

External flows and broad money

This article considers some of the analytical and statistical implications for the measurement and interpretation of broad money of the increasing tendency towards international substitution between assets, including bank deposits, denominated in different currencies.

While it has long been recognised that movements in domestic holdings of foreign currency and in overseas holdings of domestic currency can have a significant impact on domestic monetary conditions, this possibility has recently become more likely in the United Kingdom for a number of reasons. First, the abolition of exchange controls has greatly increased the possibilities for, and likelihood of, currency substitution on the part of UK residents. From a level equivalent to some £5 billion in 1979, UK residents' holdings of foreign currency deposits with UK banks have grown rapidly and are currently worth almost £14 billion, or about one-seventh of their holdings of sterling deposits with UK banks and cash (which compose sterling M_3): in addition, foreign currency deposits held overseas now exceed £5 billion. Second, there has been a parallel growth recently in overseas residents' holdings of sterling: whereas in earlier years these deposits were mainly held by official bodies (overseas central banks, other central monetary institutions and international organisations) and were subject to special influences (like the agreement reached in Basle in early 1977⁽¹⁾), most recently almost all of their growth has come from private sector residents abroad, whose sterling deposits are free from such restraints. Third, the move towards a more freely floating exchange rate means that shifts in currency preferences of overseas residents are less likely to be insulated in their impact on sterling M_3 by official intervention.

Together, these developments imply both that the scale of potential shifts in foreign and UK residents' demand for sterling has increased, and that any changes in overseas residents' preferences are now more likely to be accommodated by changes in the UK non-bank private sector's holdings of financial assets, and thus affect sterling M_3 . Previously, exchange controls on UK residents and official intervention in the foreign exchange market greatly limited this possibility.

These issues have implications for the way in which broad money may be both defined and assessed in interpreting monetary conditions, and also affect the ways in which the relationship between broad money and the credit counterparts may be expressed. The first part of this article

examines the impact of external flows on the most familiar definition of broad money, sterling M_3 , in the light of these developments, and then reviews the relevance of some alternative definitions of broad money in the current context. The second part describes an alternative presentation of the regular table of credit counterparts to changes in sterling M_3 : this takes the counterparts further away from the concept of domestic credit expansion (DCE) but may be a more helpful presentation in present circumstances since the concept of DCE is now less relevant than it used to be.⁽²⁾

The impact of external flows on sterling M_3

It is important to distinguish the effects of external capital flows on broad monetary growth under a fixed exchange rate from their impact under a freely floating one.

Under a fixed exchange rate, any change in non-resident demand for sterling will automatically be accommodated by official intervention. Thus if, for example, overseas residents want to increase either their sterling deposits with UK banks or their holdings of public sector debt instruments, the authorities would automatically satisfy that higher demand by providing the sterling necessary to finance it. This would be recorded in the counterparts identity, shown in Table 11.3 of the statistical annex, as a change in overseas holdings of deposits with UK banks or public sector debt, fully offset within the external counterparts by an equivalent change in official reserves, leaving total external counterparts, and sterling M_3 itself, unaffected.⁽³⁾ (Increased non-resident holdings of sterling deposits with UK banks do not raise sterling M_3 because they are excluded from its definition.) Equivalently, in this example the result of the official intervention required to prevent the exchange rate appreciating is to raise the supply of sterling assets in non-official hands, matching the assumed higher demand by the overseas sector. There is no reason why the liquidity of domestic residents, and hence sterling M_3 , should be much affected.⁽⁴⁾

Under floating exchange rates, and particularly since the ending of exchange controls, the situation is quite different.

(1) Described on page 8 of the March 1977 *Bulletin*.

(2) The reasons for this are explained on page 172 of the June *Bulletin*.

(3) Of course whether the assumed larger external inflow takes the form of increased holdings of public sector debt or sterling bank deposits carries some different implications. In the former case there is no change in the external finance of the public sector, since the authorities acquire extra sterling liabilities (higher public sector debt sales) to match the foreign currency assets resulting from intervention, leaving their need for sterling finance unchanged; in the latter case, the external finance of the banking sector will rise but there will be an offsetting change in the external finance of the public sector.

(4) There may be some marginal effect caused by any change in the relative yields on bank deposits and public sector debt depending on the nature of the overseas inflow but this is ignored here.

Any change in the net external demand for sterling assets will not lead directly to an offsetting change in their total supply if the authorities are not intervening. To the extent that external holdings of sterling increase, there must be a corresponding switch out of sterling assets by the UK private sector.⁽¹⁾

The means by which this comes about might be as follows. As foreigners attempt to buy sterling, the exchange rate will begin to appreciate: this may raise the expected return on foreign currency assets relative to sterling assets and thus provide the necessary inducement for existing holders of sterling to rearrange their portfolios, reducing the proportion held in sterling assets, including bank deposits. In the process, the growth of sterling M_3 will tend to be reduced (below what it would otherwise have been). In terms of the asset counterparts to the change in sterling M_3 , the total of external counterparts will tend to be more negative (or less positive) than otherwise and sterling M_3 itself will tend to be reduced.⁽²⁾

It is reasonable to suppose that these links between the external demand for sterling bank deposits or public sector debt and sterling M_3 have been made closer by the abolition of exchange controls. The greater the substitutability between residents' sterling and foreign currency balances, the greater the likelihood that shifts in external demand for sterling will lead to changes in the currency composition of UK residents' portfolios. While exchange controls were in force, this substitutability was probably extremely low, since the private sector's foreign currency holdings were relatively small and subject to control. In such circumstances a given increase in demand for sterling assets by non-residents would have caused a larger impact on the exchange rate than it would now and a smaller effect on residents' portfolios and hence on sterling M_3 . It seems likely, however, that the abolition of exchange controls has caused the substitutability of sterling and foreign currency assets in domestic portfolios to increase, so that changes in the external demand for sterling are now more likely to affect sterling M_3 . The particular implication of this for the treatment of sales of public sector debt to non-residents in the presentation of the counterparts to sterling M_3 is considered in the final section of this article.

Some further definitions of broad money

It is appropriate to review the implications of this growing international currency substitutability for some alternative definitions of broad money. Two are particularly relevant: first M_3 , a measure which includes UK residents' holdings of both sterling and foreign currency deposits with UK banks and which was the definition of broad money used in the United Kingdom until 1976; and second an extended definition of sterling M_3 which includes overseas residents' sterling deposits with UK banks.

In general, currency substitution, whether initiated by UK residents or foreigners, will have less influence on M_3 than on sterling M_3 . In each case this is because any shift in currency preferences will induce some compensating move by UK residents between sterling and foreign currency bank deposits. A wider definition of sterling M_3 , encompassing overseas residents' sterling deposits, would, however, be as liable to be influenced by currency substitution as sterling M_3 alone; it would also be affected by changes in the composition of overseas residents' portfolios of sterling assets. Whereas, for example, sterling M_3 would not be affected if overseas residents built up their holdings of UK public sector debt and financed this by running down their sterling bank deposits, this extended definition of broad money would be. There is a question as to how these different implications should be interpreted. In so far as it is appropriate for the monetary authorities in any country to respond to shifts in the demand for its own money relative to other countries' monies, then an aggregate which conceals such shifts would appear in principle to be less useful.

In addition to the specific impact of changes in cross-country monetary holdings, there are other arguments which have a bearing on the merits of these different definitions of broad money. These are primarily economic but there are also some statistical considerations. It is probably right to pay less attention to UK residents' foreign currency holdings with UK banks than to their sterling deposits, for two main reasons. First, it is reasonable to suppose that foreign currency holdings will be quite largely related to UK residents' activities abroad. Second, under floating exchange rates, the sterling value of such deposits is uncertain, unless they are covered in the forward market. Under these circumstances, it is debatable whether such assets can be considered more money-like than other capital-uncertain but liquid domestic assets such as short-dated gilt-edged stocks. Moreover, from a statistical viewpoint, changes in the sterling value of foreign currency deposits, and hence M_3 , may arise from valuation changes as well as from transactions flows, which makes for an additional complication in the measurement and assessment of such an aggregate. Finally, before foreign currency deposits can be used to finance spending in the United Kingdom, they have to be converted into sterling. The resulting appreciation in the exchange rate would tend to exert deflationary pressure on the economy, offsetting the stimulative effect of the increase in spending. Thus M_3 would seem to be less useful for economic analysis, particularly under floating exchange rates rather than fixed rates.

These particular drawbacks do not affect an extended version of sterling M_3 , including sterling deposits placed by foreigners with UK banks, which can be calculated from

(1) It is unlikely that the UK banks' net foreign currency position will be much affected, so that most of any switch will be by the UK non-bank private sector.

(2) The implication in this analysis, that overseas inflows which contribute to lower monetary growth are positively associated with a higher exchange rate than otherwise, arises only because it is assumed that non-residents wish to increase their sterling holdings without special incentive. If alternatively it is assumed that the initiative is taken by UK residents who wish, for whatever reason, to increase the proportion of foreign currency assets in their portfolios, thus requiring compensating inflows from overseas, it could be that these might come about through exchange rate depreciation, which will probably increase the return expected on sterling relative to foreign currency assets.

readily-available data. While such a definition has not been used to date in the United Kingdom, something similar has been adopted in some other countries: for example the US definitions of M_2 and M_3 include dollar deposits in US banks held by overseas residents other than official institutions and banks. In the UK case, overseas (or indeed UK residents') holdings of sterling in banks abroad (ie eurosterling deposits) cannot conveniently be included in any definition, for lack of timely information.⁽¹⁾ But overseas deposits with UK banks are collected and published alongside the monetary aggregates at present: these include an estimate of the 'retail' element of the overseas sector's holdings of sterling deposits with UK banks, available since November 1981 and published alongside M_2 . Total overseas holdings of sterling in UK banks currently amount to about £21 billion, equivalent to 21 per cent of sterling M_3 . Of this, between a third and a half is from overseas banks; about 13 per cent (nearly £3 billion) comes within the definition of 'retail' deposits used for M_2 .

Although overseas sterling deposits could be included within a definition of broad money, its interpretation would not be straightforward. It is likely that the relationship of overseas residents' sterling deposits to economic activity in the United Kingdom differs from that of UK residents' deposits, the more so when official bodies abroad accounted for a large proportion of overseas holdings. Even now with a rather greater proportion in non-official hands, such overseas sterling deposits may be held as a store of value and an investment as much as for transactions purposes. But the same argument can of course be applied to sterling M_3 : a sizable but unquantifiable proportion of UK residents' sterling bank deposits represent investments rather than transactions balances.

There is an interesting symmetry about the value of the two alternative definitions of broad money considered here. Under fixed exchange rates, M_3 seems most appropriate since sterling and foreign currency deposits are essentially interchangeable at a known value; whereas total sterling deposits with UK banks appears less advantageous. Under floating exchange rates, the relative attractions of these two aggregates appear to be reversed.

These two definitions of broad money have another statistical feature in common which is not shared by sterling M_3 . It relates to the worldwide consistency of monetary data. It is clear that if all countries defined broad money as domestic residents' holdings of domestic currency with domestic banks alone, then their sum would not add to broad money holdings constructed on a worldwide basis: completeness requires either that non-resident holdings of deposits in domestic currencies, or that residents' holdings of foreign currency deposits, are included in the national monetary definitions. Completeness cannot however be

Table A
Three broad monetary aggregates

£ millions; changes, seasonally adjusted

		Sterling M_3	M_3	A wider sterling aggregate(a)
1975	3rd qtr	+1,052	+1,475	+1,046
	4th "	+ 47	+ 435	+ 214
1976	1st qtr	+ 951	+1,070	+1,052
	2nd "	+ 927	+1,144	+ 631
	3rd "	+1,366	+1,894	+1,464
	4th "	+ 285	+ 412	+ 381
1977	1st qtr	+ 301	+ 571	+ 487
	2nd "	+1,154	+1,276	+1,449
	3rd "	+1,083	+ 957	+1,403
	4th "	+1,588	+1,628	+2,360
1978	1st qtr	+2,257	+2,461	+2,101
	2nd "	+1,438	+1,856	+1,070
	3rd "	+1,167	+1,009	+1,464
	4th "	+1,875	+2,037	+2,090
1979	1st qtr	+1,097	+ 799	+1,676
	2nd "	+2,104	+2,270	+2,642
	3rd "	+1,540	+1,378	+1,853
	4th "	+1,882	+2,594	+3,277
1980	1st qtr	+1,692	+1,963	+1,864
	2nd "	+3,353	+3,158	+4,023
	3rd "	+2,890	+3,065	+3,104
	4th "	+3,013	+3,786	+2,835
1981	1st qtr	+1,456	+2,939	+ 977
	2nd "	+3,052	+4,645	+3,931
	3rd "	+3,249	+4,983	+3,920
	4th "	+1,410	+ 327	+1,858
1982	1st qtr	+2,230	+2,740	+3,596
	2nd "	+2,086	+2,513	+3,856
	3rd "	+1,641	+2,481	+2,557
	4th "	+2,266	+3,332	+2,363
1983	1st qtr	+3,702	+4,818	+4,805
	2nd "	+2,945	+2,140	+3,700
	3rd "	+ 452	+ 984	+1,463

(a) Sterling M_3 plus total overseas non-bank sterling deposits placed with UK banks plus net sterling deposits placed by overseas banks with UK banks.

perfectly achieved in either case because full data on domestic residents' bank deposits held overseas are not available, nor is there complete information on non-resident eurocurrency deposits. For sterling at least these lacunae are, at present, probably small but they may not necessarily remain so.⁽²⁾

Finally there are a number of practical questions which are raised in any definition of broad money which encompasses overseas residents' sterling deposits: one issue is whether the monetary holdings of overseas central monetary institutions (essentially the foreign exchange reserves of other countries) should be included, particularly when such holdings may be affected by special factors from time to time. Although this question is finely balanced, these deposits have been included in the third column of Table A and in the chart. Another question is how to deal with interbank transactions. Since the ending both of exchange controls and the supplementary special deposits scheme, sterling deposits placed in the United Kingdom by overseas banks have increased sharply; banks overseas have also borrowed sterling heavily from UK banks. These flows amount to an extension abroad of the wholesale sterling markets. Over the last three years they have considerably inflated the gross levels of both sterling lending overseas by

(1) Like foreign currency held abroad, information on sterling holdings in overseas banks is incomplete, and available quarterly from the BIS three to four months in arrears. The US aggregates M_2 , M_3 , and L include some US non-bank residents' eurodollar holdings, but they are partial and partly estimated. UK residents' holdings of eurosterling currently amount to nearly £8 billion.

(2) If, for example, constraints were placed on UK banks which could be avoided in the euromarkets, then sterling business both of non-residents and perhaps also of residents, would be transferred into the euromarkets, where the statistical coverage, though extensive, is incomplete. It is also possible to envisage circumstances under which UK residents would prefer to shift much of their transferable monetary holdings abroad.

UK banks and overseas sterling deposits with UK banks. It seems most appropriate to consider only the net amount of these interbank deposits in a wider aggregate encompassing overseas sterling deposits. The resulting measure, sterling M_3 plus overseas non-bank sterling deposits plus net sterling deposits held by overseas banks, is shown in the chart, compared with both sterling M_3 and M_3 .

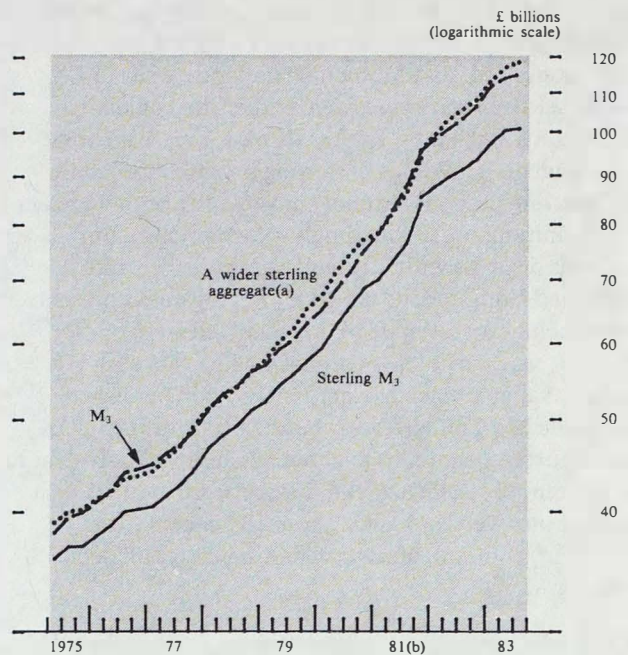
Quarterly changes in these two alternative definitions in recent years are compared in Table A.⁽¹⁾ Since there is no uniquely apt measure of broad money, it may be helpful to examine them periodically in future to see what information they convey for the interpretation of monetary conditions. It is unlikely, however, that interpretation of either of these alternatives would be any easier than it is for sterling M_3 . In recent years, the empirical relationship between sterling M_3 and nominal incomes has been disturbed by a number of structural developments, such as the general process of deregulation in financial markets: as a result the relationship has become more variable and less predictable. Because of the fundamental nature of these developments, however, it is unlikely that any other definition of broad money would have borne a closer relationship with nominal incomes than sterling M_3 , over this recent period at least.

An alternative presentation of counterparts to sterling M_3

Just as there is no uniquely apt definition of broad money, so there is no single best way of presenting the asset counterparts to changes in sterling M_3 . Some of the arguments discussed earlier have a bearing on alternative presentations and suggest that in some circumstances other ways of looking at the same data may be as illuminating as, or perhaps more so than, the format presently used. When the counterparts approach was first adopted fifteen years ago, the credit counterparts to changes in broad money were arranged so as to illustrate the elements comprising DCE, and the interplay between DCE, external flows and money holdings. This analysis was most relevant during the period when the United Kingdom had a fixed exchange rate, and when, owing to exchange controls, there was little international substitution between money holdings. But changes in the UK financial environment cast doubt on the relevance in current circumstances both of the particular definition of DCE and, albeit to a lesser extent, of other definitions of domestic credit.

The present external counterpart combines the external and foreign currency finance of the public sector and the banks and is the counterpart to the external position of the UK private sector on current and capital account (to the extent that it is converted into sterling).⁽²⁾ There is, however, no overwhelming reason to regard this as a uniquely 'correct' presentation. Another way of rearranging the accounting identity on which the table is based is to show the external

Some alternative definitions of broad money



(a) As defined in Table 1.

(b) There is a major break in series in the 4th quarter of 1981, when the monetary sector replaced the banking sector.

finance of the public sector alongside the other public sector transactions—the PSBR and public sector debt sales to the domestic non-bank private sector.

This might be thought to have a number of merits. First, all transactions concerning the public sector are kept together and this helps any analysis of them as a whole. Thus to the extent that the PSBR is not financed by public sector debt sales to the non-bank private sector, nor by external items (including debt sales to non-residents), it must be financed by sterling borrowing from the banks.⁽³⁾ In this presentation, the counterparts to the change in sterling M_3 would be viewed as bank lending in sterling to the public sector, to the private sector, and to overseas, together with other external and foreign currency transactions of UK banks and changes in their net non-deposit liabilities. Second, this form of presentation may offer helpful insights into policy; in particular it highlights the coherence between net external finance of the public sector and funding achieved through debt sales to the non-bank private sector in contributing to monetary control. It is now more likely that, just as debt sales to the non-bank private sector contribute to restraining sterling M_3 growth, in the current circumstances of a floating exchange rate and liberalised capital flows some effect on sterling M_3 is also achieved through public sector debt sales to non-residents and other increases in external finance of the public sector.

But it is important to note that, as with the different definitions of broad money, so also the presentation of the counterparts must take note of the prevailing exchange rate regime. The alternative presentation suggested here, and

(1) The data for the wider sterling aggregate presented here can be calculated from Table 11.3 of the statistical annex by summing columns 14 and (with signs reversed) 7 and 8.

(2) Strictly speaking, the public sector's external current account transactions are also included but they cannot be separately identified in full.

(3) Plus borrowing via notes and coin less net purchases of commercial bills by the Issue Department.

Table B
An alternative presentation of counterparts to changes in sterling M₃

£ millions

	Public sector borrowing requirement (surplus -)		Purchases (-) of public sector debt by UK private sector (other than banks)		External and foreign currency finance of public sector (increase-)		Banks' sterling lending to UK private sector(a)	External and foreign currency transactions of UK banks(b)				Net non-deposit liabilities (increase-)	Money stock Sterling M ₃ (columns 1-13)	
	Central government borrowing requirement	Other public sector contribution	Other public sector debt	Central government debt	Purchases of British government stocks by overseas sector	Other		Sterling deposits from, net of market loans to, banks abroad (increase-)	Other overseas sterling deposits (increase-)	Other sterling lending to overseas sector(c)	Banks' net foreign currency deposit liabilities (increase-)			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Quarters (unadjusted)														
1982 4th qtr	+4,874	-1,802	+397	-866	-1,419	-593	-454	+2,869	-1,020	+923	+863	+94	-104	+3,762
1983 1st "	+2,184	-616	-120	-256	-728	-130	+712	+2,569	-332	-771	+1,098	+591	-1,027	+1,750
2nd "	+5,450	-1,637	+209	-1,803	-598	-654	+239	+3,187	-694	+108	+41	+1,013	-902	+3,959
3rd "	+3,387	-140	+212	-3,917	-778	-211	-164	+3,420	-309	-702	+518	+474	-1,261	+529
Quarters (seasonally adjusted)														
1982 4th qtr	+3,443	-1,852	+314	-866	-1,361	-593	-431	+3,515		+841			-744	+2,266
1983 1st "	+5,158	-759	-65	-256	-931	-130	+723	+1,974		+99			-665	+3,702
2nd "	+3,690	-1,537	+290	-1,803	-408	-654	+228	+3,264		+1,003			-1,128	+2,945
3rd "	+2,646	-27	+152	-3,917	-776	-211	-175	+3,481		+99			-820	+452
Months ended (unadjusted)														
1983 Mar. 16	+634	-714		-42	-250	+400	-211	+545	+16	-322	+428	+591	-704	+371
Apr. 20	+3,561	+31		-113	-296	-405	-79	+687	-72	-304	+233	+435	-849	+2,829
May 18	+1,799	-602		-769	-217	-287	+146	+693	-121	-157	+47	+288	-435	+385
June 15	+2,225	-512		-748	-156	-13	+78	+1,180	-561	-36	+224	+25	-30	+1,676
July 20	+1,373	-335		-1,018	-159	-209	-76	+2,010	+237	+149	-38	-109	+3	+1,828
Aug. 17	+1,396	-171		-1,081	-21	-103	+74	+297	-237	-401	+149	+133	-26	+9
Sept. 21	+797	+452		-1,747	-442	-55	+118	+1,146	+63	-46	+229	+257	-637	-101
Oct. 19	+959	-294		-399	-438		+49	+2,025	-506	-143	+278	-104	-186	+1,241
Nov. 16	+1,010	+221		-1,140	-421	+27	+906		+134	-729	+24	+297	-192	+137
Months ended (seasonally adjusted)														
1983 Mar. 16	+1,954	-773		-42	-265	+400	-216	+635		+48			-796	+945
Apr. 20	+1,742	-44		-113	-207	-405	-60	+199		+398			+67	+1,577
May 18	+1,668	-597		-769	-197	-287	+141	+1,087		+84			-590	+540
June 15	+1,285	-430		-748	-85	-13	+72	+1,560		-257			+227	+1,611
July 20	+1,763	-275		-1,018	-74	-209	-82	+304		+173			+214	+796
Aug. 17	+825	-280		-1,081	-36	-103	+68	+1,185		+310			-111	+157
Sept. 21	+827	+647		-1,747	-388	-55	+124	+896		+431			-947	-460
Oct. 19	+1,207	-619		-399	-408		+43	+1,562		-514			+543	+1,415
Nov. 16	+1,499	+247		-1,140	-506	+21	+1,224			-268			-464	+613

(a) Including net purchases of commercial bills by the Issue Department, and holdings of sterling certificates of deposit issued by building societies.

(b) A seasonally-adjusted breakdown of these transactions is not available.

(c) Including net purchases of ECGD-backed promissory notes by the Issue Department.

illustrated in Table B, which will be published regularly from now on, would be less appropriate under a fixed exchange rate: then, the presentation which groups together all external and foreign currency flows and distinguishes between them and DCE would again become more interesting.

It is equally important to appreciate that any presentation of the counterparts represents one particular arrangement of an accounting identity.⁽¹⁾ Causality should not be inferred from any of the counterparts separately identified to the overall change in sterling M₃: it would be incorrect to assume that an increase in any one of the counterparts would feed through to a similar change in the monetary aggregate on a one-for-one basis. A change for example in the PSBR will, in some part, sometimes in quite large part, be offset by opposite changes in the other counterparts. For example, an increase in the PSBR may, by providing greater liquidity to the private sector, result in a slower growth than otherwise in bank lending to the private sector, and also

perhaps to larger external outflows and to a larger take-up of public sector debt. The attempt to estimate the extent of such offsets in each case is a difficult exercise in which it has been possible to make only limited headway, not least because the offsets are likely to change over time.

It would be wrong therefore to assume that, because in the alternative counterpart presentation shown in Table B sales of public sector debt to non-residents appear alongside sales to residents, such sales are equivalent in terms of offering the same degree of monetary control. In practice, it remains likely that a greater degree of monetary restraint (in terms of sterling M₃) is provided by debt sales to residents than by an equivalent amount of sales to non-residents. Public sector debt sales to non-residents would, however, tend to have a greater impact on a wider monetary aggregate incorporating non-resident sterling bank deposits than on sterling M₃, since it is likely that non-residents would finance any such purchases, at least in part, by running down their sterling bank deposits.

(1) It is based on the fact that total assets and liabilities are equal in the balance sheet of the monetary sector so that a change in one item, UK residents' sterling deposits, must be balanced by an equal change in items either on the assets side (lending) or other items on the liabilities side, e.g., deposits from overseas, foreign currency deposits or banks' capital and reserves.