The Determination of the Volume of Bank Deposits: England 1955-56

I

The conditions determining the volume of bank deposits have been the subject of much attention in economic literature, particularly during the present century. Two circumstances, however, make a detailed restatement necessary. First, an eminent Italian economist has charged English economists — notably Keynes and Robertson — with error, at least in emphasis, in their neglect of the part played by the public in determining the volume of deposits. Secondly, there has been an important change in Enghish monetary institutions, a change which has deprived the cash-ratio of its usefulness as a major hinge in the argument. It has become necessary to re-state the matter in terms reflecting the behaviour of the English banking system in 1955-56 (1).

Professor Amedeo Gambino's criticism of the analysis which may now be described as the traditional English analysis is available to English readers in his article, *Money Supply and Interest Rates in Recent Macro-Economic Conceptions*, in No. 30 (September 1954) of the « Quarterly Review of the Banca Nazionale del Lavoro » (2). This article was prompted by, and is critical of, a recent article by Professor Erich Schneider (3), and in developing his criticism Gambino charges English economists, primarily Keynes and Robertson, with misunderstanding the influence of the public in determining the volume of deposits (4). The burden of his argument is that the public can vary its relative demand for cash, and that to assume away such variation in a *ceteris paribus* clause is to ignore a factor shown by his statistical analysis (for Italy and the U.S.A.) to be important. Schneider has made a further contribution, including a statistical analysis of recent conditions in Western Germany, in his article, *The Determinants of the Commercial Banks' Credit Potential in a Mixed Money System* (5). In the present paper I shall comment briefly, in the light of recent English conditions, on Gambino's insistence on the influence of the public in determining the volume of deposits, and I shall explain in some detail the influence of the English financial institutions as they currently operate (6).

II

A bank creates a deposit — *i.e.*, enters in its books a credit balance in favour of a customer — in return for any asset it accepts from another party, whether this asset is

(1) In the period 1939-51, and to some extent in 1932-39, the framework had already moved somewhat from that in which the supply of cash could be considered as the central governing factor; in 1951-54 there was further change, in that the system of supplying cash at a fixed price was qualified. Only in 1955 did the determining factors assume the form described in the present paper.

(2) See also his *La Copertura dei Depositi* (« Bancaria », Rome, 1952).

(3) *Interesse e Quantità di Moneta nella Teoria Economica della Formazione del Reddito.* « L'Industria », 1954, No. 1.

(4) In referring to followers of the tradition, Professor Gambino has (fn. 6 on p. 115) cited myself as « a typical case » and quoted a passage which he finds unsatisfactory. I accept his implication of vagueness. I plead that I was trying to give, in elementary terms, an explanation of the main factors in a system that was in process of change; and I offer the present paper in atonement.

(5) « Quarterly Review of the Banca Nazionale del Lavoro », No. 34, Sept. 1955.

(6) I emphasise that the account given in the remainder of this paper relates to current English conditions, which are certain to change — if experience is any guide, to change rapidly. In preparing this account, I have been greatly helped by Sir Dennis Robertson, Mr. R. F. Henderson, Prof. H. Johnson, Mr. W. T. Newlyn, Prof. B. Tew, Mr. R. Alford and others, who commented on an earlier draft.

cash, a government security, or the promise of a customer to repay a loan. Cash includes balances accruing to it through the bankers' clearing house, and the smaller is a single bank in relation to the clearing banks in total, the greater will be the proportion of its deposit-creation which is offered in return for accretions of cash as contrasted with the bank's lending operations; a full explanation of deposit-creation in a multi bank system has therefore to take into account the genesis of clearing-house balances, and this has been done in the classic accounts of Crick and others (7). In accepting cash, whether directly from a member of the public or through a favourable balance at the clearing-house, a bank is passive (8). [It was this passivity which used to make it difficult for bankers and others (including Edwin Cannan) to accept the doctrine that « banks create deposits »]. When cash comes to a bank through the clearing-house, there is usually a corresponding loss of cash by other banks, and corresponding reduction of deposits in other banks, so that no increase in the total of deposits arises (9). To this rule however there is an important exception: the banks as a whole may have a credit balance at the clearing-house, because the central bank has been acquiring assets — gold, foreign exchange, or securities. In this way the central bank creates cash, and the public adds to its holding of bank deposits an amount equal to the newly-created cash. The total of bank deposits can also be increased by the public's reducing its holding of cash (notes and coin); this kind of deposit creation (in which the banks are passive) has apparently been of great importance in post-war Italy, and Professor Gambino's complaint against English writers is essentially that they have ignored it, or treated it too lightly.

The proximate sources of increase in the total of bank deposits, referred to up to this point, may be summarised thus:

(1) The public may choose to hold less cash and more bank deposits;

(2) The banks may add to their earning assets, whether by the purchase of bonds or by making advances to customers;

(3) The central bank may purchase securities, foreign exchange, or gold, from the public.

Increases in deposits originating in (2) or (3) may eventually, through their effects on the liquidity of the economy, on spending capacity and so on the level of prices and money incomes, occasion some rise in the public's cash requirements. Unless additional cash is created by the central bank to meet this need, there must be some contraction in bank deposits; this second-round change in the volume of deposits is most unlikely to be as large as the initial increase in deposits. How important this repercussion in the banking system is, and how important the first of the three changes listed above is likely to be, both depend upon the importance of notes in circulation relatively to bank deposits, and upon the stability of the public's habits in the use of notes. If the public is accustomed to holding large amounts of notes as a store of value, and if savings deposits, an alternative store of value, are important in the banking system, substantial variation in the total of bank deposits can occur independently of any initiative on the part of the banks. Such a change could occur, for example, through the shrinkage of black markets, which notoriously prefer notes, or as the result of an increase of confidence in the banks. It could even be a symptom of increasing confidence in the value of money, notes being easier than savings deposits to use in the market whenever opportunity arises to acquire more stable assets than any kind of money. Since 1945 conditions in Italy have probably been particularly propitious for variations of these kinds, and the initiative of the public has according been peculiarly influential in governing the volume of bank deposits.

(7) W. F. Crick, *The Genesis of Bank Deposits*, « Economica », June, 1927 (reprinted on pp. 41-53 of *Readings in Monetary Theory*, A.E.A. Series, London, 1952). Cf. J. M. Keynes, *Treatise on Money*, vol. I, pp. 23-30.

(8) Banks need not be entirely passive: they may (as banks in most countries do) compete actively for savings deposits. As a matter of deliberate policy, the English banks refrain from such competition with other financial institutions.

(9) In this sentence and through the remainder of this section, « the banks » means the trading banks to the exclusion of the central bank.

Even in England the public's demand for notes relatively to other forms of money has shown appreciable fluctuations. The jump in the circulation, relatively both to bank deposits and to national income, between pre-war and post-war is well-known, as is the failure of the proportion to return to its old level: the change is to be associated with full-employment, which has allowed workers to establish the habit of continuous holding of comfortable cash balances. There was also a sharp relative drop in notes between 1947 and 1948, possibly to be associated with the diminution of certain black market activities. In the years 1951-55 the notes have once more gained in relative popularity; this may be associated with the stiffening of turnover charges levied by the banks on their customers, and perhaps with the rise in interest rates which has tended to restrain the growth of deposits (but not of notes) to match the rising national income (10). All these changes have occurred without disturbance to the banking system and have been scarcely noticed by anyone except the technicians directly involved, and this unobtrusiveness has been due to the ability and willingness of the English monetary authorities to neutralise these movements as well as the big weekly and seasonal movements in the public's desire to hold notes and coin. English economists can admit that their books have not discussed such situations and can allow that these situations have had more significance in the recent monetary history of certain countries; and they may still leave them aside — as I propose to do — as unimportant niceties when they proceed to analyse the current English position.

(10) I am indebted to Professor H. Johnson for the following figures:

NOTES AND COIN IN CIRCULATION
(including bank holdings)

Year	Lm.	% of True Bank Cash	% of Net Deposits	% of net Current Accounts
1938	442	198	19.7	37.3
1945	1,263	346	27.8	42.4
1947	1,361	296	25.0	38.9
1948	1,239	262	21,7	33.9
1951	1,291	261	21.8	33.4
1955 (First 8 months)	1,640	320	26.4	42.7

III

In current English circumstances, the volume of deposits depends upon the actions and reactions of four parties:

(1) The Bank of England acting in conjunction with the Treasury and various government « funds »; these, following current English usage, I shall refer to as « the authorities ».

(2) The London clearing banks; these I refer to as « the banks ».

(3) The discount houses.

(4) The public, including banks outside the clearing (« the outside banks ») and all other financial institutions (11).

The assets and liabilities of these four parties have, for this purpose, to be classified into:

(a) Cash.

(b) Treasury bills and government bonds short enough to be held by the discount houses.

(c) Call Loans by the banks to the discount houses.

(d) Government bonds held by the banks in their investment portfolios, but too long to be held by the discount houses (5-years is the present dividing line).

(e) Bank deposits.

(f) Bank Advances.

(g) All other assets.

(a) Cash is a creation of the authorities, and is held by the banks (as an 8% «reserve» against deposits), and by the public, but not by the discount houses.

(b) Treasury bills and other money market assets are held not only by the discount houses, but also by the banks and by the public. Assets in this class are created by the authorities; by selling them to other parties, the authorities destroy cash, and *vice versa*.

(11) These outside banks include the Scottish banks. In view of the differences between these banks and the London Clearing Banks, Scotland is for our present purpose to be regarded as separate from England (in which I include Wales); Scotland is in fact an inner Sterling Area country.

(c) Only the banks (as creditors) and the discount houses (as debtors) are directly concerned with Call Money.

(d) Bonds having more than 5 years to run to redemption are not held by the discount houses (with an unimportant qualification); their distribution between banks and the public is variable, though the banks have inhibitions affecting their dealings in these securities, particularly those which are long-dated. The authorities both buy and sell, creating or destroying cash as they do so.

(e) Bank deposits, liabilities of the banks and assets of the public, are not held significantly either by the authorities or by the discount houses.

(f) Advances by the banks to their customers are assets of the banks, liabilities of the public.

(g) All other assets include all other forms of wealth, including securities [other than those classed under (b) and (c) above], real estate, goods, etc.

In tabular form we may summarise as follows (L standing for Liability, A for Asset):

	Authorities	Banks	Discount Houses	The Public
Cash	L	A	—	A
Bills and short bonds . . .	L	A	A	A
Call Money . .	—	A	L	—
Medium and long bonds . . .	L	A	—	A
Bank Deposits .	—	L	—	A
Bank Advances .	—	A	—	L

« All other assets », (g) above, are excluded from this table as, with unimportant exceptions, the three monetary bodies (Authorities, Banks, and Discount Houses) are not involved.

Certain minor complications have been ignored:

(1) The Bank of England has some private customers, and therefore has deposit liabilities to the public and makes advances to the public.

(2) The banks hold a small proportion of bonds (*e.g.* public utility bonds) other than their U.K. government bonds, among their « Investments ».

(3) The banks and the discount houses, as well as outside banks included in « The Public », hold small amounts of ordinary bills of exchange.

(4) The discount houses draw some call money from outside banks and other financial institutions here included in « The Public ». This « outside money » may amount to as much as one half of their total call money, and its movements are important to the discount market though not to the main purpose of the present study.

(5) Some call money may go to stock jobbers, who are included in « The Public ».

The « outside banks » — *i.e.* those not members of the London Bankers' Clearing House — also have some deposit liabilities to the public and make advances; nevertheless they are not, in the following analysis, treated as banks, but are included along with other financial institutions in « The Public ». This does not mean that their behaviour has no monetary significance; on the contrary, like other financial institutions and like individuals they may affect the situation by changing the liquidity distribution of their assets. They are excluded from the category « the banks » because the London Clearing Banks alone follow the fairly rigid liquidity rules described below, and the weight of these domestic banks, operating according to the these rules, renders them predominant in the determination of the volume of banks deposits which is perhaps the most important single factor operating on the liquidity situation of the economy.

Subject to the qualifications referred to in Section II above (12), the volume of deposits depends upon the action of the banks in acquiring (or disposing of) earning assets. The assets that can ordinarily be depended upon to yield additional income at the highest rates are advances to customers and government bonds; among the latter, the long-term and medium-term bonds must normally be regarded as the most dependable earners (13).

(12) I refer to the authorities' operations in securities as well as shifts in public preferences between cash and deposits.

(13) Short-term rates can be, and sometimes are, higher than yields on long-term securities, but in ordinary circum-

Provided that attractive opportunities to add to the total of these assets exist, the banks will in fact add to them — and so to the volume of deposits, whenever they feel able to reduce the proportion of their more liquid assets. This gives us four relevant factors:

(1) the banks' opportunities to lend to customers;

(2) the banks' view of the bond market;

(3) the conventions about liquidity ratios;

and (4) the supply of liquid assets for the banks.

Until 1951, and only in less degree until 1955, the banks had for a long time been so glutted with liquidity that they felt under no compulsion, other than the qualitative control imposed by official requests, to refuse to lend to good banking borrowers. In the early post-war years, indeed, the pressure of liquidity was so strong that the banks tended to broaden their notions of what constituted a good banking borrower, and they also tended — at least between each of the various reiterations by successive Chancellors — to broaden their interpretation of what lending was conformable with government requests. Under these conditions, the total of Bank Advances was essentially demand-determined, subject to an underlying tendency, originating on the supply side, to grow as the years went by. Bank Advances grew, that is to say, both because the highly liquid banks welcomed with open arms the increasing demand and because, in their anxiety to lend more, they broadened their views about what was eligible business. Even when liquidity considerations early in 1955 checked the growth of Advances-plus-Investments, the banks still wished, for profit and goodwill reasons (14), to continue to meet the expanding demand for Advances. Their wish to do this was so strong that they were willing to sell securities in order to meet the rising demand for Advances, and they might well have continued to follow this course, even at the price of forcing bond prices down against themselves, if the authorities had not in July stepped in with their *fiat* restricting Advances (15). At the beginning of 1956 the position is that the banks are under official compulsion (notwithstanding the absence of statutory direction) to reduce the total of advances.

During the years of excess liquidity, while the banks were disposed to increase their Advances whenever reasonable opportunity offered, their attitude towards their holdings of government bonds was somewhat different. The income that could be drawn from these securities was attractive, though appreciably lower than that on Advances. On the other hand, owing mainly to certain accounting conventions, the banks were fearful of capital depreciation if, as seemed likely, rates of interest rose appreciably within the lifetimes of the bonds. Given these conflicting considerations, the tendency of English bankers after the failure (1947) of the Dalton experiment, and while their liquidity continued to be abnormally high, was to hold their investment portfolios more or less stationary in absolute amount. They did tend to shorten somewhat the average life and, contrary to earlier traditions, to divest themselves entirely of undated stocks; these changes were however changes in the composition rather than in the size of portfolios. In these circumstances the attitude towards bonds was a factor tending to hold the aggregate of deposits where it was, and the only important factor making for change in this aggregate was the growing demand for bank advances (16).

In the autumn of 1951 the banks were submitted to a forced funding operation: this simultaneously jerked their investment totals

stances this can occur only when there is expectation that short-term rates are going to fall. Even in this case the long bond is likely to be preferred as an income-earner, the short being preferred only if the bank wishes to maintain its liquidity. Professor Tew has reminded me that theoretically long-term assets could be so scarce in relation to investors' preferences that the long-term rates could be forced below the short rates.

(14) Advances normally yield appreciably higher interest rates than do government securities, and the banker's willingness to lend to his customers is a very important element in the goodwill that maintains the volume of his business generally.

(15) This point was suggested to me by Mr. R. F. Henderson in his comments on my earlier draft.

(16) During part of this period (1947-51), the authorities somewhat reduced the supply of Treasury bills. This movement was not large enough to remove all the surplus liquidity of the banks, and was therefore not a restraining factor, but it did mean that total deposits rose rather less than total advances rose.

up and eliminated most of the remaining excess of liquid assets. The accompanying changes in monetary policy forced long-term rates of interest up, but forced the short rates (including the rates on bank advances) to rise even more, so that the relative attractions of bonds as bankers' assets were greatly reduced. In these circumstances the bankers were shaken out of their unwillingness to change their investment totals, and notably in the first half of 1955 considered the bond portfolios much more readily compressible than the total of advances.

IV

In the previous section we have seen how in the years before 1951 the attitudes of the bankers towards both investments and advances were highly coloured by the abnormal liquidity of those years, and that in both directions they have been compelled to be more restrictive since liquidity declined. We must now become precise about the liquidity of the banks, and explain the conditions in which the banks are forced by insufficient liquidity to restrict their totals of investments and advances. Two « liquidity ratios » have to be considered: the cash ratio and the liquid assets ratio.

Since 1946 the cash ratio has been held, on a weekly basis and avowedly without window-dressing, at 8 per cent (17). The liquid assets ratio, though loose forms of it have a long tradition behind them, has become an accepted rule only in the last quarter of a century, and an acknowledged rule only in the last few years. Indeed, it is believed that it became a matter of official guidance only in 1955. It remains less rigid, in the sense that a considerable seasonal variation is tolerated (18), and the level appropriate to any particular season is not put at a precise figure parallel to the 8 per cent for the cash ratio. The position is broadly that the seasonal minimum (in the first quarter of the calendar year) (19) must not fall below about 30 per cent: hence common reference to it as « the 30 per cent ratio ». In current conditions it is this 30 per cent rule and not the conventional cash ratio which appears the limiting factor in the creation of bank deposits.

The cash ratio has lost its former sharpness as a controller of the supply of money because for many years now the Bank of England has more or less automatically kept the market supplied with just that amount of cash required to maintain the banks' cash ratios at 8 per cent of their deposits, and both banks and discount houses have become less sensitive to the appearance of a shortage of cash. The cash-creating function of the Bank of England has lost something of the purely mechanical quality it had from 1940 to 1951; but it has not gone back to the traditional practice of gold-standard days. Cash is required for the public and for bank reserves; none is held by the discount houses, but these form the channel through which the banks keep themselves supplied with sufficient cash to maintain their reserves at the agreed 8 per cent of deposits. The Bank of England always provides just enough cash, one way or another, to allow the discount houses to balance their book (*i.e.* to have zero cash after borrowing all they can from the banks). And everybody knows that, because the banks must have the cash, it will be forthcoming. No sense of strain in the cash position develops to the point of directly provoking a restriction of credit.

In gold standard days of long ago, the system was different in several respects. The banks' cash ratios were compressible (especially with the help of window dressing) (20) so that a decline in cash relatively to deposits did not immediately bring into operation the lender of last resort. On the other hand, pressure severe enough to force resort to the lender of last resort was viewed much more seriously, partly because it was evidence of extreme shortage and partly because the behaviour of the lender of last resort was known to depend on the state of its gold reserve. And when the market took a serious view of the situation, it had one method of restricting credit in its own hands: it would reduce the amount of bills of exchange it was willing to discount (Bills of exchange, drawn by traders for financing trade in goods, were then a large proportion of the bill market's portfolios). The banks — at least those in the City of London — would also be scared into measures of restraint. This is a highly simplified picture, and it is a long time since conditions were at all close to this; but it will be apparent that in such conditions the cash base was a very important factor in direct regulation of the state of credit. Gradually conditions have changed, in more ways than one (21), and in the years 1940-51 resort to the Bank of England became so completely innocuous for everybody that shortage of cash ceased to have any power directly to influence the state of credit.

The position in 1955-56 is in this respect little different from that of the preceding years. The cash ratio is virtually incompressible and variations in the cash supply are continuous, so that the Bank of England is constantly having to operate. But whereas in 1940-51 the Bank of England operated only « at market rates » through its operator in the market (« the back door ») it now reserves the right to, and frequently does, close the back door so forcing the discount houses to borrow at Bank Rate, in its Discount Office (« the front door »). By the extent to which it forces the discount houses to come to the front door, the Bank influences the level of market rate in relation to Bank Rate; thus by fixing Bank Rate and by its market operations the Bank virtually fixes the level of market rates (22). If it wants market rate to rise, it relieves the market less frequently through the back door so that the penalty Bank Rate is more frequently imposed (23) and if necessary the Bank raises Bank Rate itself. In these conditions the Bank of England remains, as in 1940-51, passive in deciding the amount of cash: the cash is simply fitted to the total of bank deposits coupled with the requirements of the public for circulation. The Bank does, however, in effect fix the terms on which just the required amount of cash gets into the market. The consequent behaviour of the market rate for Treasury bills influences the attitude of the banks and the public towards bonds (24). A tendency of market rate to rise is likely to encourage a bearish attitude all round. If this results in a fall of bond prices without any redistribution of holdings, there is no effect on the volume of bank deposits. If, on the other hand, the banks reduce their portfolios by sales to the public, deposits are reduced by that amount (25), and there will be a release of cash (equal to 8 per cent of the fall in deposits) by the banks to the discount

(17) Mr. E. Nevin has shown, in an unpublished paper, that there is still a small swelling of the cash-ratio in the banks' statements; the bankers continue to insist that this is not intended.

(18) The seasonal variation in the liquid assets ratio is akin to the tolerated daily variation in the cash ratio; the latter variation does not appear in the published statistics because the monthly statements refer always to Wednesdays.

(19) This well-known seasonal movement is due to heavy collection of taxes during January and February of each year.

(20) Other factors responsible for the compressibility of the cash ratio were the absence of any officially-agreed view and the greater weight of « outside banks » in the market.

(21) The great decline in the use of bills of exchange is an important part of the story.

(22) The Bank can of course ease the process of getting market rate to the level it desires, by giving some indication to the discount houses. It is understood that in present circumstances the Bank does not actually tell the market what it thinks the rate should be.

(23) It is perhaps necessary to add that the Bank of England's task in estimating the market's position (a necessary preliminary to the step of forcing its view on the market) is by no means easy. Besides internal movements of cash, which can be quite erratic, international movements of funds into and out of London can obscure the situation of the market.

(24) These terms can theoretically influence the size of the portfolio (bills *plus* bonds) held by the discount house. This influence is not important at present, because the discount houses, making a running profit on bills, hold as large a total as they can finance, while they are unwilling to add to their bonds (from fear of future losses) and cannot afford to accept the realisation of present book losses by selling bonds; the size of their portfolios is moreover limited by relation to their own capital resources, on a scale sanctioned by the Bank of England. In the old conditions, a movement of rates (and particularly resort to borrowing at the Bank of England's penalty rate) could have big effects on the discount houses' portfolios, which then consisted of commercial rather than government paper.

(25) As Mr. R. F. Henderson has pointed out to me, the repercussion of the assumed fall in bond prices on the markets for bonds and shares is likely to be more complex, and the effects upon the volume of deposits also more complex, than is assumed in the above paragraph. There I have assumed that the bonds sold by the banks are purchased by the public in exchange for deposits; but the fall in stock exchange prices is likely also to cause firms who were about to make issues of share or loan capital to defer their issues, financing themselves meanwhile by prolongation of their borrowings from the banks. To the extent that this happens (and there are other possible variants) the banks will in effect have exchanged bonds for advances, among their assets, and the deposits will not fall; only when the firms succeed in making their issues and repaying their bank advances will deposits fall.

market, which the Bank of England must mop up if the market rate of discount is to be held at its new level. The borrowing public may also be affected by a change in market rates of interest — both bill rates and rates charged on bank advances (« overdraft rates »); to the small extent that this occurs, rates further influence the total of deposits.

Thus the amount of cash created by the Bank of England is a passive element in the situation, though the terms on which it is made available can have repercussions on the volume of bank deposits. The system works not by a volume of bank deposits and of cash being determined as desirable, but rather by the authorities' choosing a structure of interest rates and making the cash fit that structure (26). Their power over the cash position is of course the sanction that makes the enforcement of a given structure of interest rates possible: in this sense the traditional analysis is sound as ever.

V

Because it is always held at or very close to 8 per cent, the cash ratio goes virtually ignored in most current discussions of the banking position. The liquid assets ratio appears now to be regarded not as the secondary but as the primary liquidity ratio; it is by forcing this ratio down towards the critical 30 per cent figure that the authorities have lately forced the banks to reduce their total of investments and advances. The next stage of our analysis must therefore reveal what circumstances tend to raise or depress the volume of liquid assets held by the banks; since the banks can always turn bills or call money into cash, or *vice versa*, it is their total of bills and call money that we have to regard as the crucial factor. (The distribution of the total between bills and call money is irrelevant for our purposes: call money simply represents bills held at one remove).

If the liquid assets of the banks are to be reduced, there must be:

either (1) absorption of Treasury bills and/or short bonds by the public, in replacement either of matured bills formerly held by the banks, or of bills or bonds held by the discount market;

or (2) use by the authorities of receipts from the public to pay off Treasury bills and/or short bonds.

Each of these courses involves reduction of bank deposits and the banks' liquid assets by equal absolute amounts, implying a reduction of the ratio liquid-assets/bank-deposits.

To induce (1) — the absorption of short government paper by the public — the authorities can force up the market rate of discount on Treasury bills and the yields on short bonds, by forcing the market into the Bank more frequently or by other hints to the market. The relationship of these short interest rates to the bankers' deposits rate is the relevant factor here. Until 1954 the deposit rate was little below the other short rates, and shifts from time deposits to bills and bonds were unimportant; since 1954 the bill and bond rates have been seriously competitive with the deposit rate for temporarily idle funds of large corporations. This mechanism hinges, it should be noted, upon the bankers' current agreement upon a single deposits rate that is, for good reason, substantially below Bank Rate (27).

For method (2) above — net redemption of Treasury bills and/or short bonds by the authorities — the authorities must in some way obtain disposal of deposits owned by the public. They can achieve this by running a surplus on current account (taxation exceeding government expenditure), or by depleting gold or foreign exchange reserve, or by selling long bonds to the public. The first and second of these normally occur as the result of other government policies — current policies on taxation and expenditure, and the exchange rate — decisions on which will normally be taken without regard to short-run effects upon the money market. The third course — the « funding » of National Debt — can also be followed for reasons independent of short-run money market effects, but in the inflationary world in which we live the tendency is to fund debt primarily for the purpose of reducing the liquidity of the economy.

When deposits are in any of these ways put into the hands of the authorities, the banks find their total of liquid assets depleted by the same amount as their total deposit liabilities are reduced. Initially this fall in liquid assets occurs through a transfer from « Bankers' Deposits » to « Public Deposits » (*i.e.* government balances) at the Bank of England; but banks immediately redress the extraordinary scarcity of cash by operations in the discount market, whereby the banks restore their 8 per cent cash ratio. They do so, however, at the expense of their proportions of bills and call-money: the fall in the total of liquid assets of the banks remains equal in absolute amount to the fall in their deposit liabilities to the public. The liquid-assets ratio is thus reduced.

When, by the operation of any of these factors, the banks find their liquid-assets ratio reduced to a level regarded as uncomfortably low, having regard to the season of the year, they have to take steps to redress the position by reducing their investments and/or their advances. These operations themselves reduce the volume of deposits. The upshot of the efforts by the authorities is therefore a multiple reduction of deposits: the reduction which occurs as the authorities absorb deposits in exchange for taxation liabilities, foreign exchange, or bonds, and the secondary reduction due to the banks' reactions to the decline in their liquid-assets ratio. If at the outset the ratio was already at 30 per cent, and the banks re-establish that ratio, the total fall in deposits must (ignoring certain minor repercussions) equal ten-thirds of the initial government surplus, depletion of exchange reserves, or sale of bonds to the public.

VI

To summarise, we may list the factors most directly relevant to the determination of the volume of bank deposits:

1. The level of prices and the volume of business activity.

2. The public's inclination to hold cash.

3. The public's inclination to use bank advances.

4. The banks' willingness to make advances (in the sense of the standards they require of borrowers).

5. The banks' willingness to hold bonds.

6. The banks' ideas about the proper ratio of « liquid assets » to deposits.

7. The banks' ideas about their cash ratios.

8. The public's willingness to hold bills and bonds.

9. The government's budgetary position.

10. The government's foreign-exchange policy and the resultant changes in exchange reserves.

11. The inclination of the authorities to fund or unfund debt (strictly, to lengthen or shorten the average life of outstanding dated securities).

12. The authorities' willingness to create cash, and the price at which they make the marginal requirements of cash available.

Of these factors, 9, 10, 11 and 12 are all matter of direct decision by the authorities, though 9 and 10 normally, and 11 sometimes, are settled by reference to circumstances other than effects upon the monetary situation. It is within the power of the authorities to act directly on 4, as they have done ever since the war, and especially in 1955-56; it is also within their power to act directly on 5, as they did in 1951 and 1952. They can also decide 7, as they have done since 1945, and 6, as they are understood to do in 1955-56.

This leaves 1, 2, 3 and 8 as the factors upon which the authorities cannot operate directly; but all these, and sometimes 5 and even 4 as well, are subject to influence by the structure of interest rates, which the au-

(26) This is not one of the eternal verities. There is nothing but their own choice to prevent the authorities from working things the other way round: *i.e.* they could choose the cash base and total of deposits and allow interest rates to fit themselves to those quantities. In so far as the authorities are now fixing the total of Advances, they are limiting their freedom to influence the structure of interest rates.

(27) The rate at which the discount houses will discount good bills of exchange must ordinarily be below Bank Rate; this sets a limit to the extent to which bank overdraft rates can be above Bank Rate; and the banks must, in order to make their living, have a sufficient margin between their deposit rate and their overdraft rates.

thorities can influence in a number of ways, especially by their decisions on 11 (debt-funding) and 12 (Bank Rate and discount-market policy). To influence is not to determine, and the authorities have to accept a certain independence in the determination of prices, economic activity, public demand for liquidity, and so on; the options open to the authorities are limited by such conditions. The authorities may choose the general level of interest rates, and the structure of rates, and the more effective is their control over financial institutions, the wider is their range of options, particularly in choosing a structure of interest rates. But in making these choices they are depriving themselves of the choice of the level of deposits and the maturity-distribution of the government debt. Alternatively, they may choose the level of deposits and the maturity-distribution of government debt and leave interest rates to take care of themselves. That the authorities can choose interest rates or the supply of money but cannot choose both independently of each other, is a conclusion familiar enough and, unlike the descriptive paragraphs of this paper, is one of the eternal verities.

Which they should choose — which way they should work — is of course another question. Mr. Newlyn has recently suggested that the important choice is that of the supply of money, by which he means the total of deposits plus cash in circulation (28). There is evidence that during 1955-56 the immediate objects of choice have been a certain level of short interest rates and an appreciable compression of the total of bank advances, leaving the total of deposits, and perhaps also the levels of longer interest rates, to take care of themselves. In this limited sense the public rather than the authorities at present chooses the volume of bank deposits, but it is not a useful sense, and the process certainly cannot be called a « determination » of the total of deposits by the public.

R. S. SAYERS

(28) See his articles, *The Credit Squeeze in the Light of Basic Principles*, « The Bankers' Magazine », Oct. and Nov, 1955, London.