Some Factors Affecting the Money Supply

The money supply

1. The money supply will be defined as the net sterling deposits of the banks, excluding the Bank of England, plus currency in circulation outside the banks. While any definition must be in some degree arbitrary this definition is chosen partly because it is consistent with the classification scheme employed in official statistics and partly for other reasons. The institutions classified as banks compete actively both as borrowers and as lenders, and the considerations which influence the composition of their asset portfolios are broadly similar. To the extent that their portfolios are in fact alike, shifts of funds between banks will not have significant overall monetary effects.

2. It should be noted that this definition of the money supply does not include all deposits repayable on demand: for example, the deposits of the Post Office Savings Bank and the Trustee Savings Banks are excluded. Moreover, while a considerable proportion of the money supply (as defined here) consists of interest-bearing deposits which are not legally repayable on demand, comparable deposit liabilities of other institutions such as finance houses are also excluded. The justification for this procedure lies in the composition of the asset portfolios of these institutions, which differ materially from those of institutions classified as banks. Shifts of funds between banks and other institutions are likely to have important overall monetary effects. Finally, the definition of the money supply adopted here includes sterling deposits of non-residents as well as residents, on the grounds that some non-resident deposits are working balances held for trading purposes and thus affect expenditure in the U.K., and even purely investment balances will affect expenditure in the U.K. through their counterparts in the banks' asset portfolios.

General considerations

3. The volume of money is determined in the context of the decisions of ultimate lenders, ultimate borrowers, and financial intermediaries concerning the composition of their assets and liabilities. Monetary assets are simply one class of financial assets,

which must be viewed in relation to other classes of financial assets and to real assets. The demand for money is consequently related to total wealth and to the returns which may be expected from holding wealth in alternative ways. Part of the money supply, bank deposits, is the main liability for one particular group of institutions, the banks. The supply of money must therefore depend on the extent to which banks find it profitable to extend their liabilities, which in turn depends on the demands of ultimate borrowers in the private and public sectors. The other part of the money supply, currency, is a direct liability of the public sector. Its supply is not in practice controlled. The volume is consequently determined by demand – which appears to be influenced mainly by the level of money income.

Bank portfolios

4. Banks make their profits by creating liabilities with characteristics which are attractive to lenders and holding assets with characteristics which are attractive to borrowers. Bank liabilities usually have a greater liquidity or lower risk of default than most of the assets they hold. As assets bank deposits have three main attractions: they can readily be turned into legal tender (cash); they are themselves convenient as a means of payment; and, in some instances, they are interest-bearing. Since their convenience as a means of payment is also contingent on their encashability, it is essential for banks to maintain or have access to a supply of cash sufficient to meet any likely calls for encashment of deposits. Quite apart from any legal or conventional restrictions on their portfolios which have been accepted by some of the banks, they choose for prudential reasons to hold part of their assets in cash, part as highly liquid assets such as money at call, bills, and short-term loans to local authorities, and part as marketable securities. The division between these assets reflects not only relative yields but also transaction costs and the possibility of capital loss due to changes in interest rates or default by borrowers.

5. The ultimate source of cash is the Bank of England. Any asset which the Bank will buy from the market or accept as security for a loan is therefore readily encashable. Money at call is encashable without capital loss insofar as the security offered is acceptable to the Bank. Refinanceable export credits are encashable without risk of capital loss. The Bank's practice of using money market operations to

control the Treasury Bill rate ensures that bank bills and Treasury bills are encashable with only a slight risk of capital loss. Finally, the Bank's position as jobber of last resort in the Government securities market ensures that Government securities are encashable, although in this case the risk of capital loss is greater because capital values fluctuate. While, from the point of view of monetary control, encashable assets are alike, they may have differing functions in banks' portfolios. The banks possibly regard their holdings of Government securities as their secondary liquid assets, which may be used to replenish their other (primary) liquid assets should the need arise.

6. Assets which are encashable at the Bank of England are liquid assets from the viewpoint of the banking sector as a whole. Individual banks, however, may also regard other assets as encashable. For example, some commercial bills which are not acceptable to the Bank of England are marketable and are thus a source of cash to the individual bank. Such assets are recognised as being less liquid than those which are acceptable to the Bank of England, and are traded at higher rates of discount; but they are nevertheless regarded by the banks as part of their liquid assets. Accepting houses and overseas banks also treat short-term loans to local authorities as 'quick' or liquid assets.

7. The division of bank portfolios between liquid assets of different types is by no means rigid. When the yield margin of illiquid over liquid assets is high banks will be disposed to hold a relatively large proportion of illiquid assets in their portfolios, the increase in relative profitability compensating them for the greater risk incurred. Nevertheless, it is reasonable to suppose that prudential consideration imposes a lower limit on the share of liquid or encashable assets in the banks' portfolios. Consequently, the supply of such assets to the banking sector imposes an upper limit on the size of their asset portfolios in total, and hence, given the banks' own capital reserves, on the volume of bank deposits. The extent to which the volume of bank deposits falls below this upper limit reflects the yield margins to be earned by holding illiquid assets; the lower the yield margin in favour of illiquid assets the greater the share of liquid assets in the banks' portfolios and the smaller the volume of bank deposits. Any imposed liquidity constraint in excess of the levels

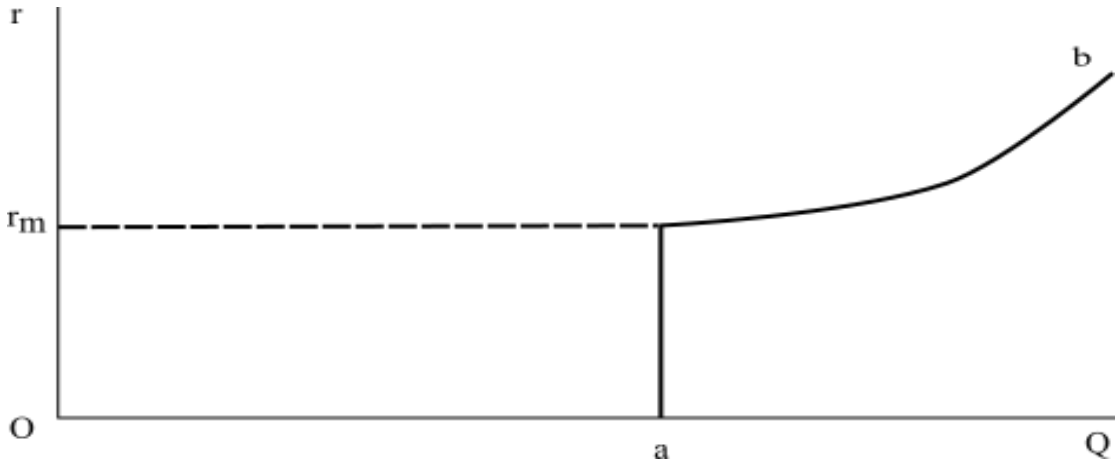
which the banks would voluntarily choose further reduces the volume of bank deposits.

Analytical framework

8. To provide a framework for the analysis it may be useful to give a highly simplified diagrammatic exposition of the way in which the volume of bank deposits is determined. It will be assumed that banks hold two classes of assets, 'liquid' (i.e. 'quick' or encashable) assets, and advances. The ratio of liquid assets to advances will be assumed to be fixed provided the yield on advances exceeds some minimum; it is assumed that banks are unwilling to make any advances at lower yields and will choose a higher proportion of liquid assets in their portfolios if they cannot obtain this minimum yield. Then the volume of bank deposits equals the sum of liquid assets and advances, less the banks' non-deposit liabilities.

9. In diagram 1(a) the supply of liquid assets to the banks is shown as *ab*. It is shown as increasing with the yield on bank advances. There is some basic minimum supply of liquid assets which must be held by the banks irrespective of the yield on advances; beyond this, a high yield on bank advances will stimulate competition between the banks, and this competition will augment the banks' holdings of liquid assets. This will be discussed at length in paragraphs 13 to 37 below.

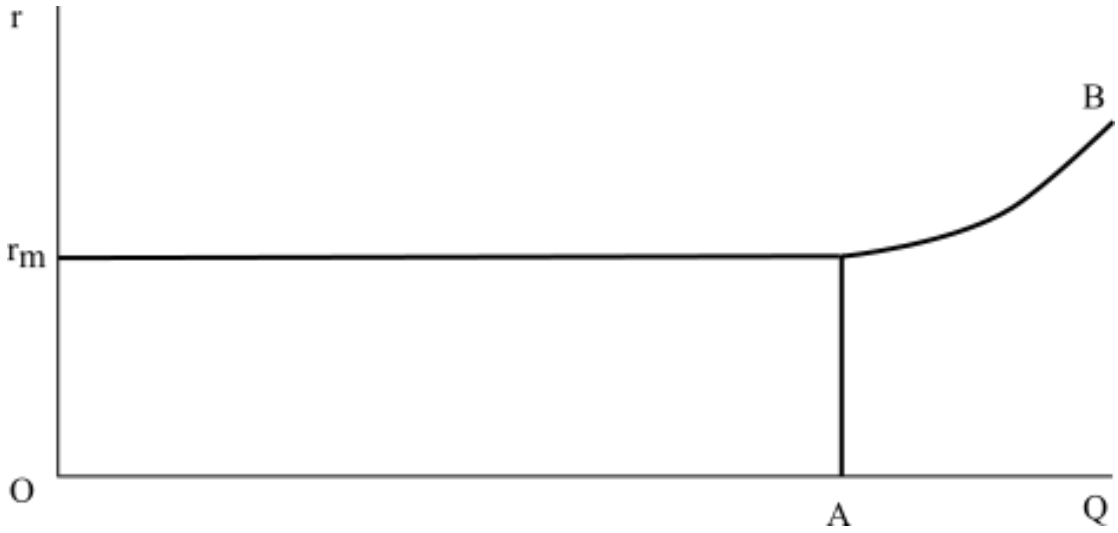
Diagram 1(a): The supply of liquid assets



r = yield on bank advances, Q = volume supplied.

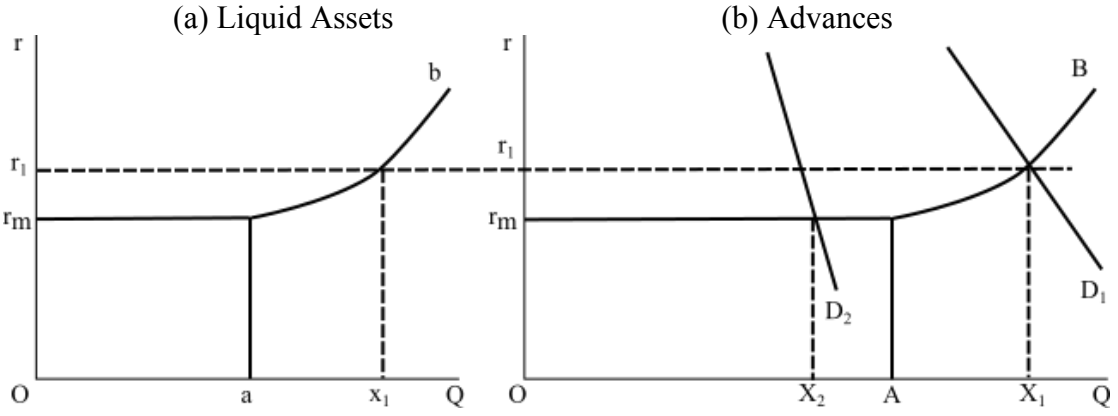
10. If, for prudential reasons, banks hold a minimum proportion of their assets in liquid form they are necessarily restricted to a maximum ratio of advances to liquid assets in their portfolios. The maximum level of bank advances which is consistent with any given yield on bank advances, shown as *AB* in diagram 1(b), is obtained by multiplying the supply of liquid assets at each yield on advances by the ratio of advances to liquid assets. *AB* is not, however, the supply curve of bank advances, because at yields below r_m banks are unwilling to take the risk of making advances. Hence the supply curve of bank advances is r_mB.

Diagram 1(b): The supply of advances



11. To determine the volume of bank deposits, the demand for advances must also be known. This is illustrated in diagram 2.

Diagram 2: The determination of bank portfolios



If the demand for advances is D_1 advances will be OX_1 yielding r_1, and the volume of liquid assets will be Ox_1. The volume of deposits will be ($OX_1 + Ox_1$) less the banks' other liabilities, e.g. currency deposits switched into sterling and their own capital reserves. If the demand for advances is D_2 the volume of advances will be OX_2 at a yield r_m. In this case the banks will choose to maintain liquidity ratios in excess of the minimum because there is insufficient demand for advances: liquid assets will be Oa and the volume of deposits will be ($OX_2 + Oa$) less the banks' other liabilities.

12. Using this framework it is not difficult to investigate the effects on the volume of bank deposits of different types of monetary control. Before this is attempted, however, it is desirable to look more closely at the factors which determine the supply of liquid assets to the banks.

The supply of liquid assets

13. Some of the liquid assets held by the banks are liabilities of the private and overseas sectors or of financial institutions; the remainder – the larger part – are liabilities of the public sector. There are four components in the former part: balances with other U.K. banks, money at call outside the discount market, refinanceable export credits and commercial bills.

(I) Inter-bank lending

14. In recent years inter-bank lending of funds has become much more common. The funds concerned are principally foreign currencies, but some inter-bank lending of sterling funds also takes place. In addition, U.K. banks lend money at call to other U.K. banks. The great bulk of inter-bank lending of foreign currencies does not affect the money supply of the U.K., but one part of it is significant. Foreign currencies on-lent by the domestic banks are counted as liquid assets for the purpose of their conventional liquidity ratios. The domestic banks could therefore increase their liquid assets by taking a more active part in the Euro-dollar market, though they do not at present appear as borrowers in this market.

(II) Money at call

15. Banks bid for sterling funds either because they are short of funds and do not want to liquidate assets or because, taking a view on future interest rates, they expect to be able to borrow more cheaply in the long term by borrowing initially, or possibly repeatedly, for a short period. Money taken at call by finance houses is governed by similar considerations. The demand for money at call by other borrowers is probably more strongly influenced by other factors: the demand by overseas residents may reflect confidence in sterling, and the demand of stock jobbers and brokers their expectation of stock market prices. The lending of money at call causes a cash drain on the banks as a whole only if it is used for the purchase of central Government debt; and even if it is ultimately employed in Government debt the same funds may appear as liquid assets of two or more institutions. Strong private demand for credit stimulates the demand for money at call; and through double-counting and the attraction of funds which could otherwise have been employed in Government debt, increases the liquid assets of the banks.

(III) Refinanceable export credits

16. Refinanceable export credits comprise medium or long-term credits to exporters guaranteed by the Exports Credit Guarantee Department (E.C.G.D). The banks treat 30% of such credits, or all sums falling due within eighteen months, whichever is the greater, as liquid assets. The banks' influence on the total of such credits is slight: it is limited to the rare cases in which they may refuse a credit because they believe that the potential exporter will be unable to complete his contract. The most important determinants of the supply of these assets are the volume of U.K. exports undertaken on credit terms falling within the scheme – which in turn depends on the competitiveness of U.K. capital-goods exporting industries – and the underwriting policy of E.C.G.D. Although there is a long-run upward trend in the total of refinanceable export credit, the banks themselves are not in a position to induce an increase in the short run.

(IV) Commercial bills

17. The forces determining the volume of commercial bills are much more complex. In the first place, the commitments undertaken by accepting houses and banks in respect of bills must be considered; in the second place, the demand for finance through this particular debt instrument is also important.

18. In principle, an institution's capital resources determine the extent to which it can take on contingent liabilities. When a bank or accepting house agrees to accept a customer's bill it commits itself to a contingent liability; and frequently it also commits its own liquid resources by agreeing to discount the bill. If the bills are acceptable to the Bank of England, the accepting house will normally be able to sell them in the market or pledge them as security for loans, and in an emergency they will certainly be encashable – through possibly at an unfavourable rate. Bills which the Bank of England will not discount or will discount only in limited amounts represent a greater risk, and houses will seek to limit the proportion of such bills in their portfolios.

19. Although accepting houses aim to employ their capital fully, customers do not usually want to make full use of their credit lines. The accepting house's maximum liability is consequently in excess of its normal liability, and is likely to impose some strain on the banks' resources. Since the banks cannot risk an intolerable strain on their capital resources they place a limit on the maximum amount of bills financed, with the actual volume of commercial bills outstanding normally being somewhat less. At the onset of a credit squeeze customers will tend to make fuller use of their facilities and the volume of commercial bills will increase; but if this imposes a strain on the banks' resources they will react by refraining from offering credit lines to new customers and possibly reducing credit lines when arrangements are due for renewal.

20. The demand for finance by discounting bills depends upon the cost of the bill finance in relation to the cost and availability of funds from other sources. Some importing and exporting trades are accustomed to financing their business by discounting bills. Finance houses raise part of their short-term funds in this way, the amount depending on the relative cost of bill finance and bank overdrafts or deposits

from the public. Other borrowers turn to bill finance when funds from their usual sources, particularly the domestic banks, are restricted. Thus when bank advances are expensive or difficult to obtain the demand for finance by discounting bills will rise.

21. In normal times the demand for bill finance and the supply will be in balance which permits the capital employed on acceptances to earn a reasonable return. There will also be some scope for expansion in the volume of bills without any additional capital being drawn into this business. Whether expansion in the short run can go further depends on the ease with which institutions can extend their acceptance commitments without exposing their capital to an undue risk taking their business as a whole. There is reason to believe that some institutions will be glad to take on additional commitments in a credit squeeze. In such circumstances the banks' capital is underemployed unless the credit squeeze itself substantially increases the default risk on the banks' existing assets. Provided the banks are not restrained by risk considerations an extension of their acceptance business will seem desirable; and they need not themselves have free liquid assets, because they can be sure that they will be able to discount bills in the market – bank bills offering a higher yield but only marginally more risk than Treasury bills. To the extent that banks are able to increase their acceptances in a credit squeeze the volume of bills will primarily reflect the demand, the supply being highly elastic.

22. Even if the supply of bank bills were limited, the use of trade bills as a source of funds might increase. However, the potential contribution to the liquidity of the banking system from this source is limited, because the default risk associated with trade bills is much greater than the risk associated with bank bills. Institutions will consequently limit their holdings.

(V) Central Government debt: internal considerations

23. The balance of the banks' liquid assets is made up of the various forms of public sector debt, primarily Treasury bills and marketable securities but also temporary money placed with local authorities. It is convenient to treat the part of the Government-guaranteed debt held by the banking system as a residual, the difference between the Government-guaranteed sterling debt and that part which is in non-bank

hands, and to investigate the factors which determine the total supply and non-bank demand. Temporary money placed with the local authorities will be considered separately. At this stage the UK's net liabilities to overseas residents will be treated as fixed, the complications involving international movements of funds being reserved for later discussion.

24. The total Government debt – its accumulated net borrowing – is increased by payments for goods and services, transfer payments and loans by the Government and reduced by tax payments, fines, payments by the private sector for goods and services, and the repayment of loans. Initially any net increase in Government debt takes the form of cash, but in managing the money market the Bank ensures that this is converted almost simultaneously into Treasury bills or marketable securities. Ultimately, the form of Government debt reflects the authorities' success in managing the bond market, their interest rate policy, and the private sector's demand for different classes of assets.

25. It is difficult to make any useful general statements about the factors which affect the private sector's demand for the various types of Government debt in the absence of detailed empirical studies; but it may nevertheless be worth suggesting the direction of the changes which would be expected in some situations. The following will be considered, each on a ceteris paribus assumption: -

a rise in the private sector's net worth;

a rise in interest rates on Government debt, unaccompanied by changes in other interest rates;

a rise in the level of interest rates generally, associated with a credit squeeze;

an improvement in the outlook for company profits;

an increase in the level of income; and

expectations of inflation.

26. The flow of private sector savings steadily increases the private sector's net wealth, part of the increase being in the form of real assets purchased directly by savers, and part being in the form of financial assets created by ultimate borrowers or

by financial intermediaries. The increment to financial asset portfolios normally includes a proportion of Government debt. Thus there is an upward trend in the demand for Government debt associated with saving by the private sector.

27. The proportion of assets held in Government debt reflects the attributes of these types of financial assets in relation to the attributes of other financial assets. In the long run an improvement in the expected yield on Government debt might be expected to increase the proportion of asset portfolios held in this way. This almost certainly holds in practice for non-marketable debt, but it is less certain for marketable debt, particularly in the short run. Presumably a rise in the yield on Government marketable debt would ultimately encourage wealth holders and financial intermediaries to hold a larger proportion of their asset portfolios in this form. But in the short run it might nevertheless be difficult to make net sales of marketable securities if yields were expected to rise further. If sales of marketable securities are dominated by short-term expectations of changes in yields, any rise in the average yield over an extended period would be associated with an increase in sales of Government securities in the long run, but all the sales might still take place at times when yields were expected to fall. In contrast, a fall in the relative yield on Government securities associated with a rise in the yield on the liabilities of financial institutions will certainly cause a fall in the demand for both marketable and non-marketable Government debt, partly because expectations of a rise in the yield on marketable debt will be induced. This is particularly likely to occur at the beginning of a general credit squeeze, when yields on private sector debt tend to rise faster than yields on Government debt. Subsequently, as interest rates begin to fall again the demand for Government securities increases.

28. Expectations of changes in company profits encourage attempted shifts between equities and bonds or liquid assets, a substantial part of which are forms of Government debt. When the outlook for company profits is improving there is a tendency to move from other sorts of assets into equities, and a reverse tendency takes place if there is uncertainty or the outlook becomes unfavourable. Since the volume of equities is inelastic in the short run such shifts in the desired disposition of assets are reflected mainly in a change in yields. Initially there may also be a temporary accumulation of liquid balances, which will be relieved by a rise in equity prices and

an increase in the flow of new issues. Conversely, an attempt to shift out of equities will be reflected in undesired temporary illiquidity, relieved by the fall in prices and a diminution in the flow of new issues.

29. An increase in the level of income increases the demand for one type of Government debt, currency. Expectations of inflation reduce the demand for fixed-interest assets in general and hence the demand for Government debt in particular.

(VI) Local authority short-term borrowing

30. In the short run it is possible to treat central government borrowing from the banks as a residual because there is very little feed back in the short run from bank borrowing to decisions concerning total government borrowing requirements and interest rates: day-to-day management of the gilt-edged market is directed to selling as much stock as possible, and interest rates on non-marketable debt tend to be sticky. It is different with local authorities. Their capital expenditure may be influenced by the cost of borrowing, and the composition of their borrowing is sensitive to the comparative costs of different debt instruments. Of course, there are limitations on the level of short-term borrowing and in access to the capital market, but the relative cost (and availability) of bank overdrafts, temporary money, bonds and mortgages affect the composition of local authorities' liabilities.

31. Local authorities' demands for temporary money rise in a credit squeeze when the cost of borrowing at longer-term increases. Yields on temporary money rise too, and this attracts a greater volume of funds, some of the additional funds coming from the banks. Competition amongst banks for deposits to enable them to take advantage of the higher yields will not force them to reduce their holdings of any other liquid assets, since a transfer of deposits within the banking system does not induce any cash drain. Thus greater activity by local authorities in the temporary money market increases the liquid assets of the banking system as a whole.

(VII) International complications

32. In discussing international complications it is worth examining four distinct cases:

(i) A UK balance of payments disequilibrium.
(ii) A Sterling Area balance of payments disequilibrium.
(iii) Short-term capital movements within the Sterling Area.
(iv) Other capital movements.

33. The implications of a U.K. balance of payments deficit depend upon the way it is financed. In so far as foreign exchange must be purchased from the European Economic Area (EEA) the banking system immediately loses cash, but in so far as the deficit is with the rest of the Sterling Area the funds do not necessarily leave the banking system. If, for example, a British overseas bank gains (non-resident) sterling deposits at the expense of a domestic bank's resident deposits, the British overseas bank may choose to employ its funds in the U.K. Only in so far as the funds are remitted abroad will the banks lose cash, since there will be a transfer from bankers' to customers' deposits at the Bank of England when the funds are converted into local currency. Many Sterling Area banks make a practice of retaining a substantial proportion of their liquid assets in the U.K., and to the extent that they do so a U.K. balance of payments deficit with the rest of the Sterling Area will not be fully reflected in a loss of cash to the banks.

34. This practice is also responsible for the effects of Sterling Area balance of payments disequilibria on the U.K. banking system. Gains or losses of assets by the Sterling Area banks are reflected in their liquid assets held in the U.K., and lead to transfers to or from bankers' deposits with the Bank of England.

35. Short-term capital movements within the Sterling Area may be expected to respond to interest rate differentials. This applies both to funds which are normally invested in liquid assets and to risk capital. Thus high interest rates will encourage Sterling Area banks and other holders of short-term capital to hold assets in the U.K.. For Sterling Area funds, which are subject to Exchange Control, it is presumably the

uncovered interest arbitrage margins which are relevant; and the yields on risk assets may be as important as the yields on liquid assets (including loans to local authorities). Inflows of bank funds increase the liquid assets of the banking system directly; inflows of other funds also increase bank liquidity to the extent that they are not invested in central Government debt.

36. Short-term capital movements between the Sterling Area and the rest of the world also affect the liquid assets of the banking system. These too may be expected to respond to interest incentives, the relevant interest margin probably varying with confidence in sterling. If confidence in sterling is very weak funds will flow out whatever the interest margin in favour of investment in the Sterling Area; if confidence is moderate funds will respond to changes in covered margins; and if confidence is high both covered and uncovered margins are probably relevant. Again, the yield on risk assets may be at least as important as the yields on liquid assets. Short-term capital movements may take place at the instigation of overseas residents, of the U.K. private sector (e.g. leads and lags), or of the U.K. banks (e.g. borrowing Euro-dollars). Changes emanating from the overseas or private sectors affect bank liquidity in so far as they involve private or banking sector liabilities in the U.K.; changes in the liabilities of U.K. banks affect their liquidity immediately funds are converted into sterling.

(VIII) Summary

37. In summary, the volume of liquid assets available to the banks is determined in part by factors, such as the Government's overall borrowing requirement for domestic purposes and the return it offers on marketable and non-marketable debt, which reflect Government policy and which are subject to a fair degree of Government control. These factors may be regarded as determining *Oa* in diagram 1(a) showing the supply of liquid assets. But the volume of liquid assets is also affected by factors emanating from the demand for credit by the private sector, over which the authorities have much less control. A high demand for credit will stimulate the supply of non-Governmental liquid assets – e.g. local authority temporary money and commercial bills – and increase the volume of central Government liabilities available to the banks, because the private sector's demand for public sector debt falls

and overseas demand for U.K. non-Governmental financial assets rises. These factors may be regarded as determining *ab* in diagram 1(a). In passing to diagram 1(b), which shows the supply of advances, it should also be remembered that the assumption of a rigid minimum proportion of liquid to risk assets is not fully justified. In practice, this proportion would be expected to fall as the yield on bank advances rises, thus permitting the level of advances to rise without any increase in liquid assets. However, such an increase could not continue indefinitely.

Monetary control

38. The analytical framework outlined in paragraphs 8 to 12 above suggests that three broad types of monetary control should be distinguished: -

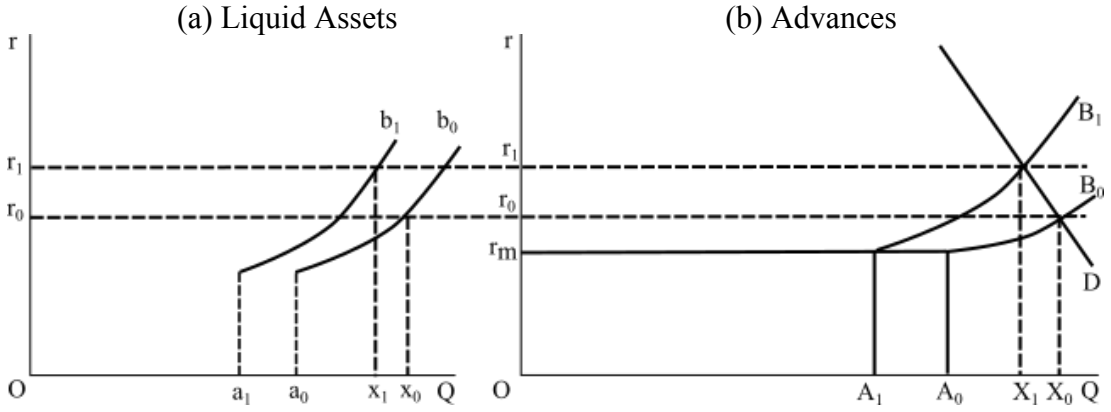
1. Control of the supply of liquid assets.
2. Control of the minimum proportion of liquid assets in banks' portfolios.
3. Control of the level of advances.

Each of these will now be examined. It will be assumed that the banks do not have excess liquidity, i.e., that the yield on bank advances exceeds r_m. The change in the level of sterling bank deposits is the sum of the changes in advances and liquid assets, less any change in the amount of foreign currency assets switched into sterling.

39. In principle, monetary control of the supply of liquid assets might either cut the irreducible minimum (*Oa*) available to the banking system or increase the cost of attracting assets in excess of the minimum. In practice most measures probably affect both but have their main impact on one. For example, a substantial rise in the rate of interest on non-marketable Government debt would act mainly to reduce the minimum, whereas control of bill acceptances, control of the rates of interest offered on bank deposits, operations to affect the cost of forward cover and restrictions on local authority temporary borrowing would act mainly to increase the cost to the banks of increasing their liquid assets.

40. In diagram 3(a) the irreducible minimum of liquid assets is cut by $a_o a_1$, implying a shift in the potential maximum level of advances from $r_m B_o$ to $r_m B_1$.

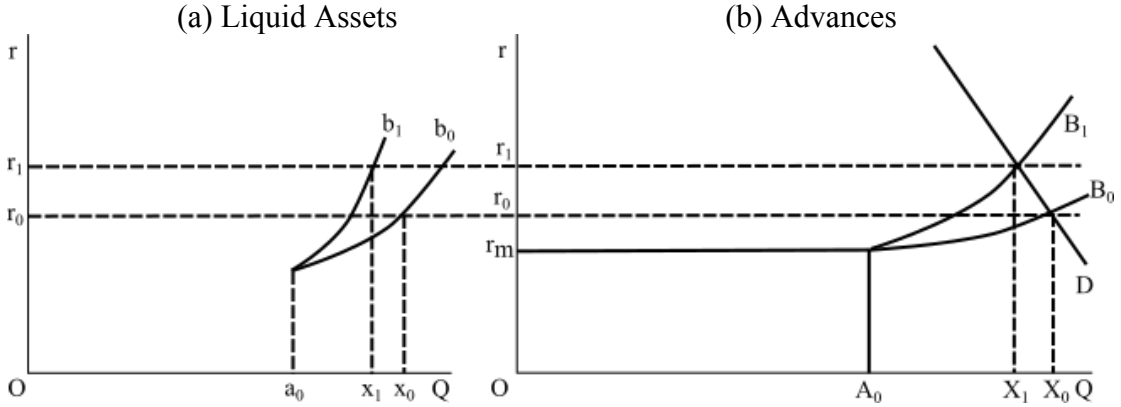
Diagram 3. A reduction in the minimum supply of liquid assets



If the demand for advances is *D* actual advances fall from OX_0 to OX_1. X_0X_1 is less than A_0A_1 because the increased yield on advances partly offsets the contraction of liquidity. The extent to which this is offset depends on the elasticity of demand for advances. The less elastic is this demand the less the contraction in advances: competition by banks for deposits will replenish their initial reduction in liquid assets. In this case the fall in the volume of deposits is the 'usual' multiple of x_0x_1, the ultimate contraction in liquid assets, which is, of course, less than the initial contraction, a_0a_1.

41. Diagram 4 illustrates the case where monetary policy makes it more difficult for banks to expand their liquid assets.

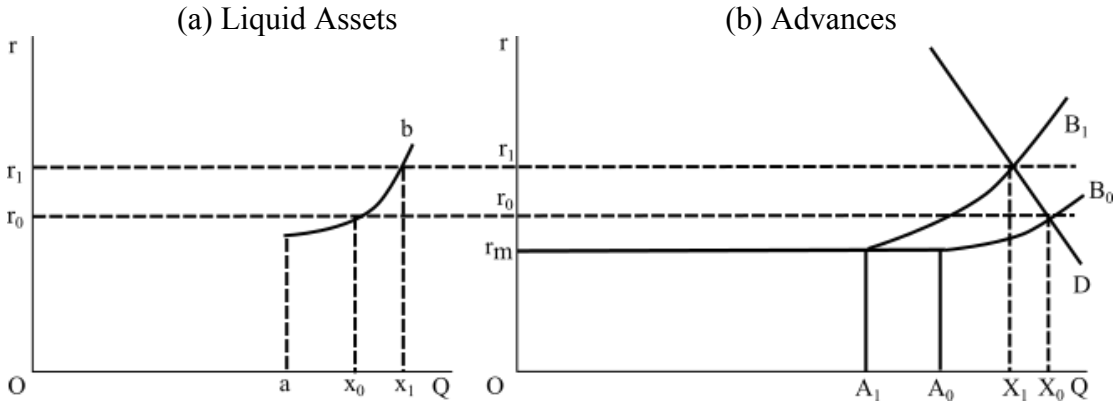
Diagram 4: Monetary controls to inhibit an expansion of liquid assets



If the demand for advances is *D* the monetary controls will raise the yield on advances and hence reduce their value, the extent of the reduction being greater the more elastic is *D*. Unless *D* is perfectly inelastic both advances and liquid assets will be reduced (by X_0X_1 and x_0x_1) respectively), both reductions contributing to a decrease in the volume of deposits.

42. The second type of monetary control affects the maximum level of advances which can be supported with a given volume of liquid assets. Increases in minimum reserve requirements or calls for special deposits combined with instructions to the banks not to reduce investments are measures of this type. If such controls are not comprehensive they may be partially offset by a shift of deposits from the controlled (e.g. clearing) banks to the uncontrolled (e.g. merchant) banks. The effect of tightening of such controls is shown in diagram 5.

Diagram 5. An increase in the proportion of liquid assets in banks' portfolios

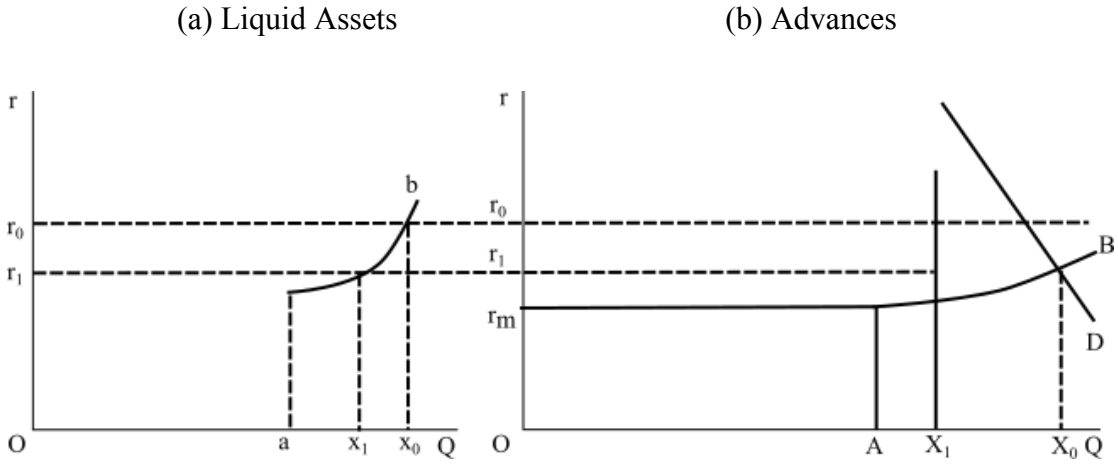


While the supply of liquid assets is unchanged the supply of advances is reduced. If the demand is *D* the volume of advances will be cut by X_0X_1. The cut is not, however, in direct proportion to the increase in the required ratio of liquid assets because the yield on advances rises and the volume of liquid assets increases. In the limit, if *D* were perfectly inelastic, the volume of liquid assets would increase to the extent required to support the original level of advances. The change in the volume of deposits is the sum of the reduction in the level of advances (X_0X_1) plus the increase in the level of liquid assets (x_0x_1). The net effect may be either an increase or a decrease in the volume of deposits. The more elastic the demand for advances and

the greater the difficulty of attracting additional liquid assets the more likely it is that the volume of deposits will be reduced.

43. Finally, the level of advances may be controlled directly. This is shown in diagram 6.

Diagram 6. A control on bank advances



Instead of the original demand curve *D* giving a level of advances OX_0 the supply is limited by official action to OX_1. In order to support this level of advances the banks need only Ox_1 (instead of their former Ox_0) of liquid assets. The falls in advances and in liquid assets both contribute to a reduction in the volume of deposits, though in this case the fall is very likely to be partially offset by a reduction in the amount of foreign currency assets switched into sterling. The yield on advances will, of course, be greater than r_1 because potential borrowers are willing to pay more: the excess will reflect the extent to which banks choose to ration advances by price or in other ways. It should be noted that so long as official controls restrain the level of advances, further controls designed to hinder the creation of liquid assets will not reduce the volume of deposits, though they may increase the banks' holdings of Government debt at the expense of liquid assets which are liabilities of the private sector.

Empirical results

44. So far the analysis has been theoretical. Now an attempt will be made to identify the change in banks' portfolios which have taken place, and to investigate the

means by which the banking sector has been able to increase its liabilities in recent years. The banking sector as a whole will be considered first, and then the portfolios of two constituent parts – the accepting houses and overseas banks and a consolidation of the domestic banks and the discount market – will be examined. It is important to remember that some assets which are liquid from the point of view of individual banks disappear in the process of consolidation: the liquidity ratios of consolidated groups are relevant for monetary analysis, but may underestimate the liquid assets available to any individual bank should it – in isolation – require them.

(I) The banking sector

45. Table 1 shows that bank money, defined here as the net deposits of the banking sector plus commercial bank notes in circulation less the foreign currency deposits of the accepting houses and overseas banks, has increased substantially since 1963: the level in 1965 was between 17% and 19% higher than in the comparable quarters of 1963.

Table 1. Banking sector: selected assets and liabilities – amounts

	Bank Money[1]	Adjusted Deposits[2]	Liquid Assets[3]	£mns. Ratio[4]
Mar. 1963	9,267	9,425	5,389	0.572
June	9,687	9,845	5,733	0.583
Sept.	9,957	10,096	6,025	0.597
Dec.	10,385	10,527	6,402	0.608
Mar. 1964	10,150	10,319	5,891	0.571
June	10,572	10,789	6,073	0.563
Sept.	10,775	11,014	6,228	0.564
Dec.	10,697	10,964	6,159	0.562
Mar. 1965	11,071	11,415	5,576	0.489
June	11,366	11,628	5,920	0.509
Sept.	11,521	11,702	6,149	0.525

1. Net deposits and commercial bank notes minus identified foreign currency deposits.
2. Bank money and switch.
3. Central Government debt, private sector debt classified as 'liquid', local authority temporary money.
4. Liquid assets divided by adjusted deposits.

An attempt to explain this rise must first include an examination of the proportion of liquid assets in the banks' portfolios, of the change in the level of their liquid assets, of the changes in the composition of their liquid assets, and of the sources of these changes.

46. Since banks hold liquid assets as a protection against a loss of deposits it is reasonable to relate their liquid assets to their deposits. Foreign currency assets and liabilities present a problem, because there is no information about the liquidity of these assets. Its seems best to restrict analysis to sterling assets and liabilities, including in liabilities the amount of foreign currency deposits switched into sterling since prudential considerations dictate that some sterling assets will be acquired with 'adjusted deposits', defined as bank money plus foreign currency switched into sterling (plus the net spot position in gold). Liquid assets include all forms of central Government and Government-guaranteed debt, debt of the U.K. private and other financial sectors which are classified as liquid by the Bank of England, and local authority temporary money.

47. Table 1 shows that the rise since 1963 in adjusted deposits is very close to the rise in bank money but that liquid assets have risen comparatively little and the ratio of liquid assets to adjusted deposits has consequently fallen. Table 2 shows the comparison with 1963 – which seems to have been a more or less 'normal' year – more clearly. (It should be noted that the changes shown for 1965 are over two years whereas those for 1964 are over one year. This form of comparison has been adopted because data are not available for a sufficient run of years to allow seasonal adjustments.)

Table 2. Banking sector: selected assets and liabilities – changes since 1963.

	Bank Money	Adjusted Deposits	Liquid Assets	£mns. Ratio
Mar. 1964	883	894	502	0.00
June	885	944	340	-0.02
Sept.	818	918	203	-0.03
Dec.	312	437	-243	-0.05
Mar. 1965	1,804	1,990	187	-0.08
June	1,679	1,783	187	-0.07
Sept	1,564	1,606	124	-0.07

The ratio of liquid assets to adjusted deposits began to fall in the second quarter of 1964 and continued to fall rapidly until it reached its trough at the end of the first quarter of 1965. At that time it had fallen by eight percentage points from its 1963 level. Since then there has been a small increase. This fall in the ratio accounts for well over 80% of the increase in adjusted deposits between 1963 and 1965. The balance is associated with the increase in liquid assets.

48. Tables 3 and 4 show the composition of liquid assets and the changes which have taken place in the components.

Table 3. Banking sector: liquid assets – amounts

£mns.

	Total Liquid Assets	Central Government[1] Debt	Private Sector[2] etc. Debt	Local Authority[3] Loans
Mar. 1963	5,389	4,185	888	316
June	5,733	4,478	926	329
Sept.	6,025	4,763	920	342
Dec.	6,402	5,099	974	329
Mar. 1964	5,891	4,455	1,009	427
June	6,073	4,558	1,027	488
Sept.	6,228	4,661	985	582
Dec.	6,159	4,582	1,119	458
Mar. 1965	5,576	3,914	1,123	539
June	5,920	4,276	1,162	482
Sept.	6,149	4,448	1,204	497

1. Notes and coin, Treasury bills, Government securities, net Exchequer indebtedness to the Bank of England.
2. Money at call, commercial bills, re-financeable export credits.
3. Temporary money.

Table 4. Banking sector: liquid assets – changes since 1963

£mns.

	Total Liquid Assets	Central Government Debt	Private Sector etc. Debt	Local Authority Loans
Mar. 1964	502	270	121	111
June	340	80	101	159
Sept.	203	-102	65	240
Dec.	-243	-517	145	129
Mar. 1965	187	-271	235	223
June	187	-202	236	153
Sept.	124	-315	284	155

There has been a slight downward trend in central Government debt more than offset (except in December 1964) by strong upwards trends in private sector debt and in local authority temporary money. The fall in central Government debt is mainly a reflection of the U.K. balance of payments difficulties, which would normally be expected to drain liquidity from the banking system and which has more than offset the effect of the Government's internal borrowing requirement. However, the strength of demand for funds by the private sector and local authorities was such that the increase in private sector debt (mainly in commercial bills but also in refinanceable export credits) and local authority loans outweighed the contraction in central Government debt.

49. The level of central Government debt is affected not only by the central Government's borrowing requirements for internal items and by the balance of payments deficit on the current and long-term capital accounts, but also by short-term capital movements. Part of this, switching from foreign currency into sterling, is under the banks' own control and part, deposits by overseas residents with finance houses and local authorities, affects bank liquidity indirectly. When finance houses or local authorities attract deposits from overseas residents (and provided these deposits are not sterling funds formerly deposited with U.K. banks) the banking system gains liquidity because there is either an accretion to the gold reserves or a transfer form customers' to bankers' deposits at the Bank of England. Switching by banks into sterling and direct lending to local authorities and finance houses by overseas residents are both encouraged by high interest rates in the U.K.

50. Table 5 shows estimates of the liquidity gained by the banks due to this short-term capital inflow. It has been calculated on the assumption that <u>all</u> additional funds borrowed direct from overseas residents increased the banks' liquidity. The data are very imperfect, but not worthless. They show that the increase in short-term borrowing from overseas between 1963 and 1965 was of the same order of magnitude as the increase in the banks' total liquid assets in this period.

Table 5. Changes in central government debt – external effect: 1964 and 1965 compared with 1963.

£mns.

	Local Authority Borrowing [1]	Finance House Deposits[1]	Total L.A. plus F.H.	Switch[2]	Total Short-term Inflow
Mar. 1964	25	-10	15	11	26
June	48	-6	42	60	102
Sept.	53	14	67	97	164
Dec.	29	14	43	125	168
Mar. 1965	50	7	57	186	243
June	40	31	71	104	175
Sept.	34	54	88	40	128

1. Identified borrowing from overseas residents
2. The figures are not fully consistent, and the increase in switching is probably exaggerated.

51. Since the period under review was dominated by the balance of payments crisis it may be useful to summarise the ways in which the banking sector avoided the effects of the liquidity drain which is typical of such times. This drain usually appears as a reduction in the banks' holdings of central Government debt. In this period the reduction was mitigated by the central Government's internal borrowing requirement, which exceeded the amount borrowed from non-banking sectors: and the balance of payments deficit was itself mitigated by the inflow of short-term capital, partly switched into sterling by the banks and partly deposited directly with the finance houses and local authorities. Even so, the banks' holdings of central Government debt fell. But their liquid assets rose slightly, because there was a steady growth in refinanceable export credits, a sharp increase in the supply of commercial bills (stimulated partly, no doubt, by the shortage of credit) and a substantial expansion of local authority short-term borrowing. These were sufficient to outweigh the reduction in central Government debt, and would have supported a small rise in bank deposits without any fall in the ratio of liquid assets to deposits. The large rise in deposits which took place, however, could only be accommodated through a substantial fall in the liquidity ratio.

(II) The accepting houses and overseas banks

52. Table 6 shows that the sterling deposits of the accepting houses and overseas banks rose by nearly £1,000 million between September 1962 and September 1965, an increase of over 60%.

Table 6. Accepting houses and overseas banks deposits and liquid assets

£mn.

	Sterling Deposits	Switch[1]	Adjusted Deposits[2]	Liquid Assets[3]	Ratio[4]
Sept. 1962	1,563	139	1,702	1,325	0.778
Dec.	1,658	150	1,808	1,434	0.793
Mar. 1963	1,696	158	1,854	1,432	0.773
June	1,824	158	1,982	1,541	0.778
Sept	1,996	141	2,137	1,659	0.776
Dec.	2,091	142	2,233	1,680	0.752
Mar. 1964[5]	2,207	169	2,376	1,780	0.749
June	2,349	217	2,566	1,867	0.727
Sept.	2,441	239	2,680	1,933	0.721
Dec.	2,364	267	2,631	1,785	0.678
Mar. 1965	2,335	344	2,679	1,774	0.662
June	2,454	262	2,716	1,743	0.641
Sept.	2,558	181	2,739	1,798	0.656

1. Foreign currency liabilities plus net spot position in gold minus foreign currency assets.
2. Sterling deposits plus switch.
3. Balances with U.K. banks, money at call, bills, Government securities, and local authority temporary money.
4. Liquid assets divided by adjusted deposits.
5. There was a significant increase in coverage in March 1964.

A small part of this, perhaps 3%, reflects increases in the comprehensiveness of the data but the balance is true growth. It did not take place uniformly over the period: growth was rapid in 1963 and most of 1964, but ceased abruptly in the fourth quarter of 1964 and only resumed its upward course in the second and third quarters of 1965. The slowing down of deposit growth at the end of 1964 was partially offset by a sharp increase in the amount of foreign currency deposits switched into sterling. In December 1964 and March 1965 switching was over £100 million and over £170 million higher respectively than at the corresponding time a year before. Since then the amount of switching has fallen, reflecting possibly the resumption of deposit growth and the restraint on bank advances.

53. Liquid assets have grown more slowly – by under 40% between September 1962 and September 1965 – and the ratio of liquid assets to adjusted deposits has consequently fallen, though not at a uniform rate. The ratio began to fall at the end of 1963 and continued to fall gradually through 1964 until there was a sharp fall at the end of the year – reflecting, no doubt, the fall in deposits. The decline in liquid assets continued into 1965 and, despite the rise in deposits, the liquidity ratio was lower in June than in March. However, it was slightly higher in September.

54. Table 7 shows the sources of the increase in deposits.

Table 7. Accepting houses and overseas banks sterling deposits and switch

	U.K. Banks	Other U.K. Residents	Overseas Residents	Switch	£mns. Total (Adjusted Deposits)
Sept. 1962	96	415	1,052	139	1,702
Dec.	131	431	1,096	150	1,808
Mar. 1963	118	502	1,076	158	1,854
June	166	530	1,128	158	1,982
Sept.	184	588	1,224	141	2,137
Dec.	228	655	1,208	142	2,233
Mar. 1964	211	663	1,333	169	2,376
June	229	737	1,383	217	2,566
Sept.	252	764	1,425	239	2,680
Dec.	266	815	1,283	267	2,631
Mar. 1965	250	815	1,270	344	2,679
June	268	888	1,298	262	2,716
Sept.	320	907	1,331	181	2,739

The most important source was U.K. residents other than banks, whose deposits increased somewhat erratically by more than £150 million a year on average; deposits by U.K. banks show the greatest proportionate growth, having risen by over £60 million a year on average; and apart from a seasonal decline in the first quarter of each year the increase has been uninterrupted. There is some indication that borrowing from other U.K. banks and switching of foreign currencies may be to some extent substitutes, the one increasing faster when the other rises more slowly or falls.

55. Deposits by overseas residents have also increased, by about £100 million a year on average. However, the increase was by no means steady: the bulk took place between the beginning of 1963 and the third quarter of 1964 and part was probably

associated with the U.K.'s balance of payments deficit. There was then a very sharp fall in the fourth quarter of 1964 and a further small reduction in the first quarter of 1965, after which deposits rose again slightly.

56. Table 8 shows that the composition of liquid assets has changed substantially.

Table 8. Accepting houses and overseas banks: composition of liquid assets

£mns.

	Balances with U.K. Banks	Money at Call	Bills	Local Authority Loans	Government Securities	Total
Sept. 1962	152	213	201	287	472	1,325
Dec.	194	280	195	290	475	1,434
Mar. 1963	175	234	211	316	496	1,432
June	225	254	203	329	530	1,541
Sept.	262	280	223	342	552	1,659
Dec.	301	299	207	329	544	1,680
Mar. 1964	269	288	263	427	533	1,780
June	292	329	234	488	524	1,867
Sept.	301	288	235	582	527	1,933
Dec.	336	285	192	458	514	1,785
Mar. 1965	288	215	208	539	524	1,774
June	320	235	192	482	514	1,743
Sept.	351	261	197	497	492	1,798

There has been little change in the levels of money at call, bills, and Government securities, which have consequently declined as a proportion of the total. Balances with other U.K. banks and local authority loans have both risen substantially, the former in line with the increases in deposits by U.K. banks. To a large extent this is inter-bank lending within the sector. Local authority loans increased very rapidly up to the third quarter of 1964, but were reduced sharply when foreign money was withdrawn in the crisis. They rose again in March 1965 (balanced by a fall in money at call and possibly associated with the increase in switching) but have fallen again subsequently. It is worth noting that the decline in Government securities from about 28% of adjusted deposits in September 1962 to about 18% in September 1965 accounts for most of the reduction in the ratio of liquid assets during the period; and, as stated in paragraph 5 above, while it is the total of liquid (and enchashable) assets which are important for monetary control the banks would probably not feel that their liquidity was unduly strained by a reduction in their holdings of Government

securities, though they would not, of course, regard their liquidity as entirely unaffected.

57. The growth of inter-bank lending has helped to prevent a further decline in the banks' apparent liquidity ratios because any increase alters their deposits and liquid assets equally. In examining the liquidity of the group as a whole this effect should be eliminated: only their net balances with other U.K. banks should be included in their liquid assets. Ratio (1) in Table 9 shows the effect of eliminating inter-bank lending on the ratio of liquid assets to adjusted deposits.

Table 9. Accepting houses and overseas banks: liquid assets: deposit ratios

£mns.

	Adjusted Deposits less U.K. Bank Deposits	Sterling Deposits less U.K. Bank Deposits	Liquid Assets less U.K. Bank Deposits	Liquid Assets less U.K. Bank Deposits and Switch	Ratio[1] (1)	Ratio[2] (2)
Sept. 1962	1,606	1,467	1,229	1,090	0.765	0.743
Dec.	1,677	1,527	1,303	1,153	0.777	0.754
Mar. 1963	1,736	1,578	1,314	1,156	0.757	0.732
June	1,816	1,658	1,375	1,217	0.757	0.734
Sept.	1,953	1,812	1,475	1,334	0.755	0.737
Dec.	2,005	1,863	1,452	1,310	0.724	0.703
Mar. 1964	2,165	1,996	1,569	1,400	0.724	0.702
June	2,337	2,120	1,638	1,421	0.701	0.670
Sept.	2,428	2,189	1,681	1,442	0.692	0.658
Dec.	2,365	2,098	1,519	1,252	0.642	0.597
Mar. 1965	2,429	2,085	1,524	1,180	0.627	0.566
June	2,448	2,186	1,475	1,213	0.602	0.554
Sept.	2,419	2,238	1,478	1,297	0.611	0.579

1. The ratio of liquid assets less U.K. bank deposits to Adjusted deposits less U.K bank deposits
2. The ratio of liquid assets less U.K. bank deposits and switch to sterling deposits less U.K. bank deposits.

This may be compared with the ratio including inter-bank lending shown in Table 6: the elimination of inter-bank lending increases the fall in the ratio between September 1962 and September 1965 from 12% to 15%.

58. The final column of Table 9 shows the ratio of net liquid assets to net sterling deposits, taking out of gross liquid assets not only the equivalent of the deposits by

other U.K. banks but also an amount equal to foreign currency deposits switched into sterling. This is equivalent to assuming that all sterling funds arising from switching are invested in liquid assets. (It is not suggested here that this is the case: indeed, it was argued above that the amount of switching would be influenced by the yield on advances. But it should perhaps be stated that this extreme assumption is consistent with the view that the amount of switching reflects the yield [covered or uncovered or both] on bills or local authority loans [or both]]). On this assumption the ratio of liquid assets to sterling deposits fell to a trough of just over 55% in June 1965, some 18% less than its level two years earlier. Excluding Government securities the ratio was as low as 32%.

59. It may be instructive to examine the position in June 1965 in more detail. At that time the accepting houses and overseas banks had net sterling deposits (excluding inter-bank lending) of £2,186 million and acceptances outstanding of £600 million. Liquidity ratios of a third against deposits and a fifth against acceptances imply that liquid assets should have been at £849 million (including only net balances with other U.K. banks). In practice, net balances with U.K. banks, money at call, bills and local authority loans amounted to £961 million, giving a margin of £112 million. But at that time the banks had switched £262 million of foreign currency deposits into sterling; the ratio of 'free' liquid assets to switch was therefore well under 50%. Some sub-groups of banks were less liquid than others – the American banks in particular appear to have been highly illiquid at that time, and to have carried out a very substantial amount of switching for employment in advances.

60. In summary, (working from Table 9), the net adjusted deposits of the accepting houses and overseas banks rose from £1,606 million to £2,419 million between September 1962 and September 1965. This was associated with a rise in their net liquid assets (including Government securities) from £1,229 million to £1,478 million – sufficient to permit an increase in deposits of over £320 million without any fall in the liquidity ratio. The balance of the increase in deposits, over £580 million, was associated with a fall of fifteen percentage points in the liquidity ratio, nine of which were due to the fall in the proportion of their asset portfolios represented by Government securities. By 1965 the liquid assets (excluding securities) of the group as a whole were at a rather low level, and some sub-groups of

banks seem to have been illiquid, particularly if regard is paid to the volume of switching.

(III) The domestic banks and discount market

61. Table 10 shows some items from a consolidation of the domestic banks and the discount market.

Table 10. Domestic banks[1]: deposits and liquid assets

£mns.

	Adjusted Deposits[2]	Liquid Assets[3]	Liquid Assets Ratio	Government Securities Ratio
Mar. 1963	8,021	4,276	0.533	0.234
June	8,341	4,588	0.550	0.222
Sept.	8,473	4,832	0.570	0.224
Dec.	8,898	5,226	0.587	0.219
Mar. 1964	8,546	4,570	0.534	0.216
June	8,783	4,740	0.539	0.203
Sept.	8,969	4,766	0.532	0.191
Dec.	9,123	4,875	0.534	0.194
Mar. 1965	8,890	4,201	0.472	0.193
June	9,254	4,633	0.500	0.191
Sept.	9,333	4,836	0.518	0.192

1. Domestic Banks plus Discount Market minus Bank of England Banking Department (excludes Bank of England advances to market).
2. Net deposits plus notes in circulation minus Bank of England advances to the Discount Market plus Deposits of other U.K. banks with Domestic banks (estimated).
3. As in Table 11.

With the exception of two points the consolidation is straightforward: Bank of England advances to the discount market have been excluded from deposits and an equal amount has been deducted from central Government debt; and balances with other U.K. banks have been deducted from deposits with other U.K. banks, on the assumption that such balances are held principally with other domestic banks. It should be noted that the term liquid assets is used in the same sense as elsewhere in this paper – it includes all forms of central Government debt and, in this case, special deposits with the Bank of England. The ratio of the total to adjusted deposits is consequently not directly comparable with the conventional 'liquid assets ratio' of the London Clearing Banks.

62. Adjusted deposits were about £900 million higher in 1965 than in the corresponding quarters of 1963, an increase of 11%. During the same period there was no significant increase in the level of liquid assets, and the ratio of liquid assets to adjusted deposits consequently fell by 6 percentage points comparing the March quarters and 5 percentage points comparing the June and September quarters. A reduction in the level of Government securities accounted for 4 points of this fall, the balance being due to a fall in the ratio of other (primary) liquid assets to adjusted deposits. On the March comparison this ratio fell by two points, which corresponds to the 2% fall in the conventional London Clearing Banks' liquid assets ratio which the Bank of England accepted in the autumn of 1963, and by 1 point on the June and September comparisons, reflecting the call for 1% special deposits in the spring of 1965.

63. Table 11 shows the composition of liquid assets. Central Government debt was lower in 1965 than in 1963 – by about £300 million in March and September and £200 million in June. Only part of this decline was due to the fall in Government securities, the rest being due to a considerable fall in Treasury bills partly offset by a rise in cash and balances with the Bank of England. Corresponding to the fall in central Government debt there was a rise in private sector debt, to which all the components contributed.

Table 11. Domestic banks: composition of liquid assets

£mns.

	Central Government Debt[1]	Securities	Money at Call[2]	Re-financeable Credits	Commercial Bills	Total Private Debt	Total Liquid Assets
Mar. 1963	3,522	1,872	251	54	449	754	4,276
June	3,788	1,856	269	57	474	800	4,588
Sept.	4,054	1,900	255	55	468	778	4,832
Dec.	4,407	1,952	246	57	516	819	5,226
Mar. 1964	3,716	1,852	252	56	546	854	4,570
June	3,863	1,785	232	58	567	857	4,740
Sept.	3,951	1,709	222	62	531	815	4,766
Dec.	3,920	1,769	230	64	661	955	4,875
Mar. 1965	3,199	1,720	275	66	661	1,002	4,201
June	3,608	1,769	274	69	682	1,025	4,633
Sept.	3,784	1,796	279	73	700	1,052	4,836

1. Includes: Balances with the Bank of England, Special Deposits, Notes and Coin, Treasury Bills, Government (and Government-guaranteed) securities – minus Bank of England advances to market.
2. Including money-at-call with other U.K. banks.

Money at call outside the market and refinanceable export credits both increased slightly (though the proportionate increase was quite substantial for the latter), and there was a rise of about £200 million in commercial bills – an increase of about 50% in two years. There is no doubt that part of this rise was due to the credit squeeze in late 1964 and 1965: in 1965 the level of commercial bills was running between 20% and 30% above the level in the corresponding quarters of 1964. But there was also a substantial increase in 1964, when monetary policy as a whole was much less clearly contractionary: the increase compared with 1963 was over 20% in the first two quarters, about 15% in the third, rising to 30% in the last quarter. And the increases in 1964 were a continuation of a longer-term upward trend. The evidence confirms the view that the value of commercial bills will expand in a credit squeeze; but by no means all of the expansion that took place in late 1964 and 1965 should be attributed to the credit squeeze. Indeed, over half would probably have occurred anyway. It is, of course, possible, that expansion would have gone further if the Bank of England had not taken action to limit the volume of acceptances and holdings of commercial bills; but it will be recalled that the liquidity of accepting houses and overseas banks was somewhat strained, and it is also possible that caution on their part would have limited the volume of acceptances.

64. In summary, between 1963 and 1965 the domestic banks increased their deposits by 11%, while at the same time they did not increase their liquid assets. The fall in the ratio of liquid assets to adjusted deposits reflected mainly a fall in the holdings of Government securities, though there was also a fall in the ratio of primary liquid assets in line with the change in the London Clearing Banks' minimum conventional liquid assets ratio, as modified by the call for special deposits. The falls in the ratios of Government securities and primary liquid assets to adjusted deposits were much less than the falls in the corresponding ratios for the accepting houses and overseas banks which accompanied their expansion in the same period. The reduction in the domestic banks' holdings of central Government debt was offset by a rise in their holdings of private sector liquid debt, partly reflecting long-run upward trends in these debt instruments and partly reflecting an expansion in the supply which was stimulated by the credit squeeze.

(IV) Conclusion

65. In paragraphs 38 to 43 changes in bank liquidity were divided into two components, one of which was independent of the strength of demand for private credit and the other of which reflected this demand. In Table 12, which shows a comparison between March 1965 and March 1963 an attempt has been made to classify items in this way. Changes which are independent of the strength of demand for private credit will be described as 'exogenous', whereas other changes will be described as 'induced'.

Table 12. Banking sector: changes in the supply of liquid assets March 1963 to March 1965

		£mns.
Exogenous		
Bank holdings of central Government debt	-271	
Less switch etc.	-243	
Central Government exogenous component		-514
2/3 of private liquid debt		157
Exogenous growth in local authority temporary money		120
Total exogenous change		-237
Induced		
Switch etc.		243
1/3 of private liquid debt		78
Induced growth in local authority temporary money		103
Total induced change		424
Net increase in liquid assets		187

66. The change in the central Government debt held by the banking system reflects the central Government's total internal borrowing requirements, the part that is taken up by non-bank holders (assumed endogenous) and a balance of payments effect, part of which is exogenous and part induced. The induced part is estimated by the change in the switch plus the increase in overseas holding of finance house deposits and local authority debt. Thus the central Government exogenous component is estimated as the change in bank holdings of central Government debt (minus £271 million) less the change in switch etc. (£243 million).

67. Private liquid debt and local authority temporary money also have exogenous components, since both show long-term upward trends independent of the private demand for credit. It will be assumed that two thirds of the increase in private liquid debt is exogenous (£157 million) and that the exogenous component of local authority debt is an increase of £60 million per year (£120 million). The total exogenous change is the sum of the central Government, private and local authority exogenous components – estimated at minus £237 million in all.

68. The induced changes are taken as the change in switch etc. (£243 million), one third of the increase in private liquid debt (£78 million) and the balance of the change in local authority loans (£103 million), making £424 million in all. This exceeds the net exogenous change by £187 million, which is, of course, the increase in total liquid assets over the period.

69. While the adjusted deposits of the banking sector as a whole rose by between 17% and 19%, the domestic banks' deposits rose by only 11% compared with a rise of about 60% in the deposits of the accepting houses and overseas banks. This differential growth took place despite the fact that the latter group maintained higher liquidity ratios in general than the former. However, both the liquid assets and the advances of the accepting houses and overseas banks are probably higher-yielding than those of the domestic banks, thus enabling the former to pay more for deposits and hence grow at the latter's expense.

70. For any single bank to grow it must attract deposits; for the system as a whole to grow it must attract liquid assets or make do with a lower ratio of liquid assets to deposits. It has already been shown that the exogenous decrease in liquid assets was more than offset by the induced increase. But the banks collectively were also content to see the proportion of liquid assets in their portfolios fall considerably. The major part of this fall took place in Government securities, which the banks do not usually regard as liquid assets,although their encashability is vitally important and they are similar to other forms of central Government debt from the point of view of monetary control. But there was also a fall in other liquid assets as a proportion of adjusted deposits, and the banks were doubtless to some extent constrained by liquidity considerations – the conventional ratios in the case of the domestic banks

and prudential considerations in the case of the others. Indeed, but for the growth of inter-bank lending the reduction in the proportion of liquid assets in the portfolios of some accepting houses and overseas banks might not have been allowed to go so far.

Economic Intelligence Department

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ADB

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