Bank of England

Discussion Papers

No 47

Monetary aggregates in a changing environment : a statistical discussion paper

March 1990

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This paper has been prepared by Juliette Healey and Colin Mann of the Financial Statistics Division and by Roger Clews and Glenn Hoggarth of the Economics Division. They have received assistance and comments from many others in the Bank and from HM Treasury.

The object of this series is to give a wider circulation to research work undertaken in the Bank and to invite comment upon it ; comments on this paper should be sent by the end of May 1990 to :

The Monetary Aggregates Group
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Issued by the Economics Division, Bank of England, EC2R 8AH to which requests for individual copies and mailing list facilities should be addressed; envelopes should be marked for the attention of the Bulletin Group. *(Telephone: 01-601-4030)*

ISBN 0903314 50 9
ISSN 0142-6753

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MONETARY AGGREGATES IN A CHANGING ENVIRONMENT: A STATISTICAL DISCUSSION PAPER

1. Introduction: the objectives of the paper

Given the central role of monetary policy itself, the monetary aggregates in the United Kingdom are statistics of great importance. This year's *Financial Statement and Budget Report* reaffirms the significance that the government attaches to the evidence of the monetary aggregates in assessing monetary conditions. It goes on to explain that in a rapidly evolving financial system, the coverage and presentation of the monetary statistics must adapt to keep pace with the changes in the markets.

The Bank is keenly aware of these developments. A note in the August 1989 *Quarterly Bulletin* (pages 352-53) dealt with the consequences for the monetary statistics of the Abbey National's conversion to banking status. But it also noted, more generally:

'In addition to the conversion of the Abbey National, other developments such as new products introduced in recent years by banks, building societies and other financial institutions, and the changes in regulations for sterling commercial paper and other sterling capital market issues announced at the time of the 1989 Budget, call for a re-examination of the definitions of the broader monetary aggregates.'

'Given the alterations to the statistics caused by the Abbey National conversion, now seems to be an appropriate time to take stock of these issues. The Bank is embarking upon a study of the arguments in principle for making definitional changes. When the study is complete, a paper will be published in the Bank's "Discussion Papers" series, and comments will be invited from interested parties.'

Not all of the monetary aggregates need to be reviewed in this way. In particular, changes in the financial system have not so far had implications for the statistical definition of M0 - broadly, the domestic monetary liabilities of the monetary authorities

themselves. (It is, of course, true that the velocity of M0 has not been constant: it has grown relatively steadily for many years reflecting advances in the payments technology. But this is a different point.) Nevertheless, financial innovation has impinged on most of the other aggregates and a review is therefore timely.

The present discussion paper fulfils this remit. But it is important, before any changes to the presentation of the aggregates are made, to take into account the views of other interested parties. To this end, the Bank would appreciate comments, in writing, by the end of May, addressed to:-

The Monetary Aggregates Group
FSD BB-1
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The Bank would be particularly interested to know whether respondents agree with the consultative proposals set out at the end of the paper or, if not, what alternatives they would prefer. More general comments would also, however, be welcome.

The practicalities of statistical collection must also be recognised. Categories which banks and building societies find hard to identify or expensive to report are unlikely to be practical.

Organisation of the paper. The material in the rest of this discussion paper is set out along the following lines:-

Section 2 discusses the definition of money and the criteria which the monetary statisticians can employ to help organise the data;

Section 3 considers the narrower aggregates, non-interest bearing M1 ('nibM1') and M2, in detail. It also discusses alternative measures of narrower money: in particular, a personal sector aggregate, a 'retail' aggregate and a Divisia index aggregate of money assets;

Section 4 re-examines the definition of the broad monetary aggregates M4 and M5. But it also looks at the implications of recent developments - both domestically and internationally - for the way in which liquidity is best measured;

Section 5 draws the threads together by listing a set of provisional conclusions and proposals for the future presentation of the monetary aggregates. These will form a core for the consultative process over the coming weeks.

2. The definition of money

Generally, the monetary authorities are interested in the behaviour of money, not because it is significant in itself but because of the relationship between monetary growth, the volume of economic transactions and the rate of inflation. That suggests that the role of money as the medium of exchange would be a particularly important point for the formulation of the monetary aggregates.

This is a good starting point, but unfortunately, matters are not so simple. First, what constitutes the medium of exchange, or means of payment, is largely a matter for the transactors concerned. Payments techniques have changed over time as new assets or liabilities have come to be accepted as media of exchange (bank notes, chequable deposits, credit available through the use of credit cards etc). Second, because transactors hold the medium of exchange for future use, other assets which are not themselves usable as media of exchange will nevertheless be close substitutes, if, for example, they are of short maturity so that they will be transformed into the medium of exchange in the near future (eg bank time deposits due to mature) or if they can easily be so transformed with little risk of loss. In a modern economy with an advanced financial system, there is a spectrum of assets from those which are clearly transactions money, through those which are liquid in one way or another, to those (eg real assets with a specialised use) which are clearly very illiquid, but which can even so form the security for a loan.

Official estimates of the money stock have been published since 1966. The earliest definition of 'the money supply' was a broad one covering notes and coin held by UK

non-banks, and deposits (in both sterling and foreign currency) held by UK residents with banks in the United Kingdom. From 1970 onwards this definition has been amended and supplemented on a number of occasions, reflecting both developments in the financial system and in policy. But it has always been recognised that 'any definition of the money supply is arbitrary' *(Financial Statistics: Notes and Definitions,* April 1966). Elements in these redefinitions have been:-

(i) **The sector of the issuer.** Monetary aggregates in this country have for the most part been defined in terms of the institutions whose liabilities are included. Thus, apart from notes and coin, early definitions of money consisted solely of the liabilities of banks. Within this overall definition, attempts to measure narrow money included in the early 1970s a short-lived M2 which treated deposits with deposit banks and discount houses as more 'money-like' than deposits with other banks. As deposit banks and other banks began to compete more closely this distinction was however soon seen to be no longer worth making. Later, as building societies came to offer services to their depositors more like those of banks, other aggregates were introduced, including M4, which also covered liabilities of the societies. The government has always issued liabilities (other than notes and coin) with some of the characteristics of money - such as Treasury bills - and even some liabilities of the private sector (other than banks and building societies), such as bank-accepted bills, also share some of these characteristics and are included in the broad aggregate M5. Recent changes in the regimes for commercial paper and short bonds also make it desirable to consider afresh the scope of the broadest monetary aggregates;

Aggregates defined in terms of a particular set of institutions have the advantage that they can be analysed in the context of these institutions' consolidated balance sheets, an important element of the 'counterparts' analysis.(1) But they obviously rely on there being at any one time a well-defined set of institutions whose principal liabilities can be considered to be distinctly 'monetary';

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(1) See section 4.2.4.7 below.

(ii) **The sector of the holder.** Public sector deposits have in the past been included in some measures of money but were excluded from March 1984 onwards, on the ground that although they fluctuated widely from month to month they had no influence on economic developments. Although the main monetary aggregates are confined to holdings by UK residents, a wider sterling aggregate which included net sterling deposits by overseas residents with UK banks was presented in 'External flows and broad money' (*Quarterly Bulletin*, December 1983). Money supply measures in some other major countries include holdings by non-residents as well as residents;

(iii) **The currency of the asset.** Since 1977, the sterling elements of the broad aggregates have been the main focus of attention. But supplementary definitions, including foreign currency deposits in the UK of UK residents, have been provided (M3c in the past and now M4c);

(iv) **The terms on which deposits are held.** This has proved a difficult criterion. At any one time, assets within the various published monetary aggregates may offer the holder a range of services, such as a convenience as a means of exchange, liquidity, nominal capital certainty and, for all but the narrowest measures of money, payment of interest. Moreover, as a result of increased competition in the relevant markets the range of services provided by any particular deposit has tended to increase over time and this has confounded attempts to distinguish narrower aggregates on the basis of the services provided by particular deposits. M1, defined as notes and coin and sight deposits with banks, represented such an attempt. However, this strict definition of money excludes other means of exchange or the ability to create them. Possession of a balance on time deposit or access to overdraft facilities may also allow a purchaser to draw a cheque, although in practice it is difficult to measure this additional means of making payment. It is worth noting, however, that most of UK non-banks' sterling time deposits at UK banks are of very short maturity; just over 70% are under 8 days residual maturity. More fundamentally, since some banks and building societies now offer interest-bearing sight deposits and high-interest cheque accounts, some sight deposits may be held, at least in part, for savings rather than transactions purposes.

If an aggregate is defined in such a way that the sectors of the issuers [(i) above] and of the holders [(ii) above] are mutually exclusive then:-

(a) Flows which contribute to the growth of the aggregate pass over a sectoral boundary, and therefore appear in the sectoral flow of funds accounts;

(b) Flows which do not pass over the relevant sector boundaries do not contribute to the growth of the aggregate. For example inter-bank claims remain within the banking sector, and banks' holdings of deposits with other banks do not form part of such an aggregate.

Some changes or potential changes to monetary aggregates can be viewed in this light. Thus:-

(c) The exclusion of deposits held by the public sector from the monetary aggregates can be seen as compatible with the treatment of the public sector as an issuer of notes and coin;

(d) In the construction of M4, building societies become 'issuers' of the aggregate, and flows between the banks and building societies become 'intra-sector' items, to be excluded from the aggregates if possible. It becomes sensible to produce consolidated accounts for the banks and building societies (see Table 19.7 of the statistical annex to the *Quarterly Bulletin*).

(e) When aggregates are constructed across national boundaries (eg a world-wide sterling aggregate) the treatment of institutions abroad issuing liquid sterling liabilities has to be considered. Are they part of the 'holding' sector, to be consolidated with other holders at home and abroad, or part of the 'issuing sector', so that interbank claims between banks at home and abroad are excluded from the aggregate?

3. Narrow money

As noted in the Introduction, developments in the financial markets have not so far given rise to a need to reconsider the definition of M0. But the other narrow

aggregates have been affected by these developments in more or less degree. This section discusses the problems with the current definitions of nib M1 and M2, as well as problems in measuring transactions balances more generally. It examines the case for alternative measures of narrow money, including a Divisia index, and ends with a list of options with respect to M2.

3.1 Non-interest-bearing M1 ('Nib M1')

3.1.1 The definition of nib M1

Nib M1 consists of notes and coin in circulation plus non-interest-bearing private sector sterling sight deposits with banks. It has been published as a narrow monetary aggregate since the early 1980s.

3.1.2 Problems with the current definition of nib M1

Non-interest-bearing deposits with banks continue to be published as a separate series. (Building societies do not take non-interest-bearing deposits.) However since the introduction of interest-bearing current accounts by the large retail banks early in 1989 there has been a major shift by depositors into these new accounts and a corresponding decline in nib M1. It seems likely that this process will continue, and it will be important to be able to follow its progress. Nevertheless, now that the close connection between transaction deposits and non-interest-bearing deposits has been broken, nib M1 no longer has any very clear relationship with developments in the economy at large.

3.2 M2

3.2.1 The definition of M2.

M2 (in something like its current guise) was introduced in the June 1982 Bulletin (page 224). It was not intended to be restricted to the liabilities of any particular institutions; it was rather to be based on 'economic criteria'. Its purpose was set out very clearly: 'the object was to design a new measure which could be expected to be more directly related to transactions in goods and services than £M3, and somewhat less sensitive to relative interest rates than M1'. After some amendment (see the March 1983 *Quarterly Bulletin*, page 78) the definition has been:-

(i) notes and coin held by the public (including holdings by building societies);

(ii) non-interest-bearing sight deposits held with banks by the UK private sector (including building societies' holdings);

(iii) other deposits held with banks[2] and building societies by the M4 private sector (regardless of size or maturity) on which cheques may be drawn or from which standing orders, direct debit mandates or other payments to third parties may be made;

(iv) other deposits held with banks[2] and building societies by the UK private sector of less than £100,000 having a residual maturity of less than one month on the reporting day, including deposits of less than £100,000 for which less than one month's notice of withdrawal is required; [3]

(v) deposits in National Savings Bank Ordinary Accounts.

When M2 was introduced, it was said to 'improve the information available about the narrower measures of money'. 'Narrow' was not defined; in numerical terms M2 is not a narrow aggregate (its stock at end-December 1989, at £238 billion, was further from

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(2) In practice, bank data for these components of M2 are provided by the largest 100 or so banks, which together accounted for around 90% of the stock of deposits in M3 over the period 1982-1989.

(3) Where a deposit is, by common practice, available to the depositor before its legal maturity without significant penalty, it is classified according to the earliest date at which it may be transferred or withdrawn; loss of interest for fourteen days or less is not normally considered significant.

the £18 billion of M0 than from the £423 billion of M4). It is narrow only in the sense that it is intended to be restricted to transactions balances, which is the next natural step up the 'monetary ladder' after the inclusion of cash.

3.2.2 Problems with the current definition of M2

3.2.2.1 M2 is not nested within M4

M2 is based on the principle that a transactions aggregate should not be restricted to the liabilities of any particular set of institutions. However in practice the vast bulk of transactions balances, apart from cash holdings, are with banks and building societies. This raises the question of whether it might be best to ensure that M2 is a subset of M4. This would make the analytical framework of the monetary aggregates simpler, without necessarily distorting significantly M2's role as an aggregate of transactions balances, or M4's role as a broad aggregate encompassing the monetary liabilities of the main deposit-issuing institutions.

As currently defined, M2 includes building societies' holdings of notes and coin and of non-interest-bearing bank deposits, if any. Neither of these items is included in M4. At the time M2 was created, separate data were in any case not available for building society holdings of cash and non-interest-bearing deposits. Latterly, data for building societies' cash holdings have become available, showing that the amounts involved are indeed small. (The amount outstanding was about £280 million at end December 1989, about 0.1% of the stock of M2.) Their exclusion would make no material difference to the statistics for M2. Data for building societies' holdings of non-interest-bearing bank deposits are not available. It is reasonable to assume that the amounts are small, since most societies have ready access to the wholesale money markets and would have an incentive to minimise their non-interest-earning assets.

Deposits in Ordinary Accounts at the National Savings Bank met the criteria for inclusion in M2 since they were, at the time of the creation of M2, in direct competition

with the banks' and building societies' transaction accounts. However, their relative attractiveness as a home for personal sector liquid assets has since diminished. Deposits with the NSB form a small part of the stock of M2 (at end December 1989 the amount outstanding was £1600 million or 0.7% of the stock of M2). They have declined slightly since 1982 whereas M2 itself has grown by 140% over the same period. Their exclusion from M2 would presently make little material difference to the statistics for M2.

3.2.2.2 Problems in the measurement of 'transactions balances'

Since M2 was introduced in 1982, building societies have tended to make the withdrawal terms on their 'term shares' more flexible. Most term shares now have early repayment options, in most cases giving the holder the option of making a withdrawal by giving, say, 3 or 6 months' notice; in effect, such term shares are now indistinguishable from ordinary notice accounts. Over time, this has probably led the holders of term shares to think of them less as a long-term investment, and it has become more likely that these repayment options would be exercised. At any one time a significant proportion of holdings of term shares may be at less than one month to maturity (notice already having been given). Building societies have however found it difficult to identify the amounts involved; the proportions of such accounts which have been included in M2 may not therefore be wholly accurate.

Many banks introduced 'high-interest cheque accounts' in 1985, partly in response to the extension of the composite rate tax regime to their deposits, and partly in response to competition from products introduced by building societies. Not all such accounts offered the use of a cheque book and other transfer facilities, though those that did not were usually linked to a current account to which funds could easily be transferred. Some of these accounts placed restrictions upon the size of withdrawals, usually specifying a minimum amount (typically several hundred pounds) and many stipulated that a minimum balance must be kept in the account. All such accounts fall within the current definition of M2 despite the restrictions upon the size of withdrawals, although those without cheque book and/or other facilities enabling payments to be made to third

parties would be subject to the £100,000 cut-off.(4) Such accounts (and similar products developed by building societies) could provide both a home for long term savings and a means of making payments, blurring the distinction between 'transactions balances' and 'savings balances'.

Some of these accounts are tiered. Tiered accounts typically require a minimum balance (which could be as low as £500 or as much as £10,000); the interest rate on the whole of the account is increased at certain levels (or tiers) of deposit; and withdrawals without penalty are allowed if a certain minimum balance is maintained. With some tiered accounts the number of withdrawals in any one year is restricted, whereas others combine the tiered structure with full current account facilities. It is hard for banks and building societies to identify precisely the balances on such accounts which should be included in M2. Such accounts also combine the features of a savings account and a transactions account, and might be developed further in future.

Given these particular problems with the definition of M2, it is worth considering in general terms whether it would be possible to define a category of accounts which could be said to comprise transactions balances, with reference to the facilities offered by an account, the restrictions imposed and hence the accessibility of the funds in the account for transactions purposes. The facilities to be considered would include the use of a cheque book, and a cheque guarantee card, use of standing orders and direct debits, use of cash dispenser cards, EFTPOS facilities, and transfers to other accounts; the restrictions might include any limits on the amount withdrawable by cheque (maxima or minima), any limits on the frequency of withdrawals, and any minimum balances required on the account.

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(4) The breakdown between those accounts within M2 that can be used to make payments to third parties and those that cannot is difficult for the banks to provide and the quality of the split is suspect.

One could attempt a definition which said that an account should be classified as a transactions account only if it offered all the facilities and none of the restrictions listed above. However, such a definition could still be said to draw an arbitrary dividing line between different accounts. For example one bank currently offers an account with all the above facilities, with only one restriction of a minimum balance of £1000. A definition of this kind would also be vulnerable to changes made by banks and societies to the terms of accounts: these could cause major breaks in the series. For example the minimum balance on the bank account just referred to above was reduced from £2500 to £1000 during 1989.

3.2.2.3 The £100,000 limit

The definition of M2 (section 3.2.1) includes a size limit of £100,000 on certain types of account. This limit has not been raised since M2 was introduced in 1982, although prices (as measured by the Retail Prices Index) have risen by 45%. It was recognised at the outset that an unchanged limit would bias downward the growth of measured M2. However, such bias can be avoided only by continuous indexation of the limit, which would be expensive for banks and societies to implement.

3.2.2.4 Changes in terms of accounts and breaks in series

As indicated above, there have been many changes in terms of accounts in the last decade. Almost all of these have made it easier for the account holder to gain access to the funds, and in many cases have changed the classification of an account from being excluded from M2 to being included within it. It is a moot point whether such a reclassification causes a break in the M2 series or not. No action is usually required of the depositor to take advantage of the new account terms; the depositor may have regarded his initial deposit as a savings balance, but now finds that he can use it as a transactions balance. Some of these reclassifications have been treated as breaks in the M2 series, and thus excluded from the calculation of the growth rate of M2. (For example, a change of this kind in March 1988 caused an increase in M2 of around 0.8%. See the "Breaks in monetary series" paper for details - *Bank of England Discussion Papers, Technical Series*, No 23, February 1989.) But in other cases, usually

where action on the part of depositors is required to take advantage of the new account facilities, such changes have not been treated as breaks in series.

3.2.3 Alternative measures of 'narrow' money

If 'transactions' balances are becoming ever harder to identify, there may be other 'narrow' measures of money that would be of interest.

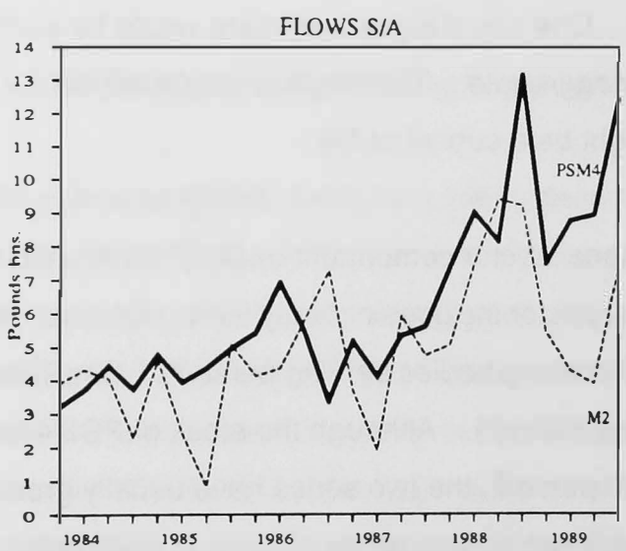
3.2.3.1 A personal sector aggregate

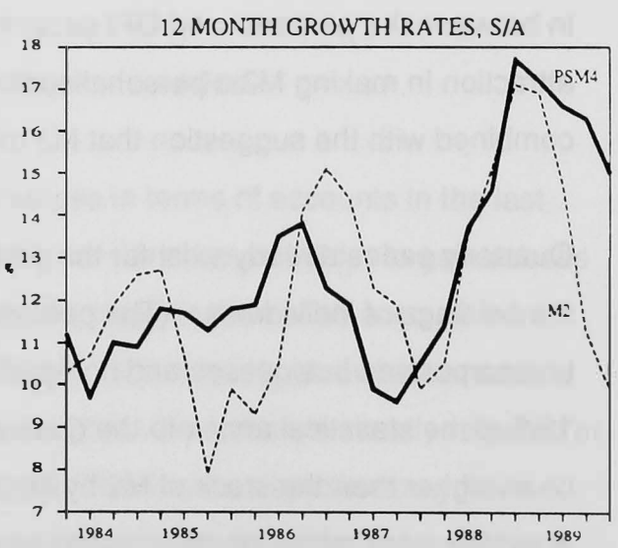
The definition of M2 makes no explicit reference to the sectoral classification of the holders of transactions balances. However, from the way in which the definition was framed, both in terms of the account facilities referred to and the size limit upon certain types of account, the majority of deposits included in M2 were bound to be personal sector deposits. Money held by the personal sector might be thought to be more likely to be held for transactions purposes than money held by 'other financial institutions' (OFIs) which are more likely to regard money holdings as part of an overall asset portfolio decision. Industrial and commercial companies might perhaps fall somewhere in between the personal and OFI sectors. One could argue that there would be some attraction in making M2 a personal sector aggregate. This might or might not be combined with the suggestion that M2 might be a subset of M4.

Quarterly series already exist for the personal sector component of M4 (PSM4), and for the holdings of individuals. (The personal sector includes not only individuals, but also unincorporated businesses and non-profit-making bodies serving persons. See Table 12.3 of the statistical annex to the *Quarterly Bulletin*). Although the stock of PSM4 has been higher than the stock of M2 by 16-20 percent, the two series have usually grown at similar rates, although their growth rates have on occasions diverged significantly, not least in 1989. PSM4 is available as a quarterly series from 1976 onwards (and from 1963 on a flows basis), whereas M2 is available as a monthly series, but only from 1982.

	Amounts outstanding £bn, seasonally adjusted				12-month growth rates			
End December	PSM4	o/w IND	UCB	M2	PSM4	o/w IND	UCB	M2
1982	126	114	12	108	13.0	n/a	n/a	n/a
1983	141	128	13	120	11.2	11.3	9.8	10.3
1984	158	143	14	134	11.8	12.1	9.3	12.7
1985	176	161	16	147	11.9	12.2	9.1	9.3
1986	197	179	18	169	11.9	11.1	19.8	14.4
1987	219	197	22	187	11.4	18.6	10.7	10.5
1988	257	230	27	217	17.3	16.7	22.0	16.9
1989	295	263	32	238	15.6	15.2	19.0	9.9

PSM4 = personal sector component of M4
o/w IND = individuals
UCB = unincorporated businesses and non-profit-making bodies serving persons





The above data show that the divergence between the growth of PSM4 and M2 again widened substantially during 1989. While there are definitional differences between the two series it is surprising that the discrepancy should be so large. Discussions with banks suggest however that the figures are accurate, and that over the past year the personal sector has been increasing its large and/or longer term deposits in accounts without facilities for making payments (ie, 'non-retail' deposits, outside M2) while at the same time industrial and commercial companies have attempted to minimise their 'retail' deposits (within M2). These forms of behaviour are interesting in themselves, and tend to suggest that PSM4 is not a good approximation to 'retail money'.

This discussion highlights one of the limitations of the data currently available. The sectoral split of the money holdings of the M4 private sector into the holdings of other financial institutions, industrial and commercial companies and the personal sector is available only on a quarterly basis and does not link up directly with the retail and wholesale components of M4; and, for example, 'retail' deposits currently within M2 are not broken down by sector either on a monthly or quarterly basis. A special exercise was required in order to establish the reasons for the divergent behaviour of PSM4 and M2 during 1989. Ideally an analysis of money by sector as well as by type of account would be available on a monthly basis. This would however require a further complication of the reporting system for both banks and building societies, adding significantly to their costs.

3.2.3.2 A 'retail' aggregate

This would comprise 'small' deposits, usually administered by part of a branch network, as opposed to 'large' deposits placed in the money markets. The Building Societies Act 1986 offers one possible definition of 'retail' deposits. Amongst many other changes, the Building Societies Act introduced formal definitions of 'retail' and 'non-retail' deposits, together with the requirement for societies to measure accurately the amounts included in each category because of the Act's restrictions on the raising of non-retail funds. However, the definition of 'retail' deposits does not correspond closely to the definition of deposits in M2; broadly speaking, 'retail' funds embraces all

funds and deposits that are neither transferable instruments (such as certificates of deposit), nor funds from corporate bodies, friendly societies, trade unions and charities and certain other institutions, nor large time deposits (over £50,000 and repayable within 1 year of deposit). In effect, 'retail' deposits are predominantly non-corporate funds raised outside the wholesale money markets.

The Composite Rate Tax scheme might have provided an alternative basis for such a definition, but, as announced in the Budget, is now to be abolished next year.

3.2.3.3 Divisia money

If there is a spectrum of liquidity or transactability among assets, any aggregate which consists of the simple sum of a particular set of assets ignores the varying 'moneyness' of its components. For example, within M2, bank time deposits are assigned the same weight as notes and coin, despite the latter's greater liquidity and generally greater usefulness as a means of making payment. An aggregate which would weight together components according to their 'moneyness' has an obvious intuitive appeal. Such weighted measures of monetary aggregates are usually referred to as Divisia indices.(5)

In principle the weights in a Divisia index reflect the 'monetary services' provided by each asset. In practice there are considerable difficulties in ascertaining these weights. Usually the weight attributed to each component of the index is measured by the difference between its rate of interest and the return on a risk-free non monetary asset, for which the local authority deposit rate has sometimes been used. The

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(5) See, for example, for the United States 'The New Divisia Monetary Aggregates' by W A Barnett, E K Offenbacher and P A Spindt *Journal of Political Economy* Vol 92, no 6 (1984) and for the United Kingdom 'Financial Innovation and Monetary Statistics: A New Measure of the UK Money Supply' by P D Spencer, Credit Suisse First Boston (August 1988).

difference in return is supposed to reflect (be the price of) the monetary services offered by each asset in question. However, all assets offer a range of characteristics, only some of which relate to their use as a transactions medium. Recently there has been a downward sloping yield curve, but it would clearly be wrong to infer from this that longer maturity assets provide more monetary services than liquid assets. The higher returns offered at the short end indicate, in part, the expectation that interest rates will decline in the future. In practice, it is not clear how to measure this expectations effect. If it is not allowed for, some of the monetary components in Divisia indices might on occasion take negative weights. To get round this problem unofficial compilers of Divisia money have sometimes added an arbitrary constant to the benchmark rate.

Differences in rates of return between the various monetary components are in any case not necessarily an accurate reflection of the relative 'moneyness' of assets to the extent that deposit markets are still segmented. Interest-bearing current accounts are a close substitute for non-interest-bearing current accounts. Individuals have however not immediately shifted all their transactions money into interest-bearing accounts, perhaps for reasons, such as inertia or lack of information, which have nothing to do with the relative 'moneyness' of the different accounts. During the 1980s there has been a marked increase in the number and value of (liquid) current account deposits which earn interest. However, a Divisia index for money which measures the lack of liquidity of a monetary asset by its rate of return would assign a low weight to interest-bearing current account deposits and so tend to understate the growth in transactions money over the past decade.

If adjustment delays generally are long, then a Divisia money index may also give a misleading short-run signal when interest rates change. The general rise in short-term interest rates over the past eighteen months, for example, would immediately result in a larger weight being given to notes and coin and non-interest-bearing current accounts in a Divisia index of money. But it would make no allowance for time delays in adjustments to portfolios in favour of interest-bearing monetary assets. Since the growth in the non-interest-bearing monetary aggregates has been slower than for the wider aggregates, a Divisia index would give a misleading impression of an immediate tightening in overall monetary conditions.

An alternative weighting scheme might be based on the rate at which deposits are turned over. There are however no statistics currently available for this, and turnover is not necessarily linked to use for transactions in goods and services (the transactions of particular interest in this context).

The idea of weighting monetary aggregates in favour of the more liquid assets may thus be difficult to apply satisfactorily in practice, despite its intuitive appeal.

3.2.4 Choices to be made with respect to M2

Any refinement of the definition of M2 should depend on the uses to which the aggregate may be put, as well as the practicalities of collecting information from banks and societies. They already distinguish personal sector deposits (on a quarterly basis) for statistical purposes, and societies need to distinguish their "retail" deposits, for administrative purposes. The practical options may be summarised as:-

(i) retain the existing definition (systems are already in place to collect the data);

(ii) switch to a definition based on 'retail' deposits as defined in the Building Societies Act;

(iii) switch to some other common definition of 'retail' deposits for banks and building societies if a practical definition could be determined in course of the reviews currently under way of statistics collected by both sets of institutions;

(iv) switch to a personal sector definition;

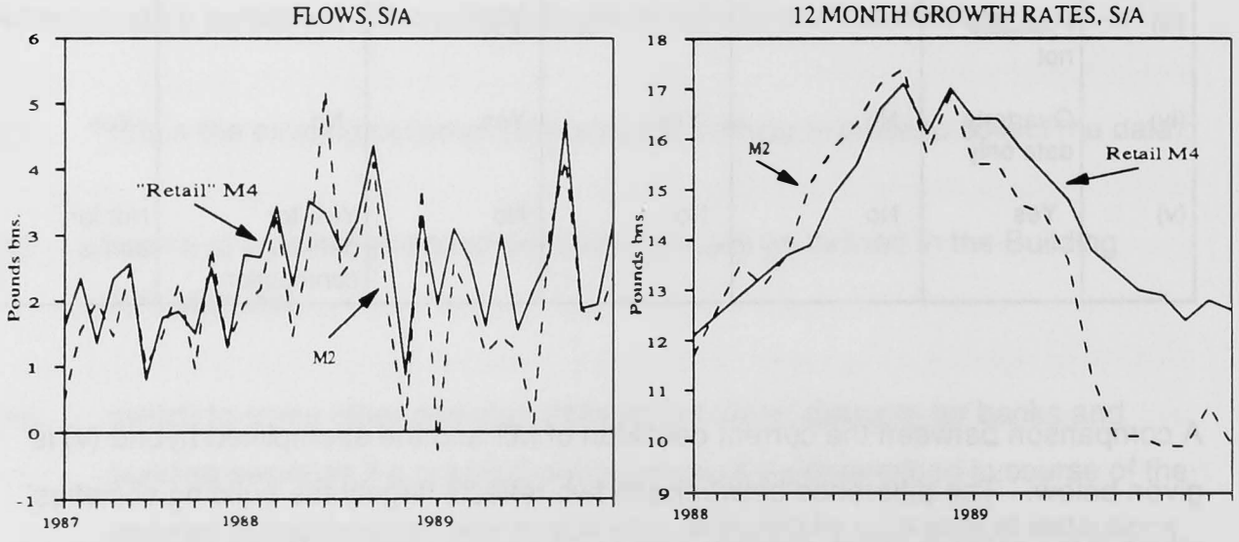
(v) switch to some hybrid of the above (eg use the existing definition for banks' deposits in M2, but the 'retail' definition for societies as defined in the Building Societies Act).

The features of these options are outlined in the table below. None of them appears ideal. None of the alternatives to M2 leads to a transactions aggregate which can easily be measured. But this may partly reflect the difficulty of distinguishing transactions from savings balances in a world in which the payments technology has made great strides and where banks and building societies compete in part through product innovation. It may be that a true transactions aggregate which is easily measured has to be ruled out.

Option	Data sources exist?	A transaction aggregate?	A personal sector aggregate?	Consistent for banks and societies?	Suffers from breaks and distortions?	Can be measured reliably?
(i)	Yes	Yes	No	Yes	Yes	No
(ii)	Not for banks	No	No	Yes	No	Not for banks
(iii)	Probably not	-	-	Yes	-	-
(iv)	Quarterly data only	No	Yes	Yes	No	Yes
(v)	Yes	No	No	No	Yes, for banks' contribution	Not for banks

A comparison between the current definition of M2 and the exemplified hybrid (v) is given below. The difference between the two reflects largely the building societies' taking large or longer-term deposits from the personal sector. These deposits have recently been growing faster than the deposits included in M2. The inclusion or exclusion of National Savings Bank Ordinary Accounts in the hybrid 'retail' M4 would make little difference to its behaviour.

Amounts outstanding at end-December 1989	£ billions, seasonally adjusted
Current M2	238.4
Notes and coin (including building society holdings of cash)	15.5
Non-interest-bearing sight deposits	32.6
Interest-bearing 'retail' bank deposits	92.6
Some building society deposits (less than £100,000 and one month)	96.1
National Savings Bank Ordinary Accounts	1.6
'Hybrid' M2 (or 'retail' M4)	280.9
Notes and coin (excluding building society holdings of cash)	15.2
Non-interest-bearing sight deposits	32.6
Interest-bearing 'retail' bank deposits	92.6
Building society retail shares and deposits (as defined by the 1986 Act)	140.5



4. Broad money

Financial market changes have wide-ranging implications for the way that broad money and liquidity are measured. This section reviews the definitions of both M4 and M5 in this light. It considers, further, how the official statistics can most helpfully reflect current circumstances, and what difficulties and problems may be involved.

4.1. M4

4.1.1 Definition

M4 was introduced and defined in the May 1987 *Quarterly Bulletin.* (The series is, however, now available from 1963 onwards.) It includes, along with notes and coin, the sterling deposit liabilities to other UK residents outside the public sector of all UK banks and building societies, the main deposit-taking institutions in this country. Specifically it includes the following sterling-denominated instruments held by the M4 private sector (all UK residents other than the public sector, banks and building societies):

(i) notes and coin;

(ii) non-interest-bearing sterling bank deposits;

(iii) interest-bearing sterling 'retail' bank deposits;

(iv) other interest bearing sterling bank deposits (including sterling CDs and other issues of sterling paper of up to 5 years' original maturity);

(v) building society sterling shares and deposits;

(vi) other building society sterling deposits (including building society sterling CDs and other issues of sterling paper of up to 5 years' original maturity).

4.1.2 Comments on the definition of M4

M4 has proved to be a useful summary statistic. No one aggregate can serve all purposes, and M4 needs to be supplemented by other information on liquidity in the economy. (See the section on M5 and related topics below.) The only public sector liabilities included in M4 are notes and coin. (Coin is the liability of Central Government; Bank of England notes are the liability of the Issue Department of the

Bank, which is treated as part of Central Government in UK financial statistics.) It would be possible to include other public sector liabilities. For example it was suggested above that the National Savings accounts currently included in M2 might be included in M4. At the same time one might consider including in M4 some other National Savings accounts and private sector holdings of Treasury bills, currently included in M5, and gilt-edged stocks nearing maturity, not currently included in M5. The amounts involved are not large however (see below) and, provided the relevant information is available, nothing important is lost through their exclusion from M4. As currently defined, M4 also has the advantage of a relatively simple 'counterparts' analysis (see section 4.2.4.7 below).

On the present definition, deposits into the new Tax-Exempt Special Savings Accounts (TESSAs), announced in the Budget, will count as part of M4. Quite clearly, by their nature, such deposits represent firmly held long-term savings rather than money to be used for making transactions. In view of their special characteristics, one option would be to exclude these deposits from M4 (and M5) by statistical fiat. However, this approach has little appeal. Many of the existing deposits included in M4 embody longer term saving, not money about to be spent, even though these deposits may not be so readily identifiable as TESSA deposits.

A better approach would be:

(a) not to change the statistical definition of M4, so that TESSA deposits are included in the aggregate; but

(b) to identify TESSA deposits separately in the published statistics, enabling users to make use of this information as they judge best.

4.2 Broader money

4.2.1 M5

M5 was earlier known as PSL2. It was introduced, though not named,(6) in the September 1979 *Quarterly Bulletin*, which said that 'any definition of liquidity is inevitably arbitrary and will depend to some extent on the particular purpose for which the information is required. Whatever concept may be theoretically desirable, there are in any event deficiencies in the statistics that are likely to prevent it being measured precisely. It may nevertheless be helpful to assemble, as consistently as possible, those components for which monthly statistics are available or can be estimated, not to provide a unique liquidity aggregate but rather a spectrum of what are generally regarded as liquid assets.' PSL2 was discussed at length in the December 1982 *Quarterly Bulletin*, (page 530) and was renamed M5 in the May 1987 *Quarterly Bulletin*. Its definition has been largely unchanged since 1979 (but see the June 1986 *Quarterly Bulletin*, page 186). M5 comprises the M4 private sector's holdings of M4 [(i) and (ii) below] and the other sterling instruments listed below:

(i) cash;

(ii) all sterling deposits with banks and building societies (including CDs and other sterling paper of not more than 5 years' original maturity);

(iii) certain National Savings instruments; British Savings Bonds (negligible after 1985); Defence and National Development Bonds (negligible after 1974); Premium Bonds; National Savings stamps and gift tokens; and the National Savings Bank Ordinary and Investment Accounts;

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(6) Among the 'Totals' it was referred to as 'A+B(net) + C(net) + D(net)'; it acquired the name PSL2 in the September 1980 *Quarterly Bulletin* (see the notes to Table 12 of the statistical annex to that issue.)

(iv) certain money market instruments (local authority temporary debt, Treasury bills, and bank bills) and certificates of tax deposit (CTDs).

4.2.2 The concept of liquidity

The December 1982 *Quarterly Bulletin* article said: 'a liquid asset is one which may be realised at short notice, with little actual or potential financial penalty (resulting from the forfeit of interest or from capital uncertainty)'. Clearly liquidity is a matter of degree. There is for example no natural distinction between a 'small' and a 'large' financial penalty. In the June 1982 *Quarterly Bulletin* in which M2 was introduced, it was said that 'loss of interest for fourteen days or less is not normally considered significant'. Similarly, there is no obvious point at which to divide those capital-uncertain assets which may be regarded as liquid from those which may not. Indeed capital uncertainty can arise in a number of ways. Fixed-interest securities change in sterling value as other interest rates change; all securities can change in value as stock market values fluctuate in response to economic events and market sentiment (though this may be hard to separate from the interest rate effect); and instruments denominated in currencies other than sterling can change in value as exchange rates change. All these factors can simultaneously affect the capital uncertainty of some instruments.

It is also hard to say what is meant by 'at short notice'; any maturity cut-off is likely to be somewhat arbitrary. Maturity is a guide to liquidity, but it is not infallible because of the differing nature of financial instruments. For example, fixed-rate instruments usually change significantly in value as interest rates change, whereas floating-rate instruments tend to stay close to their par (or nominal) value. Thus, for any given maturity, fixed-rate instruments are much less capital-certain than floating-rate instruments. Residual maturity, which reflects the effects of the passage of time upon the liquidity of an instrument, is in general a better guide to the liquidity of an instrument than original maturity. However, as explained above, residual maturity may also not be the right guide to the liquidity of a floating-rate instrument; for the latter, the remaining term until the date on which the interest rate is next fixed may often be the most appropriate guide.

4.2.3 Developments since the introduction of PSL2/M5

4.2.3.1 Filling gaps in the maturity spectrum

When PSL2 was introduced, there was a clear gap in the maturity spectrum between instruments issued with a maturity of up to one year, and those issued with a much longer maturity. Building society term shares, for example, were largely seen as competing with National Savings certificates and had maturities of several years and no early withdrawal facilities. But in time this gap in the spectrum was filled in; in particular, withdrawal facilities were introduced for term shares, and term shares of short maturities were introduced, so that eventually the one-year boundary was no longer an easily tenable one, and the definition of PSL2 was changed (in 1986).

4.2.3.2 Sterling capital markets

During the 1980s there have been successive relaxations of the controls over domestic sterling issues, culminating in the abolition of the Control of Borrowing Order (COBO) after the 1989 Budget. Previously, because of the restrictions on short-term sterling issues, issues were of maturities of 5 years or more. New sterling instruments have been introduced, including 'short-term corporate bonds' (see the March 1985 *Quarterly Bulletin,* page 36) and 'sterling commercial paper' (see the June 1986 *Quarterly Bulletin,* page 198). The range of potential issuers of up to one year SCP was widened after the 1989 Budget, and in January 1990 it was announced that the amendment to the Companies Act to allow issues without prospectuses by qualifying companies out to five years would become effective from February 1990. As the markets in domestic sterling instruments have developed, the distinction between these and the eurosterling markets has become blurred. Only recently, with the relaxation of controls, have sub-5-year sterling issues been possible.

As explained in sector 4.1.1, sub-5-year sterling issues by UK banks and building societies are already included within M4 and M5. The question is how to treat the issues of short-term sterling instruments by borrowers other than deposit-taking institutions, which have become possible in the 1980s (within the constraints of the Banking Act, the Companies Act, and the Financial Services Act). These new

instruments could be seen as additional 'liquidity' in the hands of the holders. There is also the question of how to treat sterling instruments of over-5-years original maturity, as their residual maturity shortens. For example eurosterling bond issues have grown dramatically in recent years. The maturities of the bonds can be long, and few are due to mature in the next few years. But the 'liquidity' represented by such bonds approaching maturity will build up in due course. The liquidity of these issues before maturity varies enormously depending on the size of the issue and the issuer. For example, a large long term issue by a quasi-sovereign institution may remain liquid and marketable with the issuer perhaps adding stock by tap at later dates. On the other hand a small issue with a shorter maturity by a company may lose all semblence of liquidity after its first year. For some issuers there may also be the risk of default. Many issues are floating rate but even those that are at fixed interest rates are not necessarily considered less marketable.

If corporate debt is to be regarded as 'liquidity' as its residual maturity falls, government debt should be regarded similarly.

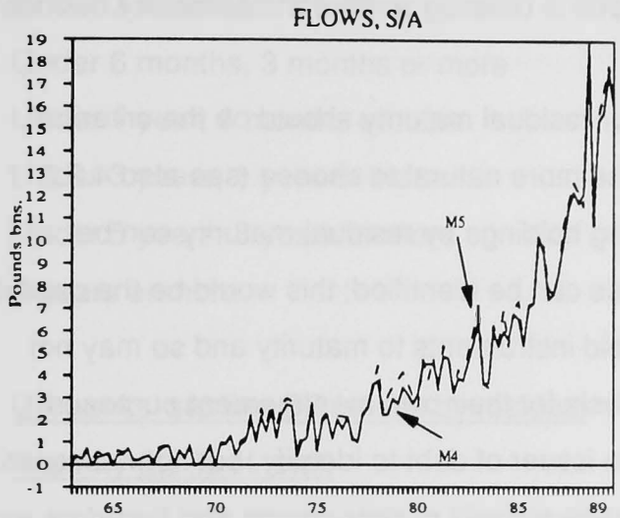
4.2.3.3 National Savings

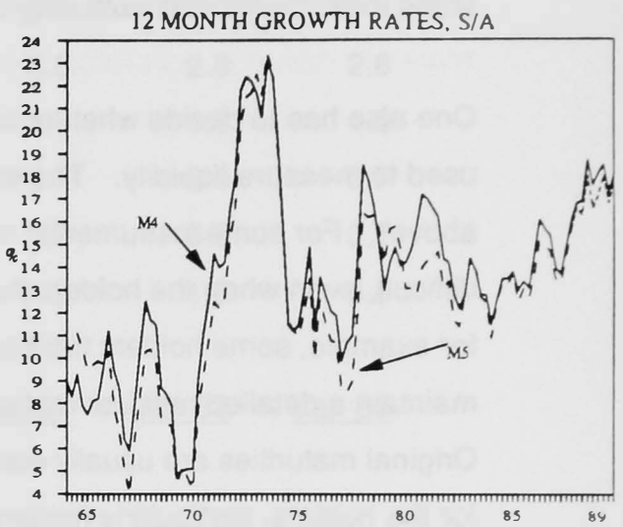
National Savings instruments form a sizeable proportion of the Government's total outstanding borrowing. National Savings certificates are the largest single item within the National Savings total. During their initial 5 year term, interest on certificates is at a guaranteed rate but subject to a penalty in the case of early withdrawal. However, on maturity, they normally go automatically onto general extension terms under which a variable rate of interest is paid and repayment is on demand (in practice, repayment takes about 8 days). This makes them relatively liquid instruments. A large stock of these matured certificates on general extension terms built up in the 1980s but has now started to decline following decisions to leave the general extension rate at unattractive levels. At present these matured certificates are excluded from M5.

4.2.4 Issues for discussion

4.2.4.1 Does M5 serve a useful purpose, as currently defined?

With the exception of the period from 1978 to 1980, when the 'corset'(7) constrained the growth of bank liabilities, there has been little difference between the behaviour of M4 and M5.





Apart from the corset period, M4 has typically accounted for more than 80% of the stock of M5, and the growth rates have been very similar. During the corset period, bank acceptances became a common source of company borrowing and liquidity, in preference to bank advances and deposits respectively. Except in this period, M5 has served little practical purpose. Furthermore, some instruments that might in future circumstances serve as a substitute for bank deposits/advances are currently excluded from M5.

It is in any case debatable whether it is worth constructing another aggregate as such; an alternative course would be to compile and publish information on other potentially liquid instruments, which could easily be combined with M4 if circumstances made that appropriate. There is much to be said for this 'building block' approach. The following section therefore considers the liquid assets that might be of interest in this context, as building blocks, whether or not they were to be combined into a new aggregate.

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(7) Formally known as the Supplementary Special Deposits Scheme - see, for example, the September 1980 *Quarterly Bulletin*, page 264.

4.2.4.2 Should there be a maturity cut-off?

There clearly has to be some dividing line between assets of a very long maturity, which cannot sensibly be seen as 'liquid', and short-term assets which can. But the dividing line need not be the same for every financial instrument. A further consideration is that some instruments are, by definition, of a restricted maturity (eg bank certificates of deposit cannot have a maturity of more than 5 years); so that in practice, by including some instruments and excluding others, one is defining some sort of maturity boundary.

One also has to decide whether original or residual maturity should be the criterion used to measure liquidity. The latter is the more natural to choose (see also 4.2.2 above). For some instruments, measuring holdings by residual maturity can be difficult, even when the holders themselves can be identified; this would be the case if, for example, some holders traditionally hold instruments to maturity and so may not maintain a detailed residual maturity analysis for their own management purposes. Original maturities are usually easy for the issuer of debt to identify, but not necessarily for the holders, particularly holders who trade actively in instruments and therefore are interested largely in their yield and residual maturity.

Exact data enabling one to examine the consequences of choosing a particular maturity cut-off are not available across the board. Partial information, particularly for bank and building society deposits and CDs, suggests that amounts of over 2 years' residual maturity included in M4 and M5 are very small. Thus, in practice, it would make little difference if one decided on a 2-year rather than, say, a 5-year cut-off; and it would probably not be worth the expense of setting up a reporting system to capture the full information.

Most banks provide maturity analyses of their liabilities and assets (sterling and other currencies separately), but only at end-January, April, July and October. The breakdown by instrument is not detailed, nor is there any detailed breakdown by sector of depositor/borrower. Nevertheless, these data show that most bank liabilities are of under 3 years' residual maturity:

UK non-bank sterling deposits with banks (excluding CDs) by residual maturity (as % of total)	Jan 87	Jan 88	Jan 89
Maturing next day	49.6	52.6	50.4
Under 8 days but not next day	24.3	21.4	20.9
Under 1 month, 8 days or more	11.2	10.3	11.9
Under 3 months, 1 month or more	9.4	10.0	10.2
Under 6 months, 3 months or more	2.0	2.3	2.6
Under 1 year, 6 months or more	1.7	1.3	1.8
Under 3 years, 1 year or more	0.7	0.6	0.7
Under 5 years, 3 years or more	0.2	0.5	0.7
5 years or more	0.9	1.0	0.8

UK banks' sterling CD issues by residual maturity (as % of total)	Jan 87	Jan 88	Jan 89
Maturing next day	1.2	0.9	0.9
Under 8 days but not next day	5.2	4.2	6.4
Under 1 month, 8 days or more	26.1	22.8	21.0
Under 3 months, 1 month or more	35.2	33.8	33.6
Under 6 months, 3 months or more	12.5	16.7	15.3
Under 1 year, 6 months or more	10.9	13.9	17.3
Under 3 years, 1 year or more	5.8	4.3	3.2
Under 5 years, 3 years or more	1.4	2.3	1.5
5 years or more	1.7	1.1	0.8

Banks also provide a monthly breakdown of their deposits (excluding CDs) into those under and over 2 years' original maturity. These data also show that deposits of more than 2 years' maturity form only a small part of total deposits (2% at end-December 1989).

A maturity breakdown of building society liabilities within M4 is only partially available but confirms that the amounts of more than 2 years' maturity are very small. Of their sterling CDs it is likely that no more than say £100mn is ever over 1 year to maturity and none over 2 years to maturity. This assertion is based on the holdings of members of the London Discount Market Association (who seem typically to hold 10-20% of issues), analysed by residual maturity. In addition, building society time deposits (as opposed to term shares) are, by definition, repayable within 12 months. Of total building society shares and deposits we know that around 68% are not more than 1 month to maturity, ie those deposits that currently fall within M2. Deposits greater than 1 month to maturity include term shares without withdrawal facilities and SAYE deposits (which comprise 1% of the stock of M4) and term shares with withdrawal facilities (1.8%). We have no precise source of maturity information but it is likely that most of these deposits are less than 2 years to maturity, if not less than 1 year to maturity.

4.2.4.3 International considerations

With increasing integration of the world economy and of financial markets it becomes harder, and less meaningful, to draw any hard and fast boundaries around 'national' stocks of money or liquidity. UK residents hold liquid assets denominated in foreign currencies. They hold liquid assets with institutions both in the United Kingdom and abroad. And overseas residents hold liquid assets, both in sterling and in foreign currencies, with institutions in the United Kingdom as well as abroad. Considering liquidity in the form of deposits, and taking into account these three criteria:-

(i) the currency of the deposit (sterling or foreign currency);

(ii) the residence of the depositor (in the United Kingdom or abroad);

(iii) the location of the deposit-taker (in the United Kingdom or abroad);

gives rise to an eight-fold (2 x 2 x 2) classification of deposits:-

Currency	sterling				foreign currency			
Depositor's residence	UK		Overseas		UK		Overseas	
Deposit-taker's location	UK	O'seas	UK	O'seas	UK	O'seas	UK	O'seas
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

If existing UK aggregates are categorised according to this classification:-

(i) M4 (notes and coin apart) consists of box (1) only - sterling deposits of UK residents with institutions in the UK;

(ii) M4c adds to M4 box (5) - UK residents' foreign currency deposits with institutions in the UK;

(iii) the 'wider sterling aggregate' introduced in the December 1983 *Quarterly Bulletin* was produced on an M3 basis ie, including only deposits with banks in the United Kingdom adding to M3 only box (3) - overseas residents' sterling deposits with institutions in the United Kingdom (subject to a qualification mentioned below).

Consistency in 'national' money stocks could be achieved according to any of the three criteria. Thus:-

(i) a world-wide sterling aggregate - boxes (1), (2), (3) and (4);

(ii) an aggregate consisting of UK residents' holdings world-wide and in any currency - boxes (1), (2), (5) and (6); or

(iii) an aggregate consisting of all deposits held with UK institutions - boxes (1), (3), (5) and (7).

would be consistent with aggregates produced on the same lines in other countries or other currencies. Such national aggregates would sum across countries in a consistent way to 'world' money ('world' money being defined as an aggregate which included all non-banks' deposits with banks, regardless of currency). Clearly none of the existing UK aggregates has this characteristic.

Note that if consistency in a European Community aggregate were desired, then three-way distinctions would have to be made (UK, other EC, and rest of world, for currencies, residence and location) making a 27-fold (3x3x3) classification necessary in principle.

Note also that the sector of the depositor is also of relevance (bank and non-bank, or more generally whether the depositor is among the institutions whose deposit liabilities are being counted). M4 for example does not include the deposits of banks or building societies with other banks or building societies. With deposits across frontiers the treatment has not always been the same. The wider sterling aggregate referred to above did include net sterling deposits of banks overseas with banks in the United Kingdom (net, that is, of sterling lending by banks in the UK to banks abroad). This may have been intended as an approximation to overseas residents' sterling deposits with banks but as shown below the approximation is not a good one.

The two 'globally consistent' concepts of money or liquidity that are of most interest to UK macro-economic policy are world-wide sterling, and UK residents' liquidity in whatever currency and wherever held. (The total of liquidity held in the UK - which would include the very large eurocurrency and international banking business conducted through banking offices in the United Kingdom - might be relevant to the position of the UK as a financial centre, but that is a rather different matter.) In practice M4 still constitutes the bulk of the liquidity covered by these concepts, but it is desirable that the relevant series beyond M4 be gathered together, so that the international aspects of UK liquidity can be monitored. These series are:-

(i) UK residents' holdings of sterling liquidity abroad - box (2) - and foreign currency liquidity held both at home and abroad - boxes (5) and (6);

(ii) overseas residents' holdings of sterling liquidity held both in the United Kingdom - box (3) - and abroad - box (4).

It is not necessary that 'globally consistent' aggregates as such be published. The relevant data are not all available as frequently or as quickly as M4 and there is clearly no case (as far as UK economy policy is concerned) for adding together in any all-embracing wider aggregate such items as UK residents' holdings of foreign currency and overseas residents' holdings of sterling.

The amounts of sterling held abroad are currently not large:-

Sterling deposits with banks in the BIS area(8) other than the UK:

£ billion, end-1988, not seasonally adjusted

UK non-bank residents	3.8 (borrowing 4.5)
Overseas non-banks	3.5 (borrowing 1.7)

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(8) Geographical coverage of the statistics compiled by the Bank for International Settlements is limited to reporting banks in the BIS reporting area: the 'G10' countries (United States, Canada, Japan, W Germany, France, Italy, United Kingdom, Belgium, Netherlands, Sweden and Switzerland), Luxembourg, Austria, Denmark, Finland, Ireland, Norway, Spain, and certain offshore centres. Therefore deposits held in countries outside the reporting area (eg in Australia, New Zealand, or OPEC countries) are not recorded.

Sterling deposits with banks in the UK:

UK non-bank residents	208.7
Overseas non-banks	27.4

Interbank business in sterling:

Deposits with UK banks by overseas banks	35.7
Deposits with overseas banks by UK banks	24.0
Deposits with overseas [9] banks by overseas[9] banks	17.3
Deposits with UK banks by UK banks	95.4 (includes 16.9 of CDS)

4.2.4.4 Deposits with banks in the Channel Islands and Isle of Man.

At present about half of the locally licensed banks in these offshore islands are treated as UK banks for statistical purposes, and the remainder are treated as 'other financial institutions' (OFIs). The distinction between the two groups is made according to whether the offshore institutions have opted to comply with the Bank of England's monetary control arrangements (in which case they are treated as UK banks for statistical purposes). Thus deposits with offshore institutions which are OFIs are not included in M4 or M5; but the deposits of these institutions with the UK banking sector are included in M4 and M5. So, to the extent that these offshore OFIs take funds and redeposit them in the UK, there is no 'leakage' from M4 and M5, although the sectoral breakdown will record these deposits as being from the OFI sector, rather than the original source of the funds. If this is to be seen as a distortion to the statistics, it has

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(9) Deposits by banks in one country within the BIS area with banks in another country in the BIS area. Figures for sterling deposits by banks in one country in the BIS area with other banks in the same country are not available (except for the United Kingdom).

so far not been great.

The table below shows the balance sheet of the offshore institutions excluded from the statistical banking sector.

£ billions not seasonally adjusted	Flows: 1989		Amounts outstanding end-1989	
	£	fc	£	fc
Deposits from:				
UK banks	-0.4	0.1	0.6	4.7
UK public sector	-	-	-	-
Overseas	0.8	3.8	1.8	8.6
UK private sector	2.0	0.8	6.4	2.1
Capital funds	0.4	0.1	0.7	0.5
Total liabilities	2.9	4.8	9.6	15.9
Advances to:				
UK banks	2.2	1.2	7.0	3.5
UK public sector	-	-	-	-
Overseas	0.1	3.5	0.6	11.7
UK private sector	0.6	-	1.5	0.1
Other UK investments	0.1	-	0.4	0.1
Overseas government securities	-	0.1	-	0.4
Other assets	-	-	0.1	0.1
Total assets	2.9	4.8	9.6	15.9

It would be wrong simply to add the deposits of these offshore institutions onto M4, without at the same time deducting their own contribution to M4. In other words, we should either treat them as banks and consolidate their balance sheets with those of other UK banks, or else treat them, as now, as non-banks. The main arguments for continuing with the present practice are that the amounts involved are, at least thus far, not large, and that these 'OFI banks' currently report only on a quarterly basis.

4.2.4.5 Should unused credit facilities be included?

It is sometimes argued that unused credit facilities should be included in a measure of money (broad or narrow). For example, the personal sector is able to use credit cards as a means of payment for goods and services, with each borrower constrained by a credit limit. The unused portion of the cardholder's credit limit may be seen by him as a substitute for other forms of liquidity. Similar arguments hold for other forms of credit facilities (eg approved overdrafts).

Complete data sources for unused credit facilities do not exist. For banks data are available which are compatible with the quarterly (industrial) analysis of bank lending:-

Analysis of all banks' facilities: end-November 1989: £bns

	Sterling		Foreign currency	
	Outstanding facilities	(% utilisation)	Outstanding facilities	(% utilisation)
Persons	128	(91)	1	(89)
Other	353	(61)	124	(64)
Total UK residents	481	(69)	125	(64)
of which overdrafts	114	(50)	6	(66)

One problem with the use of these figures is that banks say that facilities need not be set at the maximum amount that they would be prepared to lend to the borrower; the limit is usually set at whatever level meets the borrower's immediate needs, and exists for routine monitoring and control by the banks. Some banks report that they do not have any unutilised facilities. Requests by borrowers to increase the credit limits are often met; and borrowers (especially industrial and commercial companies) are fully aware of this. Moreover, borrowers may have facilities with several institutions without ever intending to draw on them simultaneously. Thus any measure of formally agreed credit facilities would not be a measure of the full extent of the credit that borrowers might be able to draw upon.

4.2.4.6 Should measures of broad liquidity be consistent with the flow of funds matrix?

M4, because it is based on the liabilities of institutions within particular sectors, links in with the inter-sector flow of funds accounts (see Table A of the CSO's 'Blue Book', *United Kingdom National Accounts).* M5 as presently defined does not, because it includes some claims of the private sector upon itself; changes in such claims are flows within a sector, and as such do not appear in the flow of funds accounts. Two possible issues arise. First, should holdings of liquidity by non-financial issuers of liquid liabilities (say companies issuing sterling commercial paper) be excluded in the way that banks' holdings of bank deposits are excluded from measures of the money stock? This may well not be practicable, but would in principle make any broader measure of liquidity as net a concept as is M4. Second, if on the contrary broad liquidity is to be seen as a gross concept, including the liquidity held by issuers of liquid liabilities, should there be a similarly gross concept of 'credit', including credit owed by members of one sector to other members of the same sector? The 'lending counterpart' to M5 is currently one such gross credit concept, but adds to the M4 'lending counterpart' only bank acceptances held outside the bank and building society sector. Clearly a much wider set of claims could in principle be included, although the collection of financial data from non-financial companies is difficult unless it is of instruments traded in organised markets.

4.2.4.7 Is it necessary to have 'counterparts' to a broad aggregate?

Because M4 consists largely of the sterling deposits of banks and building societies to the 'M4 private sector' it is possible to construct a 'counterparts' analysis linking M4's movements to other movements in the banks' and societies' balance sheets. (See, for example, Table 12.1 of the *Quarterly Bulletin* , and the explanation of how these counterparts are constructed in the May 1987 issue, page 217.) The more one includes in a measure of broad money liabilities of sectors other than banks and building societies, the more complex and arguably the less useful the counterparts analysis becomes.

4.2.4.8 Frequency, timeliness, and accuracy of the data

Some data are available only quarterly, or even annually. Other data are available only after some quite long lag, in some cases as much as a year. Some data are only broad estimates, or are prone to reporting errors, whereas others are more reliable being based upon auditable figures.

An aggregate that is available only quarterly, or after a long lag, will be less useful than one available more frequently or promptly for the purposes of monitoring the current economic position or of short-term policy-making. But it still might be of use as an indicator of longer-term trends. An aggregate whose accuracy is in doubt has very few uses at all.

4.2.4.9 Candidates for possible inclusion in measures of liquidity: data

It is difficult to rank these potential candidates in descending order of liquidity. The candidates have simply been grouped together, but there is no implied hierarchy either between or within groups.

Item	Amount outstanding end 1988 £ bn	Source
M4	357	Bank
National Savings in M5	12	Bank
CTDs, Treasury bills, LA temporary debt, bank acceptances in M5	4	Bank
SUBTOTAL M5	373	Bank
National Savings Instruments excluded from M5:		
Matured National Savings certificates	8	Department for National Savings (DNS)
Income Bonds	8	DNS
Deposit Bonds	1	DNS
Yearly plan and SAYE	1	DNS
National Savings certificates not yet matured	8	DNS
Bank & building society deposits (including CDs, and deposits with banks overseas) excluded from M5:		
UK non-banks' sterling deposits with banks abroad in BIS area	4	Bank for International Settlements (BIS)
Overseas residents' gross sterling deposits with UK banks	62	Bank *(Quarterly Bulletin* table 6)
Overseas deposits with building societies	2	
Overseas non-bank residents' gross sterling deposits with banks abroad in BIS area	3	BIS
UK non-banks' gross foreign currency deposits with UK banks	34	Bank
UK non-banks' foreign currency deposits with banks abroad in BIS area	13	BIS
Sterling and foreign currency CDs issued by banks outside the UK, held by the M4 private sector (M4PS)	Not available	
Sterling CDs issued by banks outside the UK, held by overseas residents	Not available	

Capital Market Instruments:

Sterling commercial paper (all holders, including banks and overseas)	3	Bank
Sterling medium-term notes (all holders)	0	Bank
Foreign currency commercial paper (held by the M4PS)	Not available	
Foreign currency medium-term notes (held by the M4PS)	Not available	
Sterling capital market instruments (including eurosterling issues) of original maturity of 5 years or more, maturing within a year (all holders)	1	Bank estimate
Other short-term bonds issued overseas (held by the M4PS)	Not available	
Gilts under a year to maturity (all redemptions in 1989 - all holders)	10	Bank
Gilts (one to five years residual maturity) All redemptions between 1990 and end-1993 - all holders	31	Bank

Credit facilities:

Unutilised sterling credit facilities of UK non-bank residents	149 (Nov 89)	Bank

4.2.4.10 Availability of data

Most of the items listed above are available on a monthly basis and could be collected and published within one month of the month end, in the same way that the components of M4 are currently presented. However, there are some areas where data are not so readily available. For example, the eurosterling and UK foreign currency business carried out abroad in the BIS area is covered only by BIS quarterly statistics. These are published approximately 4 1/2 months after the quarter-end.

In addition, there are series for which it is impossible to derive data, ie those marketable instruments held by the M4 private sector that are actively traded in international markets. Whereas the holders of bank deposits can be classified into public, UK private and overseas sectors by the banks themselves, holders of similar instruments such as bank CDs cannot be identified by the issuers. This is generally the case with 'bearer' instruments because the issuer does not need to maintain a register of the

current holders. Even where registers are maintained, they often do not contain the information necessary to make an accurate classification of holders by economic sectors. Without a statistical system in place to identify holdings of all economic sectors, one has to make assumptions about certain sectoral holdings (eg that personal sector holdings of bank and building society CDs are zero) and derive some sectors' holdings by residual. This difficulty is important if one wishes to confine a broad aggregate to the holdings of UK residents alone, particularly with instruments actively traded in international markets.

Comprehensive measures of the gross financial wealth of domestic sectors are already published by the Central Statistical Office (see chapter 14 of *"Financial Statistics"* and the supplementary tables of the September 1989 issue). These measures include both liquid and illiquid assets, but give only limited detail.

5. Conclusion: some consultative proposals

This paper is intended to form the basis for a public discussion of the future development of the monetary aggregates. Firm decisions must await the outcome of that discussion and will depend upon the representations that the Bank receives from the interested parties. To give structure to the discussion, however, it may be helpful to pull together some of the main considerations from the paper and to formulate tentative conclusions and consultative proposals on that basis. They are as follows:

Narrow money

(i) nib M1 no longer plays the role that it did when it was introduced. There is a case for ceasing to publish it as an aggregate whilst continuing to publish its components;

(ii) the arguments for making M2 a subset of M4 seem to have force. That would mean M2 would exclude building societies' holdings of notes and coin and non-interest bearing bank deposits (but assuming, if no data source can be found, that the latter item is zero). It would also mean changing the treatment of

deposits with the National Savings Bank, either by excluding them from M2 (to the extent that they are currently included) or including them in M4 (from which they are currently excluded). The former course could be justified on de minimis grounds;

(iii) the definition of deposits to be included in M2 should ideally be the same for deposits with banks and deposits with building soceties. This is virtually the case for the current definition of M2; the main problem is that the reporting institutions have difficulty in applying the definition. It may be that this is unavoidable for any aggregate whose boundary lies in an area where competition and innovation flourish. But the Bank proposes to explore with the reporting institutions whether a consistent definition can be found which would come acceptably close to a 'transactions' or 'retail' aggregate and which would be more robustly measurable than the present M2;

(iv) neither personal sector M4 nor M4 held by individuals seem to be adequate replacements for M2 since they now seem to contain growing amounts of 'wholesale' personal sector deposits. The proposal is therefore to continue to publish them quarterly but not as substitutes for M2;

(v) if a robust common definition of M2 for banks and building societies cannot be found, a possible fall-back position might be to publish the "hybrid" retail aggregate described above using the existing definition for banks deposits within M2, and the retail definition for societies as defined in the Building Societies Act. But this hybrid includes some large and longer-term personal sector deposits with building socieites and excludes similar deposits with the banks at a time when both categories exhibit strong growth. The hybrid might be published alongside M2, rather than as a replacement for it;

(vi) despite their theoretical interest, there seem to be significant problems with the construction and interpretation of Divisia money indices. There is no clear or simple relationship between interest rates paid on deposits and the monetary services provided by those deposits. The possibility of a downward sloping yield curve complicates the construction of Divisia indices, and more generally any change in expectations will confuse their interpretation. For these reasons, the Bank is not inclined to publish an official Divisia index. But we are open to representations, if there are good solutions to the problems.

Broad money

(vii) It is proposed that the definition of M4 remain unchanged. This is linked to the suggestion that M2 should be made into a subset of M4 - (ii) above. If, however, deposits in National Savings Ordinary Accounts were to continue to be included in M2, these deposits should be included in M4, together perhaps with deposits in National Savings Investment Accounts, possibly some other National Savings instruments, and even some other liquid liabilities of the central government such as Treasury bills and gilt-edged stocks nearing maturity;

(viii) the discussion above suggests that, except for part of the period when the Corset was in operation, M5 has not conveyed a message significantly different from that of M4; however,

(ix) there are now a number of liquid assets which are not included in M5 but which are of actual or potential interest. One way to proceed would be to define a very broad aggregate (a redefined M5) which would encompass all potentially liquid instruments; but

(x) it is difficult to draw an unambiguous boundary between what should be included or excluded, appropriate for all uses of such an aggregate. Furthermore, it makes little sense to add together some items which individually are of interest (eg, UK private sector holdings of foreign currency assets and overseas holdings of sterling). There is also the practical difficulty that some data are available monthly whereas others are available only quarterly; and

some data are available only with a long lag. Under these circumstances, the Bank sees advantage in returning to the approach set out in the September 1979 *Quarterly Bulletin*. That would mean ceasing to publish M5, but publishing details of many of the liquid instruments discussed above, in whatever form they are available, without attempting to construct a new aggregate as such. That should also help to ensure that important developments are not overlooked (and also provide the ingredients for "globally consistent" monetary aggregates, although not all of the ingredients would be timely or of a monthly frequency).

The Bank would welcome comments on these consultative proposals.

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1-5,8, 11-14, 16-17, 20-22, 31	*These papers are now out of print,but photocopies can be obtained from University Microfilms International* [a]	
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