currency authority has merely to print notes or mint coins in exchange for the standard commodity tendered. It is easy enough to print notes; and, as for the coins, since the value of the metal in the coin must never exceed the official valuation of the coin—for otherwise the coins would be melted and go out of circulation—the cost of providing the metal for the coins is always covered by the standard metal tendered in exchange for them at the official rate. Actually the issuing authority may be involved in a small loss; in the extreme case of notes for which 100 per cent metallic reserve is required or of coins the melting value of which is not less than their official value, the actual cost of printing or minting is uncovered. Some monetary authorities have thought it right to make a charge for this; England for centuries has made no charge, but the metal tendered was retained for a period of ten days, the presumed period required for the process, or, alternatively, cash could be obtained from the Bank of England on the spot on the payment of a small interest charge. The official valuation of sterling was £3 17s. 10½d. = 1 oz. 22 carat gold. The Bank of England was willing to give £3 17s. 9d. down. By the act restoring the gold standard in 1925, the Bank of England
was authorised to buy gold, i.e. issue notes against the tender of the standard metal, at £3 17s. 9d. an ounce, and sell gold, i.e. issue the standard metal against the tender of currency, at £3 17s. 10½d. an ounce. This difference between the buying and selling price meant that sterling had not an absolute value in terms of gold, but a value that could fluctuate between the two limits mentioned. This is a small technical point, but one that the reader would do well to bear in mind, as an extension of the gap, while consistent with gold standard principles, would do much to modify the working of the gold standard, as will be explained hereafter.

The second condition, namely that the monetary authority should always issue the standard metal in unlimited quantities against the tender of domestic currency, is less easy of fulfilment. It would be perfectly easy and indeed automatic if the issuing authority always retained all the metal that was ever tendered to it when it issued currency as a reserve against reverse demands. There would then be 100 per cent backing against all notes issued, or, in the case of coins, 100 per cent against the difference, if any, between their melting value and their official valuation. Such a system would work smoothly enough, but there are three cardinal objections to it. (1) It would be immensely expensive for any country adopting it. For instance, the Bank of England would have to hold over £400 millions of gold in addition to the reserve which it requires for other purposes. The economy, which is the main advantage of a paper currency, would be entirely forgone. (2) If it were generally adopted, the amount of paper currency in circulation in the world would have to be drastically curtailed, and this would lead to disturbances in the economic system much more violent even than those which we are at present witnessing. (3) A country adopting it would not be safeguarded against being driven off the gold standard. A gold standard can only be preserved if the central bank is able to meet its liabilities; but it has liabilities other than its note issue which it is more likely to be called upon to meet in a crisis, and the system proposed would not automatically provide for its solvency in respect of these.

Regulations governing the Note Issue. In recent times the central bank has usually been charged with the business of note issue. With a view to ensuring its ability to convert the notes, when called upon, into the standard metal (which, in what follows, we shall assume to be gold), the legislature has imposed certain obligations upon it. These may be divided into three main types. (1) There is the system embodied in Peel’s Bank Act of 1844, by which the Bank of England was allowed to issue £14 million of notes without gold backing while every note issued in excess had to have 100 per cent backing.¹ The figure for the unbacked issue was fixed at £260 million in 1928 to accord with modern requirements, and the right was granted to issue additional unbacked notes by agreement with the Treasury (a right which was utilized to the extent of £15 million between August 1931 and April 1933). This system is known as that of fixed maximum fiduciary issue. (2) It may be laid down that the Bank must retain a certain percentage of gold against the note issue. For instance, the Federal Reserve Banks of the U.S.A. must retain 40 per cent, the Bank of France 35 per cent, etc. This is known as the fixed minimum percentage system, and has been the most popular in recent years. (3) There is the system by which no specific amount of gold backing is required but a limit is placed on the total number of notes which may be issued. The Bank of France operated under this system before the war, and it is of especial interest as it was recommended for this country by the Macmillan Committee on Finance and Industry which reported in 1931.

¹The limit of £14 million rose to £19½ million between 1844 and 1923, owing to the fact that by the Act of 1844, private banks were allowed to retain but not increase their private note issue, and, as these banks were amalgamated or turned into Joint Stock Companies, their right to issue lapsed, while two-thirds of the issue previously allowed them was added to the fiduciary issue of the Bank of England.
In favour of the second system it may be said that it affords greater elasticity than the others; in times of expansion it is also more economical than the first, unless the law is frequently revised. When the currency requirements of the community are increasing, a larger super-structure of currency can be erected on a given basis of gold. The objections to this system appear, however, when it is put to the test by which all such systems must be judged, and notes are presented for conversion. The Bank can then only use the reserves which it has in excess of legal requirements. Thus suppose that the required proportion is 40 per cent, the notes outstanding £100 and the gold reserve £40. The legal requirement is fulfilled, but not one single note can be converted. The redemption of one note would reduce the outstanding note issue to £99 and the reserve to £39, but that would be only \( \frac{99}{40} \) per cent, which is below the legal requirement. Thus a large part of the reserve is sterilised. Since the only object of having a reserve is that in certain eventualities it should be used, the second system is self-contradictory; it locks up the reserve which it requires to be held, and makes it unusable. It is also extremely wasteful, as the gold legally required has to be held in addition to any gold that the Bank may think it needs as an effective reserve for converting notes. It is analogous to the regulation that at no time may there be less than three cabs on any rank. It has been held in the interest of gold economy, that the legal percentages should be reduced. This does not go far enough. The percentage system should be abolished. If the choice is between the first and second systems, the first is certainly to be preferred.

It remains to consider the third. It has already been stated that the central bank has other liabilities than those arising out of its note issue and that it is precisely to meet these liabilities that a central bank usually requires its gold reserves in an emergency. By reference once again to the principle that reserves are held for use and not for ornament, it appears that the Bank should be allowed to mobilise all its gold in an emergency and that no part of it should be ear-marked against its note liability, in respect of which no demand for gold may be occurring at the time. The third system recognises this fact. An over-issue of notes is guarded against by the provision for a maximum total issue; this can be revised from time to time, to allow for expanding needs. The third system is therefore free from the objections which may be levelled against the others.

Two further provisions should be noticed. Some central banks are allowed to hold part of the cash reserve legally required, in the form of "foreign exchange" (devisen). This expression includes foreign currency, deposits in foreign banks and drafts of one form or another of first class standing on foreign banking institutions; the foreign country in question must be a gold standard country. For instance, the Reichsbank, the Central Bank of Germany, is required to hold a cash reserve of 40 per cent against its notes; but of this only 75 per cent (=30 per cent of its note issue) need take the form of actual gold; the remaining 25 per cent (=10 per cent of its note issue) may take the form of a holding of foreign exchange. Since the person presenting notes for conversion in most cases desires to obtain a given quantity of gold value, usually in order to acquire foreign currency, and not bar gold, the offer of foreign currency in exchange for notes satisfies his requirements equally well, and is as effective in preventing the notes from depreciating as the offer of gold would be. For this reason a central bank, operating under the obligation to maintain a specified gold proportion, often keeps that part of its reserve which is in excess of legal requirements, i.e. that part which is ready for effective use, in the form of foreign exchange. The object of this device is economy. It reduces the total quantity of gold metal which the central banks need to keep. Unfortunately the system received a severe shock when Great Britain, whose currency, being among the soundest, was often held as a foreign exchange reserve by foreign central banks, went off the gold standard in 1931. The reserve on which these central banks had been relying depreciated in gold value and they
became much less inclined to hold their reserve in this form. Thus the Bank of France converted approximately £168 million (gold) of foreign exchange into gold in the following year; the National Bank of Belgium similarly converted £233 million, the Netherlands Bank £133 million, the Swiss National Bank £19 million, and the Bank of Italy £23 million. Their action alone represents a wasteful absorption of about a tenth of the monetary gold in the world.

When Great Britain returned to the gold standard in 1925 it was laid down that the Bank of England should not sell gold in exchange for notes in smaller quantities than 400 oz. This was a natural corollary of our decision not to return to a gold circulation. The object was to economise gold. The provision was designed to prevent people from withdrawing small quantities of gold for hoarding purposes. Since, if the notes were tending to depreciate, enough to buy 400 oz. could always be collected, this provision in no way interfered with the effective maintenance of a gold standard.

Such are the methods by which the State regulates the maximum of notes which a central bank may issue. It remains to consider how many notes are likely to be issued and how many it is desirable that there should be issued. Except in a crisis the maximum is seldom reached. The Issue Department of the Bank of England does, it is true, issue as many notes as are allowed under the law. But these do not all go into circulation; the other department of the Bank, the Banking Department, holds the residue as an asset readily convertible into gold by transfer to the Issue Department. The position is precisely the same as though the Issue Department only issued the notes which the Bank wished to put into circulation, and the residue of gold not required by the Issue Department were held as a reserve by the Banking Department against its liabilities. The “free gold” of the Bank of England, that is, the gold which it can use for other purposes than to meet the presentation of notes, is equal to the notes in the Banking Department, i.e. to the notes issued by the Issue Department but not in circulation outside the Bank. It should be noticed that the gold in the Issue Department which is expressed in sterling continues to be given its official pre-1931 valuation in sterling, although since Great Britain departed from the gold standard its actual value has been greater than this.

Banking Deposits and Cash. It is impossible to discuss the topic proposed in the last paragraph without first advertising to the other form of money in circulation, bank deposits. In a modern system there is usually a central bank responsible for the note issue and holding deposits for other banks, and deposit banks holding deposits for the main body of the public. Their customers' deposits constitute the principal liability of these deposit banks; the customers have the right and may wish to exercise the right to draw out their money, on demand in the case of current accounts and after short notice in the case of deposit accounts. The term deposit is used to cover both forms of account. The banks hold assets of various forms against this liability; part of their assets consists of cash; this cash takes the form partly of notes and coins, partly of a deposit at the central bank. In truth the whole of their cash assets, apart from small change and principal coins, if any, usually constitute a liability of the central bank, their notes a note liability and their deposit at the central bank a deposit liability. The money held by the general public, in the sense defined above, thus consists of two parts, which, again apart from small change and principal coins which we shall neglect, directly or indirectly constitute a liability of the central bank. The notes are a direct liability; the bank deposits are an indirect liability since to meet them the banks in their turn hold direct claims on the central bank, viz. its notes and deposits with it.

It is necessary to examine the kind of calls which may be made upon a deposit bank. A depositor may draw a cheque against his account in order to make a payment to someone who keeps an account at the same bank. In this
case the deposit bank does not have to make any payment out; its deposit liability is merely transferred from the name of one depositor to that of another. Alternatively the payment may be made to someone who has his account at another bank. In this case the first mentioned bank, say the Midland, does have to pay money out, but it goes to swell the deposits of the second bank, say, Lloyds. What actually happens is that all the cheques drawn in the course of the day are sent in to a number of clearing houses, where they are cancelled against one another, but if on balance there is a sum of money due from the Midland to Lloyds, the account of the Midland at the Bank of England is debited and the account of Lloyds there is credited with that amount. This operation thus makes no call on the resources of the Bank of England. A certain part of its deposit liability is transferred from one name, that of the Midland, to another, that of Lloyds, and no money has to be paid out by the Bank of England. If the transfer is a big one, both the Midland and Lloyds may have to consider what consequential action they should take, but that is a matter which need not concern us now.

Alternatively the depositor may wish to take the money away in cash. In this case the Midland will have to trench upon its cash reserve. Notes in hand may be paid out; it will probably replenish its till money (reserve of notes) by drawing on its deposit with the Bank of England. This process affects the position both of the Midland Bank and the Bank of England. A deposit bank usually keeps a reserve of cash assets bearing a definite proportion to its deposit liabilities; if £x is subtracted from each, as in the case envisaged, the proportion will be reduced, and it will have to consider measures for replenishing it. In the case of the central bank its liabilities will not have been reduced at all; but a note liability will have been substituted for a deposit liability. Its deposit liability to the deposit bank will have been reduced by the amount of money paid out to replenish the deposit bank's tills; its liability in respect of its outstanding note issue will have been increased by an equal amount. In general it would be right to regard its position as neither strengthened nor weakened, were it not for the special legislation already referred to which usually governs the note issue of a central bank. The margin between the notes in actual circulation and that quantity which it is entitled by law to put into circulation will have been reduced.

Before exploring consequent repercussions, it will be well to examine more closely the original supposition. This was that a depositor may wish to withdraw some or all of his deposit in cash. This is constantly being done. On the other hand notes are continually being paid into banks by persons who wish to convert their notes into credit accounts at their bank. If payments in of this kind exactly balance payments out the position both of the deposit banks and the central bank is left intact.

It is therefore of immediate relevance to consider what the conditions are in which the conversion of deposits into cash are likely to exceed the conversion of cash into deposits. One such condition is a lack of confidence in the solvency of the deposit banks. A depositor may fear that if he leaves his deposit at the bank it will be lost, may distrust all other banking institutions which are at his disposal and prefer to hold his money in the form of cash. Abundant examples of this condition may be cited from the history of the U.S.A. in the last two years. It should be carefully remembered that such a loss of confidence in banking institutions has an effect not only on the suspect banks but on the central bank. The suspect banks may be asked to cash such a volume of deposits that all their cash assets are eaten up; and if they have not a sufficient volume of other assets that are readily saleable without excessive loss they will have to close their doors. The central bank meanwhile is having to honour its deposit liability to the suspect deposit bank by issuing notes. And though this means not a draft upon its own assets, but a conversion of one type of liability into another, yet its position is weakened if its right of note issue is limited. The reserve which it in effect has to meet a
in the demand for cash. Additional cash usually goes into circulation at the time of Christmas shopping or the summer holidays. These seasonal fluctuations are foreseen by the banks and do not present serious difficulty.

The two principal eventualities likely to cause a withdrawal of deposits in the form of cash are thus a loss of confidence in the deposit banks or a rise in the level of prices, incomes and employment. The first of these speaks for itself. The second requires much further probing. It is sometimes supposed that when a rise of prices occurs, it is always due to an increase of cash in circulation. The relation of cause to effect suggested in the foregoing paragraphs is the reverse of that. Analysis of the relation of cause to effect remains an obscure and doubtful branch of philosophy. This obscurity affects and destroys the value of much facile economic theorising. Suffice it to say here that only a very Pickwickian and contorted view of the process of causation could justify the view that a rise of prices is usually the effect and not the cause of an increase of cash in circulation in a community with a developed modern banking system. Changes in the general level of prices, incomes and employment are, however, intimately connected with the working of the monetary system. The conclusion that changes in the volume of circulating cash follow in the wake of changes in price and income levels does not exempt one interested in the monetary system from exploring the causes likely to affect the general level of prices and incomes. It merely drives him to a deeper analysis. In discussing the volume of cash in circulation at this stage, we have merely been observing the rule imposed at the beginning of taking first what is more familiar and proceeding later to what is more fundamental.

7 There is one more kind of way in which a deposit bank may be required to honour its deposit liability. The last case considered was when the community on balance requires more cash in circulation; this is sometimes referred to as an “internal drain.” It may happen, however, the
depositors wish to exchange their deposits not for notes or coins of the realm, but for exportable gold. This is known as an "external drain."

Members of a community frequently have to make payments abroad and conversely have payments abroad due to them. As a rule these payments undergo a process of cancellation in the foreign exchange market. But they can only be so cancelled if they balance. A temporary excess in one direction may be balanced by the offer of short loans in the other. An excess uncovered in this way may, however, occur. When the balance of payments moves against a country, the value of her currency tends to fall in the foreign exchange market. Only a limited fall, however, is consistent with the maintenance of the gold standard. It will be remembered that holders of the national currency are entitled, while the gold standard is maintained, to convert it into gold at its official valuation on demand. As the value of the national currency falls in the foreign exchange market, there comes a point when it would be cheaper to acquire gold in exchange for domestic currency and to incur the expenses of remitting it. The process of remission is generally undertaken by specialised arbitrage dealers, who remit gold, acquire foreign currency in exchange for it, offer this foreign currency in the foreign exchange market, and thus fill the gap between the demand for and the offer of foreign money in the foreign exchange market.

A withdrawal of deposits due to this cause entails a call upon the central bank. The depositor now wishes to acquire not money of the realm but gold. The central bank is under an obligation to honour its liabilities in gold. It may pay out notes in the first instance, but since its notes are redeemable in gold, it is bound to satisfy the requirements of the would-be gold exporter by cashing its notes for gold. The eventuality supposed is not likely to lead, at any rate in the first instance, to a reduction of the amount of cash in circulation; the net effect upon the central bank consequently is that it is required to pay out gold to meet its deposit liabilities. And it has to pay out sufficient gold to cover the "external drain."

The gold available for this purpose is whatever gold it has in addition to that locked up as backing for its note issue. This is its free gold. It must be added that when, as is the case with the Federal Reserve Banks of the U.S.A., the law requires that it shall hold a given percentage of gold against its deposit liabilities, its free gold is what it holds in excess of this. We have seen that it is the practice of the Bank of England to issue from the Issue Department notes against all the gold it has in its vaults. But not all these go into circulation. The excess of notes issued over the notes required by the community for circulating purposes is retained in the Banking Department. The notes in the Banking Department thus represent the amount of gold that is available without special provision, to meet an "external drain." But it is precisely these that are available to meet an "internal drain." The notes in the Banking Department thus represent the resources of the banking community available to meet a net encashment of deposits, whether that encashment is due to the rising needs of the community for currency or to an adverse balance of foreign payments.

The Genesis of Banking Deposits. It is time to concentrate our attention upon banking deposits. We have seen that careful regulations are usually enacted to govern the quantity of notes issued. The other part of the monetary medium consists of banking deposits which circulate from hand to hand by means of cheques. What governs the total quantity of deposits? This is a point on which the plain man is apt to entertain quite erroneous ideas. He conceives on the one hand of notes as being put into circulation at the arbitrary fiat of the issuing authority, and on the other of deposits as being piled up by the industry and thrift of the community itself. There does not appear to him to be any parallel between the act which brings a note into existence and that which brings a deposit into existence.
Yet in fact they are both acts of precisely the same nature. Unless he understands that, he will completely fail to grasp how our banking system operates.

Suppose the case of a community which has only one bank that issues notes and accepts deposits. Suppose a situation to exist in which an individual having acquired a claim on that bank was met by being handed out notes of the bank, consisting of a promise to pay gold on demand, a promise which might be suspended if the community decided to abandon the gold standard. When the claim of the individual is met, the notes come into circulation; he holds them or passes them on and the community uses them as its means of payment. Instead of handing notes to the individual, the bank might suggest that the individual should satisfy himself by taking away a cheque-book—retaining a credit account at the institution. He can then write cheques up to the amount of his credit; the recipients of his cheques can in their turn keep accounts at the bank; as cheques are paid into their accounts, they are enlarged and the recipients in turn can draw upon them. There is little difference, apart from legal technicalities, between the circulation from hand to hand of claims on the bank in the form of notes and the circulation from hand to hand of claims on the bank in the form of cheques. A cheque-book may be thought of as a large note, from which coupons of varying sizes, representing any desired number of pounds, shillings and pence, can be detached by the owner, when he wishes to make a payment, and to which coupons can be stuck on when he receives payment. The size of his note would, then, alter from time to time exactly in the manner that, in actual conditions, his credit account at the bank alters.

It is necessary then to concentrate our attention firmly on the situation, supposed to exist in the first instance, in which an individual is said to acquire a claim on a bank. How does such a situation arise? The situation when it does arise will be the starting point at which either a given quantity of notes begins to circulate or a credit account at the bank begins to circulate. If only we can understand clearly when an individual first acquires a claim on the bank, we shall be in the way to discover what governs the magnitude of the total outstanding sum of bank notes and bank deposits.

First we must eliminate from consideration the mere transference of claims from one individual to another. Mr. Smith may acquire a deposit at the bank through the receipt of a cheque from Mr. Jones. This does not constitute the original inception of the claim on the bank. For what is now Mr. Smith's claim was formerly Mr. Jones'. But whence arose Mr. Jones' claim? Through a cheque received from Mr. Robinson! It is clear that individuals who pay into the bank cheques drawn on the bank by other members of the community do nothing to increase the total quantity of deposits at the bank. No new ball is started to roll by their action.

Secondly we must eliminate certain situations which seem to give rise to a claim on the bank, but which really only constitute one kind of claim for another. An individual may deposit notes at the bank. He thus acquires a credit account there. But he has not acquired a claim on the bank. For he already had that when he held his notes. He has converted a note claim into a deposit claim. It is true that he acquired a claim when he acquired the notes. But if he was merely paid the notes by another member of the community, between whom they have acquired no new claim.

If the individual draws his deposit out in notes, he is still not putting new money into circulation. He is merely substituting one form of circulating medium, a note claim, for another, a deposit claim.

Suppose now that the country is on the gold standard and the bank is obliged to issue notes against gold, or, alternatively, though not obliged to, is always willing to buy gold at the market rate. If an individual brings gold to the bank and deposits it there, this is indeed the inception of a new claim. The individual may arrange for the import of gold from abroad or he may melt down his watch and take the gold to the bank. The bank receives it. The individual
now has a claim on the bank in the form of a deposit or alternatively in the form of notes issued to him. This is a new claim, and not a mere transfer. If the individual draws the gold out again by tendering notes or a cheque drawn on himself, the claim is liquidated and ceases to exist.

Thus claims on the bank are created by the deposit of gold and destroyed by its withdrawal. If we wish to discover how many of all the outstanding claims on the bank had their inception through the deposit of gold, we have merely to look to see how much gold there is in the bank vaults. So much and no more of existing claims were created by the deposit of gold. It is no use objecting that the bank may meanwhile have used the gold for other purposes. For when a bank uses gold, i.e. pays it out to someone, it necessarily kills a claim on itself thereby. It doesn’t give gold away. If it uses gold, it destroys a claim. Therefore the amount of gold retained is exactly equal to the number of claims that have been created through the deposit of gold less the number of claims (originating in this or some other way) that have been met and therefore annihilated through its withdrawal. The quantity of gold represents the net amount of claims created by the paying in of gold.

But if you look at any bank, you will find that the claims upon it usually far exceed the quantity of gold in its vault. How were these additional claims created? We have found one way in which new claims may be created, but this does not account for the whole of the outstanding claims, but only for a small part of them. Nor is it of any use reverting to the other type of explanation—individuals may have paid in cheques or notes. That eventuality has already been considered and shown to be inadequate to explain the inception of the claims.

The other principal and by far the most important way in which claims originate is by bank loans. If the bank lends me £100, I can draw out £100 of notes and put them into circulation or I can draw a cheque for £100 and so increase someone else’s account at the bank by that amount.

Claims on banks have their most important origin in bank loans. There is a temptation to say that the bank can only lend what has been deposited with it. Such a notion is a most fertile source of delusions. It is true that if I desire to take my loan away in the form of gold, the bank can only satisfy me if someone has previously deposited gold with it. But if I am satisfied with notes or a cheque-book the position is very different. The bank by making me the loan has created new circulating medium. The circulating medium consists of claims on the bank. By making the loan the bank has added to the number of existing claims outstanding. If I withdraw the loan in gold for export or false teeth, then it is true that no new money will have come into existence. The creation of the new claim is precisely offset by the cancellation of a claim which the withdrawal of gold always involves. But so long as the credit account or notes generated by my borrowing continue to circulate, so much extra circulating medium remains outstanding. The repayment of the loan entails an opposite result. Part of the outstanding circulating medium is cancelled.

It now appears why in computing the quantity of his money, the individual was asked not to subtract his debit account at the bank. When a loan is made a twofold liability comes into existence; there is the liability of the bank to honour the cheque of the borrower for the amount agreed on; there is the ultimate liability of the borrower to repay the bank. This ultimate liability may take the form of an overdraft. But if on computing the quantity of circulating medium outstanding all overdrafts and other forms of outstanding bank lending were subtracted, little would be left. For by far the greater part of the circulating medium had its inception in bank loans and would disappear if the loans were withdrawn. Loans are, it is true, continually being repaid, but simultaneously new loans are issued, so that at any point of time there is a quantity of bank loans outstanding almost as great as the total of the circulating medium.

A bank, like other concerns, has business expenses, makes
charges, interest and other, for its services, and hopes to declare a profit and distribute dividends. The outgoings and intakings in these respects should balance. When a bank makes charges for its services, these decrease the claims upon it and when it incurs expenses, or distributes dividends, these increase the claims. If in any period there is not a perfect balance, the outstanding circulating medium will be decreased or increased accordingly.

What has been said about the generation and cancellation of means of payment by a supposed single bank, applies in a modern community to the banking system as a whole. The quantity of money is increased by the import of gold or the extension of bank loans and decreased by the opposite processes. We shall have to see how the argument is affected when there is more than one deposit bank and how each is related to the central bank.

It has been assumed that the note issue consists of bank notes. There may, however, be a government issue. Theoretically the size of a government issue is quite arbitrary; in practice it is often not so. During the war, for instance, the British note issue was undertaken by the Treasury. A great increase in the deposit section of the circulation was in progress through the extension of bank loans. The increased cash requirements of the public were consequential on this. The government undertook to provide the banks with as much cash in the form of currency as they needed. Consequently precisely the same quantity of notes were projected into circulation as if the banks had had the right of note issue themselves.

The relation of a government note issue to government borrowing should be observed. Normally a government meets its expenses by taxation; in special circumstances public loans may be raised. If these loans are subscribed to by the general body of the citizens with funds released by a contraction of their normal expenditure, the loans have no effect on the quantity of circulating medium. But if the government borrows some of the money from the banks, or if the money subscribed by the public is lent to them by the banks for that purpose against suitable collateral, which may include the government stock itself, then the government borrowing involves an increase of the circulating medium. It is precisely as if any individual had prevailed on the banks to make some large loans to him. There is an increase in the quantity of outstanding claims on the banks. Government borrowing of this kind we may call for convenience inflationary.

Inflationary borrowing increases the circulating medium whether the government takes to itself the right of note issue or not. The essential cause contributing to an increase of money is a deficit not covered by loans subscribed to by the public and financed out of their genuine savings. If there is inflation involving a rise of prices, of pay-rolls, etc., an increase of cash will be required for reasons explained earlier in this chapter. Whether this is met by an increase of bank notes or an increased government note issue is a technical detail of little importance. If there is a government issue, the government borrowing from the banks will be pro tanto reduced. In this case the total inflation will amount to \( \mathcal{L}x \) borrowed directly or indirectly from the banks by the government plus \( \mathcal{L}y \) of note issue. If there is a bank issue, the inflation will consist of \( \mathcal{L} \) \((x + y)\) borrowed directly or indirectly from the bank by the government, and the claims with which these loans provide the government will be met to the extent of \( \mathcal{L}x \) by credit accounts at the banks, which will no doubt be concentrated at first in the government's bank and so pass into circulation, and to the extent of \( \mathcal{L}y \) by bank notes.

**Bank Loans and Cash.** The banking system performs two functions which are perfectly distinct in principle but closely interrelated in practice. On the one hand it provides, as we have already seen, the effective circulating medium for the community and on the other it is a channel by which the savings which people do not wish to lock up in long-term investments are made available for industry and trade. Since every time the banking system makes a loan
it necessarily adds an equivalent amount to the circulating medium, the interconnexion of the two functions is evident.

It is not necessary here to describe the various modes in which deposit banks commonly lend money, as that is the topic of the following chapter. We shall confine ourselves to those points which are necessary to the story of how the central bank exerts its control. The following four main types of loan have their counterpart in most countries.

(i) The banks lend money at call or short notice. This is usually the cheapest kind of money that can be had; the low interest rate compensates for the inconvenience of being subject to a sudden demand for repayment. In New York the market for call money consists of the stockbrokers, who deal for their clients on a margin in the Stock Exchange and who require ample funds for that purpose owing to the system of daily settlements which prevails there. In London the money goes to the Discount Houses who specialise in making advances to merchants on bills of exchange, and make their profit on the difference between the call rate which they have to pay to the banks and the ruling rate of discount in the market, which is usually somewhat higher.

(ii) Banks lend money by discounting first-class bills of exchange themselves. They also invest largely in Treasury Bills, which are three-monthly obligations of the government.

(iii) The largest block of lending by English banks consists of their advances to customers against the deposit of collateral security. These advances usually take the convenient form of overdrafts, interest being paid on that part of the loan which is actually used. A customer may get an overdraft facility of £1,000, but he only pays interest at any time on the amount of his overdraft outstanding, £100, £500, or whatever it may be. The interest charged on these advances is higher than the market rate for bills since this kind of loan is not self-liquidating and is always in danger of becoming frozen.

(iv) There is a fourth type of loan which the banks habitually make but which is on a somewhat different footing from the other three. The banks make investments in ordinary marketable securities. This kind of lending is precisely that which members of the public adopt when they wish to dispose of their savings. It is important to observe that such investments, when made by the banks, have precisely the same effect on the volume of circulating medium as loans of the other types. If the banks purchase securities they add to the amount of means of payment in circulation; if they sell securities, they cancel some of those means. This method of lending is undertaken entirely at the initiative of the banks and is a useful expedient when the banks wish to add to the circulating medium and ordinary trade borrowing is slack.

When the banking system as a whole extends its loans, it thereby adds to its deposits. Loans create deposits. To put it less accurately but more popularly, the loans "come back" to it in the form of extra deposits. The volume of deposits is governed, in the first instance at any rate, not by the thrift and industry of individual members of the community, but by the loan policy of the banks. What is it, then, that checks the banks from making an unlimited quantity of loans?

First it is necessary to consider this from the point of view of an individual bank. Though the banking system as a whole gets its loans back as deposits, this is not true of an individual bank. If all the banks simultaneously make an increase of loans of 1 per cent, there is some probability that the deposits of each will rise by 1 per cent. But if a particular bank extends its loans by £1,000, there is no probability that it will receive an extra deposit of £1,000. The new circulating medium created by its act will circulate round among all members of the community; it will be dissipated and its parts lodged successively at all the various banks. Thus if the banks are to expand, they must expand in step. Otherwise the more adventurous banks will find their cash depleted; when cheques are cleared the balance of payments will be against them and their credit accounts at the Bank of England or their till money (notes
between their cash holding and the volume of their deposits. They feel themselves at liberty to expand loans if and only if their cash holding stands at a figure which exceeds this ratio. Their cash holding includes both their currency in hand and their credit account at the central bank. In the U.S.A. there is a minimum ratio (or rather multiplicity of ratios for various classes of banks and deposits) enforced by law. In normal times the banks treat this as a maximum ratio also. In England the deposit banks have established a ratio which they regard as safe; the average ratio for the principal banks has recently remained constant at about 10.5 per cent.\(^1\)

If for any reason there is an increase of cash at the disposal of the banks collectively, this will lead to an expansion of loans in one or more of the four ways enumerated on p. 136. Suppose that the Midland Bank finds that its cash holding and deposits are up by £1 million, while that of the other banks remains the same. The Midland Bank, finding that its cash exceeds the required ratio by about £900,000, will lend out the money; some of this, say £100,000, will “come back” to it as extra deposits, most of it, say £800,000, will go as extra deposits to the other banks. £200,000 of its extra cash will be retained by the Midland, £800,000 will be transferred to the other banks. They in their turn will find both their cash and deposits up by £800,000. But since this makes their ratios more favourable, they too will be disposed to lend. Provided that the new deposits are not drawn out as cash by the public, the banking system as a whole will be able to lend approximately £9 million. They will collectively be holding £1 million more cash and (initially) £1 million more deposits than before; the expansion of loans will have led to a further increase of deposits by £9 million. Thus while retaining their old ratio of cash to deposits, they will have been able to increase loans by about £9 million.

\(^1\) This figure is taken from their monthly statements, which are not representative of their average position during the month. It appears probable that their actual average ratio is somewhat more than 1 per cent below this (cp. Macmillan Report, p. 30).
This may be illustrated by recent figures. Between February 1932 and February 1933 the cash of the London clearing banks rose by £31.2 millions. At the same time their loans rose by approximately £207 million and their deposits by £298 million. Their ratio rose from 10.4 per cent to 10.6 per cent (i.e. remained roughly constant). These actual figures display with extraordinary precision the relations described in the last paragraphs. If the banks had not extended loans, their deposits would have risen by no more than the increase of cash (£31.2 millions). The upshot of the whole thing is that in February 1933 the public had credit accounts at the banks exceeding those of a year earlier by some £300 million. The banking system had produced a great expansion in their circulating medium.

We now come to the central and vital point in this whole discussion. What caused the increase of cash? What governs the amount of cash at the disposal of the deposit banks? The answer is the central bank. The central bank regulates by its operations the quantity of cash available for the deposit banks and so indirectly the quantity of circulating medium in the community.

Control by the Central Bank. How does it do this? By the use of the printing press? No. It might print notes, but mere printing would not put them into circulation. It habitually does print many more notes than ever go into circulation. The means by which it increases cash is its loan policy. In the period from February 1932 to February 1933 it increased its loans by £32 million.

Of the types of bank-lending described above, the Bank of England engages chiefly in the fourth. It makes investments in marketable securities. The other three types usually involve some knowledge of the special circumstances of borrowers. It is not the business of the central bank to go into these, but to exercise an impersonal control over the credit situation as a whole. The Bank of England has, indeed, taken some interest, through subsidiary organisations, in recent schemes of industrial reconstruction.

But that is not its primary task. It must be added, however, that in a crisis or panic, when it becomes difficult to borrow on the best security, it is the duty of the central bank to act as "lender of the last resort," and make advances on all sound types of security.

The relation between the loan policy of the central bank and the cash at the disposal of the deposit banks is easy to explain. If the central bank purchases securities worth £5 million, i.e. extends its lending by that amount, the sellers of the securities acquire claims on the central bank worth £5 million. These they pay into their own banks. The deposit banks thus find their deposits rise by £5 million, and at the same time their credit accounts at the central bank (which constitute an important part of their cash) rise by £5 million. If the central bank sells securities, the credit accounts of the deposit banks with it undergo a corresponding diminution.

The principle already applied to the banking system as a whole that loans create deposits, applies to the central bank in particular. But in the case of the central bank, the creation of deposits is twofold: On the one hand the public at large acquires extra deposits at the deposit banks; on the other the deposit banks acquire extra deposits at the central bank. That is the consequence of their holding their reserve in the form of a banking account at the central bank. Thus the central bank, when it lends, creates additional deposits with itself. And these deposits count as cash for the other banks. The extension of loans by the central bank thus increases the cash as well as the deposits of the other banks, and puts them in a position, consistently with the maintenance of a given ratio, say 10 per cent of cash to deposits, to expand their loans by approximately nine times as much.

The loan policy of the central bank is not the sole force affecting the quantity of money in the country. This is also affected by the balance of foreign payments. If gold is flowing in, and is not side-tracked into non-monetary use (for watches, etc.) it goes into the banks and creates new deposits. This has already been explained in a general way in an
earlier part of this chapter. At that stage we did not distinguish between the central bank and the other banks.

If a gold importer sells £5 million of gold to the Bank of England, he acquires a claim on that institution which he can pay into his own bank. What is the effect of this operation? The Bank of England acquires £5 million of gold and a new deposit liability of £5 million. The importer’s bank acquires an addition to its credit account at the Bank of England of £5 million and a new deposit liability of £5 million. If the Bank of England takes no further action, the deposit banks can collectively expand their loans by £45 million. The net effect of the import of gold is precisely the same as if the Bank of England had purchased securities worth £5 million.

It should be noticed in passing that the importation of £5 million does not have much effect on the total quantity of money in the country unless the deposit banks behave appropriately. The total banking deposits of Great Britain are about £2,600 million. The import of £5 million in and by itself merely raises deposits by £5 million. It is only if the deposit banks take advantage of the situation and expand their loans by £45 million that the import of gold has an appreciable effect. The operation of the gold standard works through the loan policy of the banking system. But the deposit banks can be counted on to take advantage of the situation. Finding their ratio of cash to deposits up, they will tend to increase loans until their conventional ratio is restored.

What will be the attitude of the Bank of England to this import of gold? We must distinguish between technicalities and essential matters. When gold comes into the Bank of England, it is its custom to pay it into the Issue Department and issue notes against it. Thus the assets of the Issue Department will be up by £5 million gold and its note liability will be up by £5 million. Meanwhile the new notes are transferred to the Banking Department. Its assets will be up by £5 million notes and its liabilities will be up by £5 million owing to the new deposit liability to the importer’s bank (vide supra).

The essence of the matter is—and this would be true of any central bank—that its total liabilities are up by £5 million and its assets are up by £5 million in the form of an extra gold reserve. (The liabilities of the Bank of England seem to be up by £10 million; but this is due to the cross entry owing to the holding by the Banking Department of notes issued by the Issue Department.) The central bank, like the other banks, holds part of its reserve in cash (gold, in its case) and part in the form of the securities on which it has made loans, including the securities it has bought outright (vide supra). The increase of £5 million on both sides of the account, involving an improvement in its ratio of gold to total liabilities.

Will the Bank of England at once set about restoring its previous ratio of cash to liabilities, in the style of the deposit banks? It may do so. Suppose its previous ratio was one third.1 If the Bank of England seeks to restore the ratio to its former level, it must make £10 million of additional loans. In the upshot, its assets will be up £15 million, £5 million in respect of the new gold and £10 million in respect of the new loans, and its deposits will be up £15 million, the former ratio of gold to deposits (1:3) being preserved.

If the Bank of England takes this action, the deposit banks will find their cash up not merely by £5 million, but by £15 million. If they come to heel in the ordinary way

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1 I refer here to the ratio of gold to total net liabilities; actually owing to the legal system of a maximum fixed fiduciary issue and the automatic manner in which the Issue Department is worked, all gold being transferred to it and the maximum of notes allowed by law being issued, attention is often concentrated on the ratio between the cash in the Banking Department (= the free reserve available to encash deposit claims), and the deposit liabilities of the Banking Department; this ratio is known as “the proportion”; in this argument I use the word “ratio” in the sense of the relation of gold to note and deposit liabilities together; this is known as the “reserve ratio”; it is more convenient to consider this, since what is said of it applies also to central banks which work under a different legal system of note issue.
and maintain their ratio constant, they will lend not merely £45 million (approximately), but three times this, viz. £135 million. The total circulating medium of the country will then be up by £150 million. It will have been increased precisely in proportion to the increase of the gold in the Bank of England.

Reference is sometimes made to the "automatic" working of the gold standard, or the "rules of the game." What presumably is meant when such phrases are used is that the central bank should behave in the way outlined above and make the quantity of circulating medium in the country vary in precise proportion to its gold holding. Such a system would have the beauty of simplicity and ready intelligibility. It does not appear, however, that it was ever put into operation; nor would it be desirable to do so.

When gold is imported and the central bank finds that its ratio of gold rises, it may do one of three things. (i) It may apply the so-called rule of the game, extend credit to restore its old ratio and thus cause the total quantity of circulating medium in the country to rise in precise proportion to the rise in its own stock of gold. (ii) It may be purely passive, neither expanding nor withdrawing loans. In this case the circulating medium will rise by a moderate amount (£45 million in the above example), but not in full proportion to the increased gold stock. (iii) It may adopt a reverse policy and sell £5 million of securities. If it does this the cash basis of the joint stock banks will be precisely the same as before. What they gain by the new deposit of gold they will lose by the contraction of credit by the central bank. The central bank sells £5 million of securities; the purchasers of these will write cheques on their own banks adding up to that amount; the credit accounts of the deposit banks at the Bank of England will be reduced by £5 million and this will precisely offset the rise in their accounts entailed by the influx of gold. If the central bank is concerned to preserve the quantity of circulating medium at a stable level rather than to make it vary with changes in the country's gold holding, it will adopt such a reverse policy.

In the post-war period of the gold standard in this country (1925–31) there were considerable influxes and effluxes of gold. When gold came in, the Bank of England had a shrewd suspicion that it would presently depart again. It did not want monetary conditions in the country to be continually disturbed by these changes. Consequently when gold came in, it offset this by selling securities, and when gold left, it offset the exodus by buying securities. This was known as a neutralising policy.

The Trammels of the Central Bank. The central bank has to take a fairly long view. It has two concerns. In the first place there is the effect of changes in the quantity of circulating medium on the state of the country’s industry and trade, and secondly there is the effect on the foreign balance of payments. In the matter of its second concern, if the country is on a gold standard and the balance of foreign payments becomes adverse, the central bank will have to cover the excess of payments out over payments in by selling gold. It is of the essence of the gold standard that nationals should be able to convert their money into gold at par; if the price of foreign currencies rises, owing to the adverse balance of payments, to the point at which it becomes cheaper to export gold, the nationals, in particular those specialising in arbitrage (vide supra), will desire to get gold in exchange for the circulating medium of the country in order to export it. Such a situation engenders the "external" drain already referred to. This is a vital matter for the central bank. It must be able to cover the adverse balance in gold, if its solvency is to be maintained. Thus it will be deeply concerned to secure that the foreign balance of payments is not excessively adverse. It will have to adapt its monetary policy to this end. If the country is not on the gold standard an adverse balance of payments will make its currency tend to fall in the foreign exchange market. This is also a matter of some interest,
though in the absence of a gold standard, of less vital interest to the central bank. It will keep an eye on the effect of its monetary policy on the course of the foreign exchanges.

In the matter of the internal situation there are two considerations. If an expansion of deposits occurs and this is associated with improving trade and, possibly, rising prices, the community may require more currency in circulation. The increased demand for currency will have to be met by the central bank. This is the "internal drain." Ideally, if the central bank feels itself able to allow an expansion of loans, it should not mind if the liabilities so generated take the form wholly of a deposit liability or partly of a note liability. Actually it works in severer legal trammels with regard to its note issue, and it may feel impeded in its desire to expand loans by the fact that the demand for currency consequent on this would exhaust its legal powers to issue currency, and so place it in a position in which it was unable to meet its deposit liabilities by notes. Still worse would be the position if it had so enlarged the deposit banks' basis of cash by its loan policy as to lead them generally into unsound channels of lending, jeopardising their solvency, and thus cause the public, out of lack of confidence, to turn their deposits into notes. Such action affects, as we have already seen, not only the suspect deposit banks, but the central bank also. It is the central bank which has to provide the currency. The suspect banks will draw out their deposits with the central bank in currency.

The second consideration with regard to the internal situation goes deeper. It is the business of the central bank to see that the monetary system of the country, in the broad sense not of currency merely, but of total circulating medium, is in such a condition as to enable the industry and trade of the country to go forward smoothly. It might appear that this should be by far the most important consideration governing the actions of the central bank. It may, however, be hindered in the undivided pursuit of this end, on the one hand by considerations relating to the foreign balance of payments already mentioned and on the other by the legal restrictions on its note issue already mentioned. The Federal Reserve Banks had in the period 1922–29 a gold reserve, which, though not out of proportion to the huge economic structure of the country, was large in relation to legal requirements. They thus had an ample margin to spare to meet either a foreign drain of gold or an internal drain of currency. Consequently they were able to concentrate their attention on providing a monetary system that should satisfy internal needs. This was an ideal situation. The Banks used the opportunity to make the experiment of pursuing a policy designed to secure stability. With the monetary system so managed the country enjoyed an unprecedented degree of prosperity. The situation has now sadly changed. It is arguable that subsequent calamities are due to the fact that after the Stock Exchange crash of October 1929, the Federal Reserve authorities lost their nerve and did not maintain their previous record. The guiding spirit, Governor Strong of the Federal Reserve Bank of New York, had departed. It is also arguable that the management undertaken in the good years was not free from criticism, that some lessons were not yet learnt. Into this speculative domain we must not enter now.

So far we have been concerned with the mechanical relations of the various parts of the monetary system. We have seen that the central bank controls through its policy and in co-operation with the deposit banks the total quantity of circulating medium. We have seen that it usually works under legal restrictions with regard to its note issue and this tends to check an upward expansion of deposits. We have seen that it must have regard to the foreign balance of payments. The picture remains incomplete. We have still to consider how these various movements in the monetary sphere and the course of trade and prices act and react on each other and to determine what policy it is possible and desirable that the central bank should pursue.
The Central Bank and Interest Rates. Let us return to the balance of foreign payments. Space forbids a detailed examination of this topic. Broadly foreign payments fall into two main categories, those on current account and those on capital account. The former consist of payments in respect of visible trade, the import and export of commodities, of invisible services such as shipping, mercantile services, insurance, brokerage, etc., and the service of foreign investments. Payments on capital account consist of loans and the repayments of loans.

Let us first suppose a gold standard to be in operation. Let us suppose that after a period in which payments have balanced, an adverse factor begins to operate. This may be merely seasonal or transitional, owing to a temporary excess of imports over exports or some such cause, or it may be more enduring and be due to the loss of a foreign market or the failure of foreign investments to earn their former rate of profits. It has already been explained that the balance of external payments is a matter of vital concern to the central bank. What means have they to secure the position?

The central bank has a double-edged weapon having on the one hand an immediate and temporary effect and on the other a deeper and more permanent effect. This operates through its control over interest rates. In the situation envisaged the central bank will produce a rise of interest rates. This involves a contraction of bank loans. The technicalities of the process may be explained by reference first to the English and then to the American banking system.

In England the official rate at which the Bank of England discounts bills of exchange is usually above the open market rate. Persons who wish to discount bills consequently go to the open market to do so and not to the Bank of England. There is an exception in the case of favoured clients of the Bank, for whom the Bank is willing to discount below its official rate. When the Bank wishes to produce a rise in the market rate it sells some of its securities. This causes a restriction of the cash of the deposit banks in the manner already explained. They, wishing to maintain their former ratio of cash to deposits, proceed to cut their loans. Their first line of defence is their money lent at call or short notice, which they draw in. This money is used by the Discount Houses to discount bills of exchange. The Discount Houses may be able to meet the call out of the proceeds realised by maturing bills. Probably they will also have to go elsewhere for part of the money. Where can they go? By hypothesis all the deposit banks are tending to restrict rather than expand their money lent at call. In this case the Discount Houses will have to go to the institution, which serves as “lender of last resort,” the Bank of England itself. They will go to the Bank of England and re-discount some of the bills which they have on hand. But they will have to pay the Bank of England rate, and that is higher than the rate at which they themselves have been discounting bills. They will thus incur a loss on the bills which they have to re-discount. They will therefore be extremely anxious to work free of the Bank of England, and this they can only do by reducing the volume of their own discounts. The demand for loans by way of discount will then exceed the supply and the market rate will tend to rise.

The Bank of England will have achieved its object. If there is initially a considerable gap between the market rate and the Bank rate, and the rise in the market rate which the Bank desires to secure is small, it will content itself by selling securities. If the gap is small or the rise required large, the Bank will also raise its own official rate. A rise in the Bank Rate will then occur, a phenomenon well known to the public through the daily Press. The deposit banks raise their call rates in unison. The final upshot will be a rise in market rates and a reduction in the circulating medium of the country. The deposit banks which have had their cash basis reduced, will probably not confine themselves to calling in call money. They may also reduce their holding of Treasury bills and other bills, their investments, and ultimately their advances against collateral, the rate
charged on which, namely 1 per cent above Bank Rate (but subject normally to a minimum of 5 per cent), will also be raised in unison with the Bank Rate. The control exercised by the Bank of England is satisfactorily complete.

In the United States the mechanism is somewhat different. There the deposit banks which are "members" of the Federal Reserve system (and they represent the greater part of the deposit banks if they are weighted according to their resources), are normally in the debt of the Federal Reserve Banks. (The twelve Federal Reserve Banks jointly constitute the central banking system and correspond to our Bank of England.) These member banks are required by law to hold a specified reserve against their deposit liabilities in the form of deposits with the Federal Reserve Banks. If these deposits tend to fall short of the required amount, they replenish them by borrowing from the Federal Reserve Banks through re-discounting bills with them. The Federal Reserve Banks provide credit in two ways, first by re-discounting bills for their member banks and secondly by their open market operations, the purchase and sale of securities.¹ If the Federal Reserve Banks desire to raise market rates, they sell securities. This, as in the case of England, has the effect of reducing the deposits of the member banks with them. Since the member banks do not usually have deposits with the Federal Reserve Banks in excess of legal requirements,² they are forced to make good the reduction in these deposits by additional re-discounting. This they do at the official Federal Reserve re-discount rate, which may meanwhile have been raised. The Federal Reserve re-discount rate is, it is true, normally below the rate at which member banks discount for their clients. This is due to the different nature of the paper so discounted in the American market and to differences in its structure which space forbids me to explain here. The member banks thus do not actually incur a loss when they have to re-discount additional paper with the Federal Reserve Banks. But their indebtedness to the central banking system will have been increased; they will be anxious, and, if they are not anxious, pressure will be brought to bear on them by the Federal Reserve Banks, to decrease this indebtedness; and, in order to be able to do so, they will tend to reduce their own loans of various kinds. Thus though the control exercised by the Federal Reserve Banks is less immediate and imperious than that of the Bank of England, it is similar in kind.

Raising interest rates has a short-period and a long-period effect. The immediate effect is to render the country a less eligible centre to borrow from and a more eligible place to lend to. This has a direct effect on the balance of foreign payments on short-term capital account of the country in which rates are raised. The balance is made more favourable. The tendency towards an adverse balance is for the time counteracted.

Interest policy has also a more far-reaching effect. The rate at which the "real" capital of the country is increased, whether in the form of fixed equipment, other forms of aids to production or stocks of raw materials and goods in process, is partly determined by the rates of interest. Low rates tend to stimulate an increase, high rates to discourage it. Rapid accelerations in the rate of capital increase do, indeed, often occur in the face of high interest rates in times of boom, while at other times low interest rates do not prevent stagnation. But when a change of rate is introduced into a given situation, a rise tends to retard and a fall to increase the pace at which additions to real capital are made.

It is necessary to trace out the further consequences of this. Suppose a fall in the rates to occur, encouraging additions to real capital. New employment will be given. Income so earned will be expended partly on the importation

¹ The emergency legislation of 1932 and 1933 has also empowered the Federal Reserve system to re-discount directly for the public.
² The conditions of 1932 when the Federal Reserve Banks were attempting to produce a great expansion of credit were exceptional in this respect.
of goods from abroad, partly on purchases of home-made goods. The latter class of expenditure will stimulate the output of home-made goods, if this is practicable; there will be a further addition to employment consequent upon this, and this provides fresh income which will be expended in a similar manner. The net effect will be a new debit account in the balance of foreign payments, due to additional imports and possibly also to additional foreign investments by those in receipt of the new incomes, increased employment at home and a tendency for prices at home to rise.

Opposite consequences would ensue on a rise of interest rates. The rate of addition to real capital will slow down, unemployment will occur at first in the constructional trades and then be more widely diffused. The income and purchasing power of the whole community will be restricted and purchases of foreign goods and securities will be cut down. This is the more far-reaching effect of a central banking policy of high interest rates. It is the well-known process of Deflation. The foreign balance of payments is restored, because imports and foreign investments, which both appear as debits in the foreign balance, are cut down. The prices of home-made goods tend to fall; the output of them is reduced. The severer the deflation, the more widespread is the unemployment and the greater is the reduction of income.

Maintaining the Gold Standard. Under the gold standard, the condition of the credit account in the foreign balance of payments must be the primary factor governing the policy of the central bank. This is the second concern of the central bank, referred to on p. 145. It cannot allow a serious adverse balance to be generated. The favourable position of the Federal Reserve Banks in the period before 1929, which has already been referred to, was exceptional. The control which the central bank exerts through interest rates is simple and salutary if it can be confined to its short-period effect of adjusting the flow of foreign short-term loans. It is an excellent expedient for evening out temporary oscillations in the balance of payments. If, however, there is a substantial reduction of payments due from foreigners, destined to be permanent, as happens, for instance, when there is a great fall of world prices, the high interest policy has to be allowed to have its more far-reaching effect of producing severe depression at home. This is the inevitable corollary of the gold standard.

If the community were entirely isolated, what would be the ideal policy of the central bank? It should maintain such interest rates (and such a consequential expansion of loans) as would encourage additions to real capital to proceed at a rate that kept in line with the collective saving of the community. Capital production can only be pushed ahead more rapidly than this, by the imposition of forced saving on the community through rising prices. If production already bears a reasonable relation to the capacity of the country, so that employment is good, rising prices lead to excessive profit and conditions become "inflationary." If on the other hand capital production fails to keep pace with the saving of the community, insufficient money will be to hand to buy consumable goods, prices will tend to fall, their output will be restricted and unemployment will grow apace. This is the condition of deflation. It should be the business of the central bank to steer between these two extremes.

The exigencies of the gold standard are likely to debar it from such a policy. A favourable balance of foreign payments does not indeed compel inflation, since the central bank may allow gold to come in and its reserves to accumulate. It may incur the wrath of other countries for doing so, but it can legitimately plead that it is its duty not to produce an inflationary expansion of credit at home. But in face of an adverse balance, it must deflate, in order to maintain solvency. It must restore the balance. The consequent restriction entails misery and needless waste.

Deflation restores the balance by reducing the purchasing power of the community and so bringing about a reduction
in the debit side of the foreign account to correspond with
the reduction in the credit side postulated as the disturbing
cause. Might not the proper remedy be, not to reduce the
debit side but somehow to take arms against the reduction
in the credit side and restore it? This might be done if
costs at home could be reduced and our volume of exports
thereby raised. Any attempt to reduce costs at home meets
with strong resistance, and if successful is likely to involve
grave injustice between particular sectional interests. If
the reduction in costs required was great, it could only be
achieved with fairness, if all contracts, bargains and cus-
tomary rates of pay, expressed in terms of money, could be
simultaneously revised in a downward direction. Such a
solution must be ruled out as impracticable.

We have seen that our system provides a perfectly
adequate remedy for a transient reduction in the credit
items on foreign account. A single adverse factor operating
against the credit side even if it be permanent is likely to
be offset by other favourable factors, or even, if not, will
not produce severe dislocation. The disturbances which are
large and lasting enough to require severe internal deflation
as a remedy usually spring from serious recessions in the
outer world associated with a fall of world prices. These
affect the credit balance in two ways. They reduce the
value of our exports and the volume that can profitably
be marketed at the new level of prices, and they reduce the
income from foreign investments.

Beyond the Gold Standard. Two remedies seem pos-
sible, a national one and an international one. The national
remedy is to abandon the gold standard, which links the
national monetary system with that of the world. A fall in
world prices can be countered by making the value of
national money in terms of gold fall pari passu, thus
maintaining its value in terms of goods at its old level,
and keeping the relation of costs of production at home
to world prices the same as it was before. Such a
system would at least mitigate the repercussion of a world
depression in the particular country which adopted this
policy.

The effects of such a policy were visible in Great Britain
after the abandonment of the gold standard in 1931. She
was sheltered from the further deterioration in conditions
which occurred abroad in the following year. The status
quo was preserved; this unfortunately was already very
bad. No serious attempt was made to regain lost ground. To
do this, it would have been necessary to counteract the
effects of the previous deflation, re-stimulate capital output
and so revive the volume of incomes and employment
generally.

By the spring of 1932 a régime of low interest rates was
indeed achieved. This, however, failed to have the effect
of re-stimulating capital output that might have been
expected of it. The recession had already gone too far.
Consumption had fallen to such a low level that the capital
equipment of the country far exceeded requirements, and
low interest rates by themselves did not provide a sufficient
motive to extend it. In default of trade borrowers, the
banking system extended loans by the method which is
open to it on its own initiative, the purchase of securities.
The circulating medium of the country was thus consid-
erably expanded in the course of 1932. Figures were given
above. This extension of loans was not reflected in an
increased capital output. Sellers of securities to the banking
system did not use the money so acquired to embark on
new enterprise; it was held in idleness by the public, in the
absence of profitable forms of investment. There was no
incentive to use it. Capital equipment was so redundant
that much additional outlay on capital production could not
be expected until some revival of consumers’ demand oc-
curred. But the normal channel through which consumers’
demand rises after a depression is through an extension of
capital production, the incomes of those engaged upon it
being used in part at least to buy consumers’ goods. When
consumption has fallen so low that low interest rates no
longer stimulate capital output, it seems that some other method is required to revive output. The most obvious one is unbalanced government expenditure.\footnote{This includes public works financed by loan and unbalanced expenditure on current account financed by inflation. For a definition of this see p. 135. Inflation deliberately undertaken to relieve a depression has recently been christened \textit{Reflation}.}

What can be done by a nation singly by abandoning the gold standard can be done more efficiently by international co-operation without abandonment of the gold standard. The obstacle to individual expansion by a country on the gold standard is the adverse balance of payments generated when the nationals acquire an increase of purchasing power, but foreigners do not. If expansion could be arranged to occur in all countries simultaneously, the increased purchasing power of each would be accompanied by a revival in the export markets of each. If international co-operation could be achieved, a common world standard such as the gold standard, at least in some modified form, would no longer be incompatible with the pursuance by each country of a banking policy adapted to her needs.

It has been suggested that this might best be achieved by the establishment of an international central bank. The Bank for International Settlements, set up in consequence of the Young Plan for German Reparations (1929) to facilitate the transfer of Reparation payments, might be adapted for this purpose. It would stand in the same relation to national central banks as they do to the deposit banks. By the purchase of securities it could increase the cash of the national central banks and enable them each and all to pursue a policy of expansion. Just as the Midland Bank, when it finds its cash at the Bank of England up, can increase its loans to clients, so the central banks of particular countries, when they find their deposit at the International Bank up, could expand loans in their national markets. This is essentially similar to the recent proposal of Mr. Keynes for an International Note issue. For the system to work properly, each central bank should feel itself more or less obliged to expand credit in response to an enlargement of its cash reserve, just as the deposit banks now regard themselves as obliged to expand loans in response to an increase of theirs. The International Note issue would not produce a revival, unless it led to an increase of capital output in all countries. Many countries might find themselves sharing the recent experience of England, that the achievement of low interest rates did not by itself stimulate new capital output. It would in this case be the duty of every government itself to intervene and re-stimulate demand by unbalanced government expenditure. The strenuous joint and simultaneous pursuit by each country of a policy of expansion, by increasing capital output or unbalanced government expenditure, would suffice; the mechanism of an International Bank or an International Note issue is not indispensable; but it would give definite form and precision to an agreement for international co-operation.

International co-operation in pursuit of a revival of demand would be beneficial not only because it would bring prosperity over a wider field than isolated national effort, but also because it would make each national effort easier. A country which seeks prosperity by divorcing itself from the common monetary system and allowing its exchange to depreciate, is exposed to special dangers. In the absence of certain knowledge where the new rate of exchange is likely to settle down, there may be considerable unsteadiness in the exchange rates, with consequent inconvenience to trade, and there may be adverse speculative operations leading to undue depreciation. The public may take fright and fly from the currency. The authorities in the fear of such eventualities may hesitate to push forward with a policy of revival. With genuine international cooperation these difficulties may be overcome. Two further points call for notice. (i) We have seen that equilibrium of the internal monetary system is attained if the banking system regulates interest rates in such a way that capital construction is encouraged enough and no
more than enough to keep pace with the current rate at which the community collectively wishes to save. For various reasons connected with the technique of industry, the stage in the country's industrial progress and the wealth and thrift of her citizens, this ideal scale of interest rates may be different in different countries. To secure stability in the system it might be desirable for the English short-term money rate to be, say, 2 per cent, while in the U.S.A. it might be desirable in a time of normal advance for her short-term money rate to be, say, 4 per cent. But a common monetary system makes a wide divergence of interest rates in two well organised money markets impossible. In the circumstances supposed short-term money would flow away from England to the United States, thus lowering the prevailing rate in the United States and raising it in London. If the banking systems of the two countries resisted this tendency towards equalisation of rates, gold would begin to flow from London to New York and continue to do so indefinitely.

Absolute equality between the rates at different centres is not, indeed, usually achieved. This is due to the fact that even if the United States and England are both on the gold standard, they have not an absolutely common money. The dollar-sterling rate normally fluctuates within certain limits owing to the cost of remitting gold between the two centres. The dollar has to be slightly above par before gold flows to the United States, sterling slightly above par before gold flows to England. The difference between the highest possible dollar rate and the lowest possible is equal to twice the cost of sending gold between England and America plus the difference between the Bank of England's buying and selling price of gold (½d. an ounce, *vide supra*). This means that if an English firm wants to lend money at short term in the New York market, it has to take the risk of the exchange moving in the interval. Consequently an equalising tendency only sets in if the difference between the short interest rates is more than sufficient to cover this risk.

If the difference between the buying and selling price of gold was increased, this risk would also be enlarged. Consequently it would be possible for rates in London and New York to diverge more from one another. In these circumstances the monetary authorities in each centre would have greater scope to regulate rates at home to suit home requirements without setting up an undesirable flow of gold. The proposal to enlarge the gap between the buying and selling price of gold is due to Mr. Keynes. Such an expedient, while not being inconsistent with the retention of the gold standard, would modify its working in a most desirable manner.

(ii) The second point that calls for notice is this. The scheme for international co-operation has as its objective the maintenance of an appropriate rate of capital construction in the world as a whole together with stability in the value of the circulating medium which that would entail. Stability in the circulating medium may, however, be defined in various ways. As efficiency increases, is it desirable that prices should be maintained at a constant level or allowed to fall in proportion to the increase in efficiency? The answer to this question depends on whether wages and other rewards to factors of production expressed in money are being pushed up as efficiency increases. It must be noted that efficiency may be increasing at different rates in different countries, and that the tendency towards an upward revision (in money) of wages, etc., has different force in different countries. The tendency towards upward revision of wages, etc., may not always be in exact proportion to the upward movement of efficiency. Consequently the kind of stability in the price levels that is desirable for different countries may not be the same.

But if the world is to have a common monetary system the general level of prices must broadly be behaving in the same way everywhere. Suppose that in order to secure equilibrium in the United States it is desirable that prices should have a slight downward tendency, while in England it is desirable that they should be absolutely stable. Both these conditions cannot be realised at the same time, if
England and the United States have a common monetary standard (e.g. a reformed gold standard).

An expedient may be devised for meeting this difficulty. The dollar-sterling par of exchange might be made to alter in a regular manner. Thus, if it was found to be desirable to have prices falling at the rate of 1 per cent in the United States and to have them stable in England, sterling could be made to fall in terms of dollars at the rate of 1 per cent a year. The gold content of sterling would remain fixed, while that of the dollar would rise at the rate of 1 per cent per annum. Such a regular shift would not be inconvenient to trade, and fluctuations from the par outside the ordinary limits would not be allowed.

If only international co-operation could be secured, these and other devices could easily be tried. In the absence of international co-operation each country should set about providing itself with a monetary system appropriate to its own needs. It could not hope then to have stable foreign exchange rates; fluctuations would be due to instability elsewhere. Even in these circumstances it would probably do well to keep these fluctuations within reasonable limits.

In 1932 Parliament authorised the institution in England of an Exchange Equalisation Fund with power to borrow £150 million. In 1933 this figure was raised to £350 million. The purpose of this fund is to buy and sell gold or foreign exchange. It is thus discharging duties which are usually considered the special province of the central bank. Its operations are designed to keep the temporary fluctuations of sterling in the foreign exchange market within reasonable limits. These operations could perfectly properly have been undertaken by the Bank of England. But it was felt that at a time when our monetary policy was undefined and uncertain it was unfair to impose on that institution the risks which these operations necessarily involve in the absence of a specified long-run objective.

If it was decided to embark upon a policy of expansion in England and no expansion or insufficient expansion was undertaken abroad, some drop in the foreign exchange value of sterling might be expected. It would recede to a new normal level. In the process of change, speculation would be likely to occur, making it move up and down in an erratic and disturbing fashion. The resources of the Exchange Equalization Fund could be used to prevent this kind of speculation from having any substantial effect on rates. When the speculative movement was favourable, the Fund would sell sterling and acquire foreign exchange or gold; when it was unfavourable the Fund would buy sterling with the foreign exchange or gold so accumulated. So long as no attempt was made to maintain sterling at an un-natural level, i.e. at a level inappropriate to the prevailing rates of monetary expansion at home and abroad, the inflow of gold and foreign exchange into it and their outflow from it should balance.

If the monetary policy was sharply defined, these duties could be transferred to the Bank of England. It is arguable on the other hand that in this matter of essentially national policy the responsibility should rest with the government. Such an argument, however, is far reaching, since it applies to all the operations of a central bank.