Measures of broad money

The importance of monitoring the development of broad money has been recognised in successive versions of the MTFS and was restated again this year. Broad money growth will continue to be taken into account in the assessment of monetary conditions, although no formal target has been set for this financial year. The Governor in the Loughborough Lecture[1] *addressed the difficulties of targeting broad money against a background of deregulation and innovation within the financial system. Among the developments discussed was the impact of increased competition between banks and building societies on measures of broad money. The Building Societies Act, which came into effect earlier this year, provides a further spur to such competition. It also opens up the possibility that some societies may opt to become banks.*

This article looks at measures of broad money which include both building society and bank deposits, and compares their behaviour with that of £M3. One such measure, PSL2, has been in the public domain for some time,[2] *but it also includes money-market instruments, certificates of tax deposit (CTDs) and some national savings accounts. This article also considers an alternative, but similar, aggregate, whose coverage is limited to bank and building society sterling deposit liabilities to the non-bank, non-building-society private sector and that sector's holdings of notes and coin. This aggregate is conceptually equivalent to £M3 in that, notwithstanding the inclusion of notes and coin which are liabilities of the public sector, it is institutionally based. Indicative of this relationship, it is referred to in the remainder of this article as M4. Broad money, however, comprises a spectrum of financial assets, often closely related and with a high degree of substitution between them. Particular definitions such as £M3 and M4 can be regarded as representative points on that spectrum. PSL2 is yet another point on the same spectrum and in this article it is given the title of M5. The accounting relationships between M5, M4 and £M3 are shown on page 214.*

M4 and M5 are (in common with M0, M1 and M2) aggregates which include only sterling-denominated assets. In that respect, their affinity is with £M3, rather than with M3. One way of reflecting this relationship might be to adopt the titles £M4 and £M5. It is not, however, intended to produce versions of the broader aggregates which include non-sterling assets, so the shorter title is to be preferred. To achieve consistency of description, it is proposed instead that £M3 should become known as M3, and that the existing M3 should be redesignated as M3c (the suffix c indicating the inclusion of currency assets). It is not practicable to give effect to any of these intentions in published statistical series until the publication on 20 May of the provisional monetary aggregates for April 1987. Until then, and for the purposes of this article, the description £M3 will continue to be used.

Recent history of competition between banks and building societies

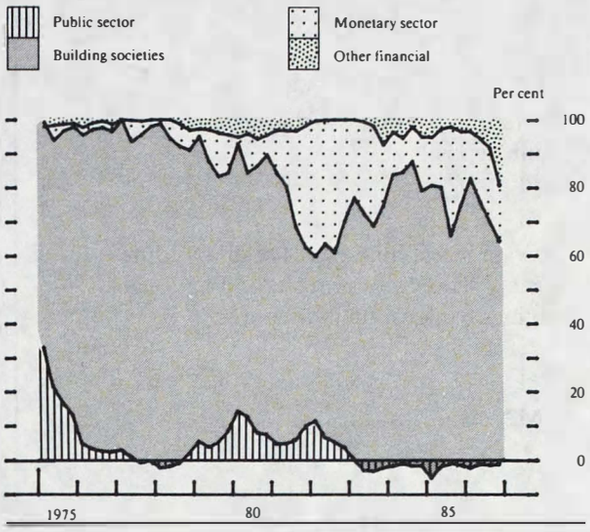
A major feature of financial intermediation since 1980 has been the intensity of competition between banks and building societies. While the removal of exchange controls, and the subsequent ending of the 'corset', might have been expected to produce an immediate surge in intermediation through the banking system as banks took advantage of their new freedoms, what was less easily predictable was the impetus given to competition between financial intermediaries, and, in particular, the dynamism in the responses of banks and building societies. The distinction between the banks and the larger building societies has become progressively blurred, and will become more so as the new freedoms given to the building societies in the 1986 Building Societies Act are exploited. In particular, building society deposits, which were traditionally dominated by savings balances, have increasingly been used for transactions purposes in recent years. The provision by some societies of accounts with cheque book facilities, and the spread of cash dispensers have facilitated this change in usage, which may well proceed further with, for example, the introduction of cheque guarantee cards by some societies.

While there had been competitive development of building society borrowing instruments in the 1970s, the

(1) 'Financial Change and Broad Money', The First Loughborough University Banking Centre Annual Lecture in Finance, 22 October 1986, reprinted in the December 1986 *Bulletin*, page 499.

(2) Though in definition it has changed over time. In particular, the increasing liquidity of building society term shares led to their inclusion in PSL2 as discussed in the June 1986 *Bulletin* (page 186).

Chart 1
Shares of various institutions in net new mortgage lending



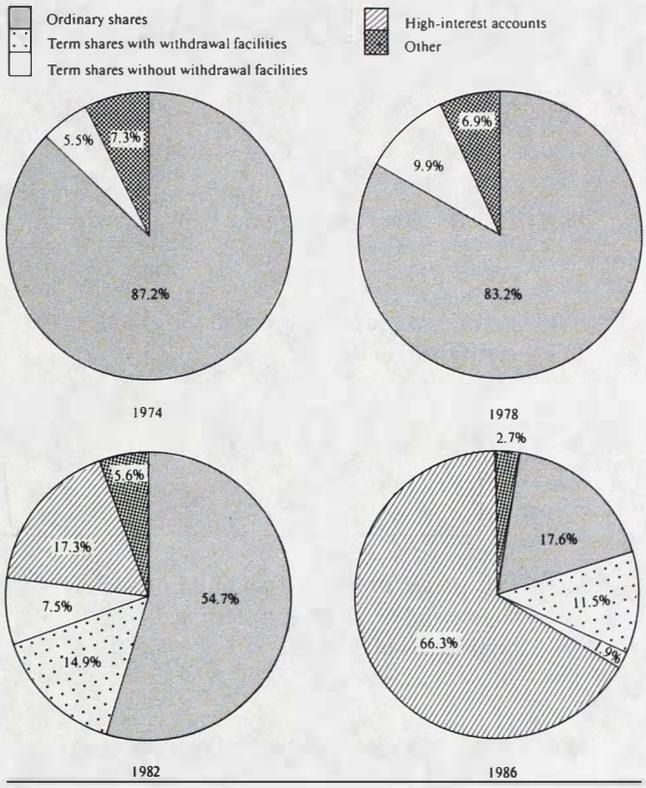
initial focus of competition from 1980 was mortgage lending, with the banks capturing up to 40% of new mortgage lending by mid-1982 (Chart 1), taking their market share in stock terms to over 15%, three times what it was in 1979 (Table A). One result of the banks' successful inroads into the mortgage market was to increase existing pressures within the building society movement for the break-up of the cartel arrangements for setting interest rates. Rationing of mortgage lending had helped to sustain the societies' interest rate cartel, but became untenable after the banks' entry into the mortgage market. In consequence, the emphasis in societies' lending has shifted away from queues, and their interest rates have become more flexible and market related.

Table A
Shares of mortgage lending (stock)
Percentages

	Building societies	Monetary sector	Other
1979	82.2	5.3	12.5
1980	81.7	5.7	12.6
1981	79.1	9.2	11.8
1982	75.0	14.1	10.9
1983	74.5	16.2	9.3
1984	76.2	15.6	8.2
1985	76.5	16.5	7.0
1986	76.6	17.2	6.3

In the circumstances, it was unlikely that increased competition would be confined to mortgage lending. In order to meet the increases in lending, the societies needed to attract more inflows, and this added to the already existing competitive pressures, in particular between medium-sized and larger societies, and also from national savings, which had been given increased emphasis in the financing of the PSBR. The traditional ordinary share accounts were progressively replaced in importance in net inflows first by term shares, and then by various high-interest accounts (Chart 2). These new kinds of account were first introduced in the mid-1970s, but their scope broadened during the early 1980s. Whereas initially the conditions associated with these new accounts meant that they were less liquid than existing share accounts or bank deposits, these conditions were progressively relaxed through the 1980s by, for example, the introduction of term shares with withdrawal facilities and by reductions in the interest penalties for early withdrawal from term accounts.

Chart 2
Innovation in types of building society accounts



Inevitably, these developments have led to a change in the relationship of building society interest rates to other market interest rates. Besides showing greater flexibility, they have also been more consistently above other market rates since 1981 (Chart 3). The larger societies were allowed access to wholesale funds first (in 1983) in the form of CDs, and then in 1985 through FRNs. By last year, some 40% of new funds raised by them were from this source. It seems clear that, though still constrained somewhat by the 20% ceiling on wholesale borrowing, the larger societies, at least, have shifted away from asset management during the period of the cartel, towards liability management now—a similar shift in behaviour to that which gathered momentum among banks in the period after *Competition and credit control.*

The competition between banks, building societies and national savings for personal sector savings is illustrated in Table B. From the mid-1970s the building societies had gained share, largely at the expense of national savings but also, in some years, at the expense of the banks. The early 1980s, however, saw a recovery and then a stabilisation of the share of national savings, and a further rise in the building society share. By the end of 1984, the banks' share had fallen sharply. This loss of share encouraged

Relationships among monetary aggregates and their components

Non-interest-bearing component of M1

plus Private sector interest-bearing sterling sight bank deposits

equals **M1**

plus Private sector sterling time bank deposits

plus Private sector holdings of sterling bank certificates of deposit

equals **£M3**

plus Private sector holdings of building society shares and deposits and sterling certificates of deposit

less Building society holdings of bank deposits and bank certificates of deposit, and notes and coin

equals **M4**

plus Holdings by the private sector (excluding building societies) of money-market instruments (bank bills, Treasury bills, local authority deposits) certificates of tax deposit and national savings instruments (excluding certificates, SAYE and other long-term deposits)

equals **M5**

plus Private sector interest-bearing retail sterling bank deposits

plus Private sector holdings of retail building society shares and deposits and national savings bank ordinary accounts

equals **M2**

plus Private sector holdings of foreign currency bank deposits

equals **M3c**

Chart 3
Building society mortgage rate and Libor

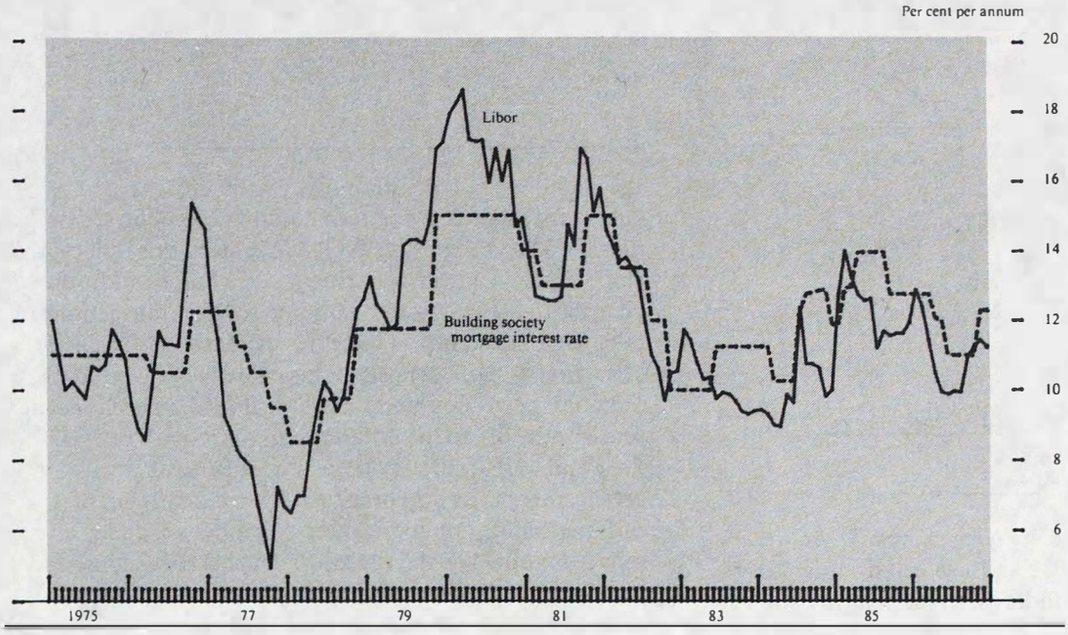


Table B
Relative shares in personal sector liquid assets

Percentages

	Building societies	Monetary sector(a)	National savings
1970	37.6	37.6	24.8
1971	40.0	36.7	23.3
1972	41.0	37.4	21.6
1973	40.6	40.6	18.8
1974	40.6	42.7	16.7
1975	45.3	38.7	16.1
1976	47.2	37.4	15.4
1977	50.8	33.7	15.6
1978	50.8	33.6	15.6(b)
1979	50.8	36.4	12.8
1980	50.5	37.2	12.3
1981	46.8	38.3(b)	15.0
1982	48.3	36.1	15.6
1983	49.7	34.4	15.8
1984	51.7	32.3	16.0
1985	53.1	31.4	15.5
1986	53.2	31.9	15.0

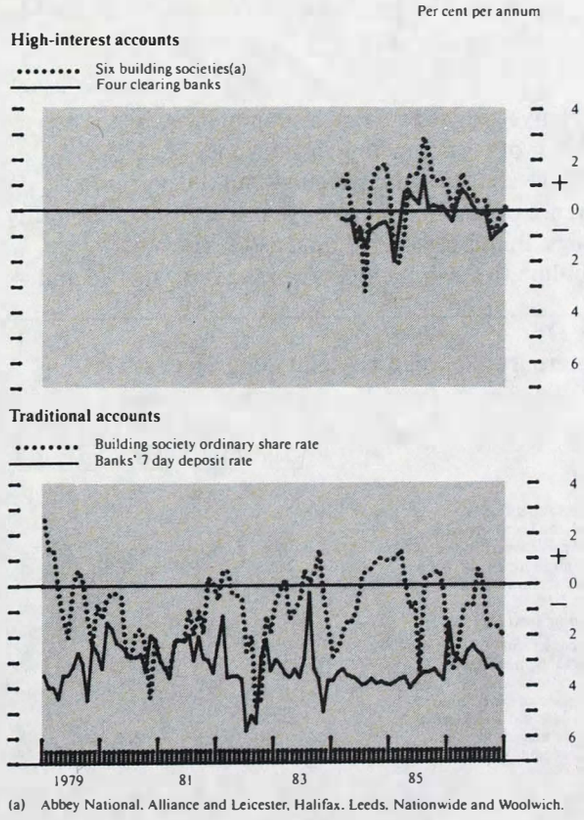
(a) Prior to 1975 the figures for 'Monetary sector' include some foreign currency deposits. In that year they amounted to about ¾% of persons' deposits with the sector.

(b) The monetary sector was redefined in 1981 to include a number of reclassified institutions, including TSB. TSB's figures were included until 1978 in 'National savings'; in 1979 and 1980 they were part of 'Savings Banks', which are not covered by this table.

intensification of competition, and the extension of composite tax arrangements to bank deposits provided the trigger for the introduction by the banks of high-interest retail accounts, some with chequing facilities. These accounts substantially narrowed the gap between the interest rates offered by building societies and those previously offered by banks (Chart 4). Banks' interest-bearing retail deposits, which include both the new accounts and the existing 7-day accounts, increased by £5 billion during 1985, and by some £7 billion in 1986, compared with an average of a little under £2 billion per year in previous years. It is possible that the inflows into the new accounts have been substantially bigger than these figures, as there are likely to have been some transfers out of other bank deposit accounts, including the traditional 7-day deposit accounts, into the new higher-interest accounts. However, some part of the increase seems certain to have been deposits new to the banks—perhaps acquired at the expense of building societies—which would have tended to add to £M3, and increase its growth relative to that of M4 and M5.

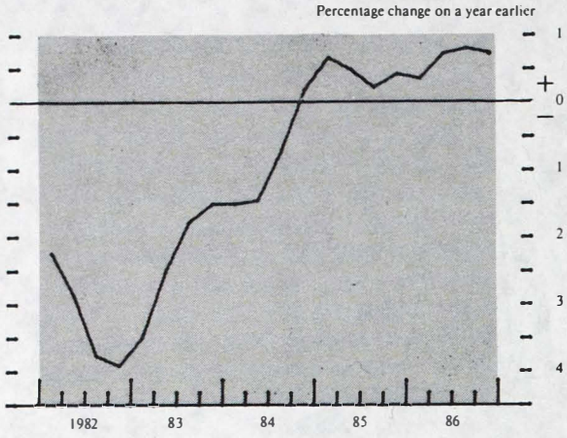
An illustration of the effect of substitution between different types of asset on relative broad money growth rates may be found by examining what has happened in

Chart 4
Retail deposit rates minus Libor



(a) Abbey National, Alliance and Leicester, Halifax, Leeds, Nationwide and Woolwich.

Chart 5
Illustrative effect of movements in term shares on £M3 growth[a] relative to broader aggregates



(a) Based on the assumptions set out in the text of the article.

recent years to building society term shares. These were heavily subscribed to in 1982 and 1983, and some £6 billion of them were withdrawn in the year to September 1986. About half of the inflow in 1982 is believed to have been drawn from other types of building society deposit, and the remainder to have represented new money. Some of that new money may have been diverted from national savings, but most of it will have come from assets included in £M3. Chart 5 shows the effect, assuming that all of it came from £M3, in depressing the latter's rate of growth relative to that of M4 or M5. It is estimated that, on maturity in 1986, some 80% of the net withdrawal from term shares may have remained with building societies, leaving 20% to be switched into £M3 assets. The effect of such a transfer in increasing the rate of growth of £M3 relative to that of M4 or M5 is also shown in Chart 5.

The relative growth rates are also influenced by the asset behaviour of the competing institutions. The last two years have seen a significant change in the portfolio preference of building societies in respect of their liquidity holdings. Building society liquid assets grew by £2.6 billion to £19 billion between the start of 1985 and the end of 1986, but within that total there was a substantial switch away from holdings of public sector debt into bank deposits (Table C). In part, this reflects the slope of the yield curve in recent years but, in addition, changes to the taxation of building society transactions in gilts, announced in 1984, further increased the relative attraction of bank deposits. This change in the building societies' portfolios has alone contributed, in a statistical sense, some 3% to the difference in the growth rates of £M3 and M5 since early 1985. The supervisory arrangements recently proposed for the treatment of different assets in building society capital adequacy tests may also influence the societies' portfolio decisions, and through that produce differential effects on the growth rates of £M3 and the other broad aggregates.

Table C
Changes in building society asset holdings
£ billions

	Cash and bank deposits	Gilts holdings
1983	+0.6	+1.2
1984	+0.5	+0.8
1985	+3.1	+0.1
1986	+1.5	−2.1

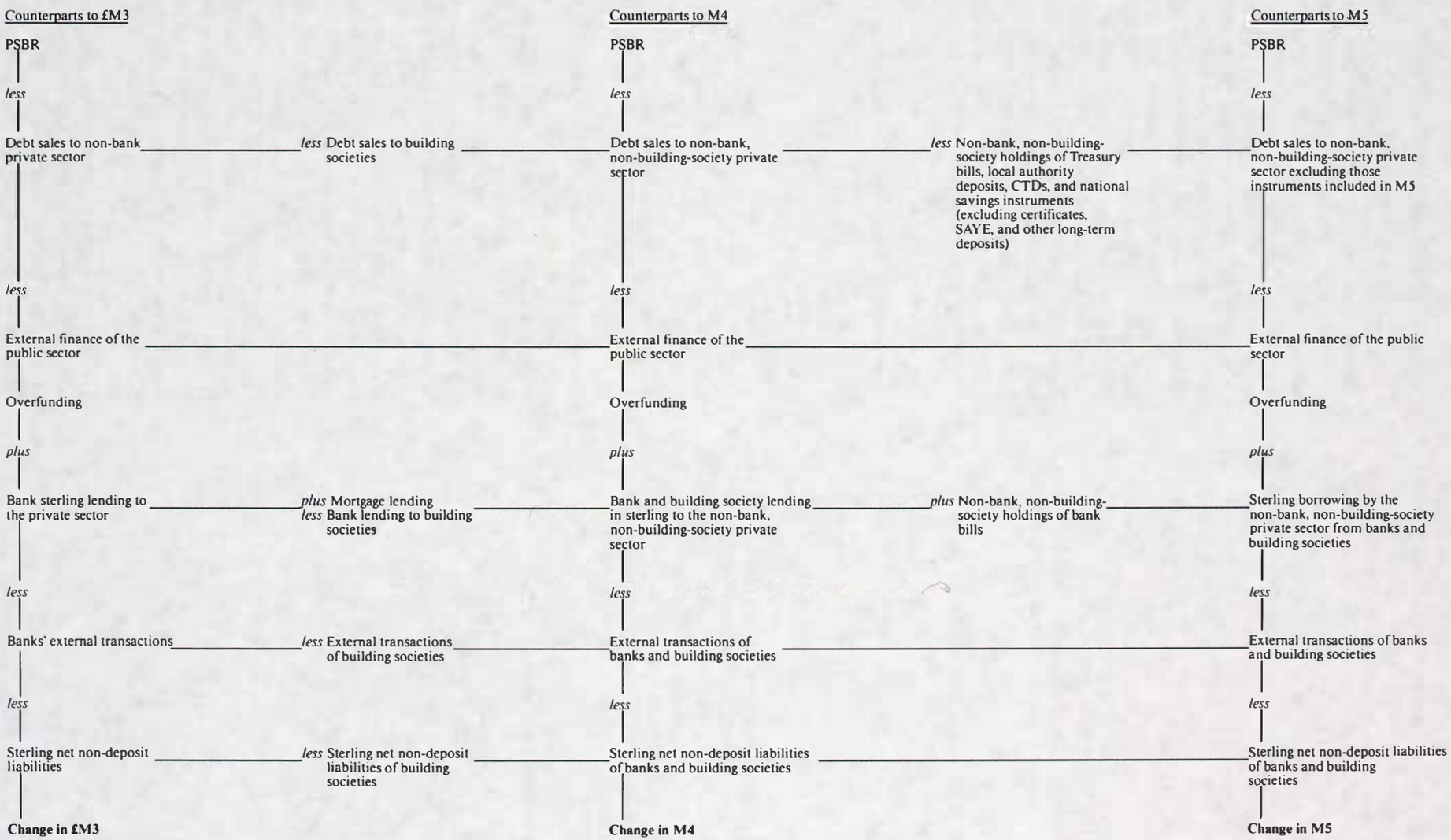
A more comprehensive picture of the influences on the growth rates of the different measures of broad money can be found by looking at the counterpart analysis, already well established in relation to £M3 but set out in terms of M4 and M5 as well on page 217. Table D shows the actual counterparts for financial years from 1982/83 to 1986/87. A major potential influence on broad money growth is the extent of any overfunding or underfunding of the public sector borrowing requirement. The policy, first adopted in 1985/86, of aiming as closely as possible at an exactly full fund, through the sale of public sector debt outside the monetary sector, and from external flows, effectively eliminates the public sector counterpart to £M3. In that year, £M3's growth is seen to reflect primarily the growth in sterling bank lending to the non-bank private sector by the monetary sector institutions, modified to the extent that the latter financed it by a growth in their net non-deposit liabilities or through external transactions. In practice, M4's growth reflects the same factors, but by reference to the combined

Table D
Counterparts to broad monetary aggregates
£ billions; *not seasonally adjusted*

Financial years	1982/83			1983/84			1984/85			1985/86			1986/87(a)		
	£M3	M4	M5	£M3	M4	M5	£M3	M4	M5	£M3	M4	M5	£M3	M4	M5
PSBR	8.9	8.9	8.9	9.8	9.8	9.8	10.2	10.2	10.2	5.8	5.8	5.8	3.3	3.3	3.3
Public sector debt sales to non-bank (non-building society) private sector (increase −)	− 8.4	− 8.0	− 6.5	−12.6	−10.6	−10.0	−12.6	−12.4	−11.0	− 3.5	− 4.3	− 4.6	− 1.2	− 5.7	− 5.9
External and foreign currency finance of public sector (increase −)	− 2.3	− 2.3	− 2.3	− 1.3	− 1.3	− 1.3	− 2.0	− 2.0	− 2.0	− 1.8	− 1.8	− 1.8	− 1.7	− 1.7	− 1.7
Overfunding (increase −)	**− 1.9**	**− 1.4**	**—**	**− 4.1**	**− 2.1**	**− 1.6**	**− 4.5**	**− 4.2**	**− 2.9**	**0.4**	**− 0.3**	**− 0.6**	**0.4**	**− 4.1**	**− 4.3**
Sterling bank (and building society) lending to the non-bank, (non-building-society) private sector	14.4	24.0	24.1	15.4	25.8	25.6	18.6	32.4	32.7	21.4	35.9	36.0	30.3	47.2	48.2
Monetary sector (and building society) external and foreign currency transactions	− 0.8	− 0.8	− 0.8	− 1.3	− 1.3	− 1.3	0.3	0.3	0.3	− 0.7	− 0.7	− 0.7	− 0.7	− 1.6	− 1.6
Sterling net non-deposit liabilities	− 1.9	− 1.5	− 1.5	− 2.3	− 3.5	− 3.5	− 2.7	− 3.5	− 3.5	− 2.0	− 5.0	− 5.0	− 4.6	− 8.6	− 8.6
Total	**9.8**	**20.2**	**21.8**	**7.6**	**18.9**	**19.2**	**11.8**	**25.0**	**26.6**	**19.1**	**29.9**	**29.8**	**25.4**	**32.9**	**33.7**

(a) Provisional.

Relationship between counterparts to growth of £M3, M4 and M5



balance sheets of banks and building societies together, netting out transactions between them. However, it can be seen that the funding balances for M4 and M5 differ from that for £M3 because, for example, sales of public debt to a building society count as a negative counterpart to £M3 but not to M4 or M5. The divergence was considerably greater in 1986/87 than in 1985/86. In addition, M5 is affected by the growth or contraction of those elements of public sector debt which themselves are included as components of M5.

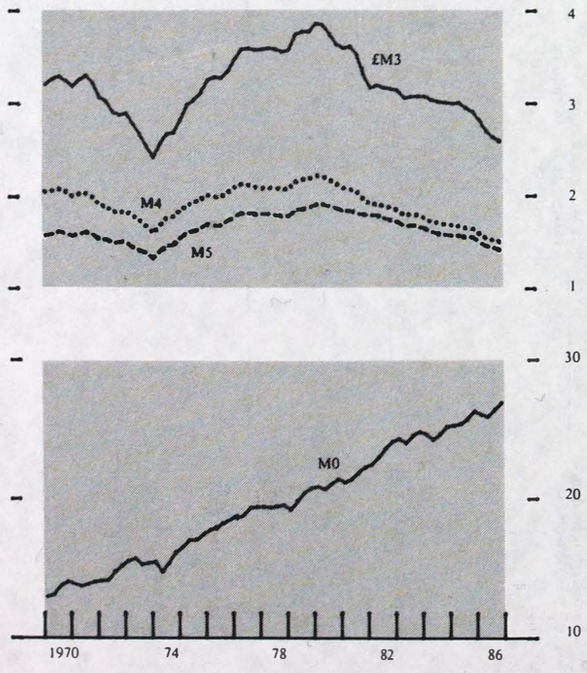
Properties of alternative measures of broad money

Table E shows twelve-month growth rates of £M3, M4 and M5 since 1981. The greater variation in the growth rates of £M3 when compared with aggregates which include both bank and building society liabilities is clear. Over a longer run, however, as is shown in Chart 6, the velocities of measures of broad money show a similar pattern to each other, and have been less stable in trend than that of M0. A slowdown in velocity since 1980 is a feature common to all broad money aggregates, and contrasts sharply with the behaviour of velocity through much of the 1970s and earlier. Apart from the sharp fall in 1971–73, which was soon reversed, the velocity of broad money had risen through most of the post-war period up to 1979.

Table E
Recent growth rates of £M3, M4, and M5
Twelve-month growth rates; *not seasonally adjusted*

End-period	£M3	M4	M5
1981	13.7	13.8	12.5
1982	8.9	11.9	12.0
1983	10.3	12.8	12.6
1984	9.6	13.3	12.9
1985	13.4	13.0	12.6
1986	18.0	15.2	14.5

Chart 6
Velocity of the monetary aggregates



Some increase in velocity might have been expected over this period as the financial system became increasingly sophisticated and technical developments encouraged economies in the use of money balances. It is, however, likely that two other factors exerted a more powerful influence. First, almost throughout the period prior to 1980 the banks were subject to a series of controls on their balance sheets which inhibited their growth, and the building societies periodically limited their expansion by holding down interest rates through the operation of their cartel, and rationing their lending. Second, the level of real interest rates might also have been a contributory factor. Taking the 1970s as a whole, broad money velocity grew faster than in the 1960s. This corresponded to the emergence of negative real short-term interest rates in the 1970s, which would have tended to increase the demand for real rather than financial assets.

Table F
Twelve-month growth rates of broad aggregates
Percentage changes; *seasonally adjusted*

	£M3	M4	M5
1964–70 Average(a)	6.1	8.6	6.8
Range(b)	*1.6–10.4*	*4.6–11.3*	*3.6–9.7*
1971–74 Average(a)	19.6	16.9	16.1
Range(b)	*10.9–27.4*	*10.0–22.1*	*10.2–21.2*
1975–78 Average(a)	9.2	13.2	12.6
Range(b)	*6.1–15.5*	*9.9–17.5*	*9.0–16.6*
1979–86 Average(a)	13.3	13.7	13.3
Range(b)	*7.8–19.0*	*11.2–16.6*	*11.0–15.8*

(a) Geometric mean of Q4/Q4 growth rates for stated periods.
(b) Year-on-year growth rate for any quarter in the stated period.

Unlike the last two years, when £M3 has grown faster than either M4 or M5, the reverse was true for much of the period prior to 1980 (Table F). The explanation lies in the faster growth of building society than of bank lending in that period. The building societies were lending into a rapidly growing market, with the value of the stock of private sector housing being boosted both by the increase in home ownership and by the tendency for house prices to rise faster than other prices in the economy. Households had every reason to concentrate their borrowing into mortgage form, because in that way it attracted the most favourable interest rates, on which some tax relief was available. The banks were much more severely restricted in their ability to compete in providing mortgage finance by the various controls applied to them than were the building societies by the rationing practised under their cartel arrangements—which, moreover, encouraged would-be borrowers to build up a good track record as depositors.

This history suggests that the blurring of the distinction between the activities of banks and building societies may have reached the point where, in the interpretation of broad money, emphasis should be shifted to aggregates that include the liabilities of both of them. M4, introduced

in this article, and M5, which has been monitored for some time, have behaved similarly in the past, in relation both to nominal incomes and to £M3. The elements of M5 which are not in M4 include some liquid national savings instruments, CTDs, and private sector holdings of money-market instruments such as Treasury bills, local authority bills and bankers' acceptances. The definition of M5 was intended to capture instruments having a degree of liquidity comparable with the range of assets included in £M3, and between which a high degree of substitutability might be expected. Wherever the boundary is drawn between financial assets included in and those excluded from a definition of 'broad money', there is likely to be considerable scope for substitution of assets across the dividing line. For example, some national savings instruments excluded from M5—especially savings certificates on extension terms—are little different from assets which are included, such as National Savings Bank Investment Accounts. Bankers' acceptances held by the non-bank private sector, the 'bill leak', are included in M5, whereas sterling commercial paper (even that guaranteed by a bank) is not.

These cases illustrate the difficulty of reaching any firm or enduring conclusion about where among a number of possible definitions of broad money to place particular emphasis. The institutional basis underlying M4 gives that aggregate the advantages—in comparison with M5—of greater simplicity and comprehensibility, as well as enabling it to be subjected more easily to a counterpart analysis similar to that long applied to £M3. But M4 is vulnerable, as £M3 has been seen to be, to the switching of funds between assets included in the aggregate and close substitutes which lie outside it—whether they be of the sort included in M5, or other, possibly newer, ones which are not. M5, while unaffected by the former type of switch, is equally vulnerable to the latter. There is likely, given the current pace of innovation and change in the financial system, to be no shortage of new assets competing for attention. Sterling commercial paper is one such; various forms of packaged security, including those offered by new institutions entering the mortgage market to compete with both banks and building societies, could easily provide others.

The inescapable conclusion is that there can be no unique definition of broad money. Any choice of dividing line between those financial assets included in, and those excluded from, broad money is to a degree arbitrary, and is likely over time to be invalidated by developments in the financial system. The velocity of the chosen aggregate would accordingly suffer the same unpredictability as has beset that of £M3 and, to a lesser extent, of M4 and M5. Moreover, as has been pointed out in successive restatements of the MTFS in recent years, broad money is largely interest bearing, so its growth cannot be relied upon to respond quickly to changes in interest rates. It follows that the problems encountered in using £M3 as the basis for targeting broad money cannot be eliminated simply by adopting some other definition. Nevertheless, the authorities have found broader aggregates useful in seeking to make assessments of monetary conditions. For example, the behaviour of broader aggregates including building society liabilities has provided valuable additional information at times when short-run movements in £M3 have been dominated by switching of funds between building societies and banks, and by the portfolio behaviour of the societies themselves.

The Bank proposes to reflect this approach to the interpretation of movements in broad money by providing, in future releases of monthly monetary statistics, the same range of information on the behaviour, the components and the counterparts of M4 and M5 as has hitherto been provided for £M3. The change will take effect, in relation to the information in the final monthly press release, with the figures for calendar April to be published on 1 June. On present arrangements, information relating to M4 and M5 cannot be relied upon to be available in time for inclusion in the provisional press release, but from June it will be included if available and, if not, it will be released in a supplementary notice as soon as it becomes so. Tables 11 and 12 in the *Quarterly Bulletin's* statistical annex will, from the August issue, be reformulated to give details of levels, changes and growth rates, and counterparts to M4 and M5 similar to (and in addition to) those currently provided for £M3. Information about PSL1 will no longer be provided.