
Explaining the difference between the growth of M4 deposits and M4 lending: implications of recent developments in public finances

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The growth of sterling lending by UK monetary financial institutions to the UK private sector has substantially exceeded the growth of UK private sector sterling deposits over the past two years. This article considers the possible influence on this growth differential of two events in the past financial year: the unexpected extent of the Government's cash surplus; and the assumption by the Debt Management Office of responsibility for government cash management. The article also describes how the gap between sterling lending and deposits was financed over the past two years.

Introduction

Although monetary aggregates are no longer officially targeted for monetary policy purposes, analysis of these quantities plays an important role in the Bank's regular assessment of the outlook for inflation.⁽¹⁾ Hence it is important to analyse when and how monetary aggregates are influenced by institutional changes and events that could affect the interpretation given to their growth rates.

Bank deposits and bank lending are ultimately determined by banks and their customers. Deposits are determined by private agents' demand to hold such deposits and the banking sector's willingness (expressed through the deposit rates offered) to accept them. Bank lending is determined by the demand for bank credit, given the interest rates at which banks are prepared to lend and the risks they are prepared to accept. Moreover, lending and borrowing decisions are interrelated through their impact on banks' balance sheets; for example, if banks face strong and profitable demand to lend, they may have to bid interest rates up to attract the required deposits, whether from the UK private sector or from other sources. And bank lending may lead directly to a parallel creation of bank deposits, as additional expenditure by borrowers results in higher bank balances elsewhere in the economy.

In its regular monetary policy analysis, the Bank primarily examines the banking sector's sterling

liabilities and assets with the UK private sector. These quantities, known as M4 deposits (M4) and M4 lending (M4L) respectively, constitute a sub-section of the banking sector's overall balance sheet. The Bank focuses on M4 and M4L in particular (rather than the overall levels of banking sector deposits and lending) because, given that these quantities are country and currency-specific, they would be expected to relate closely to UK economic activity.

As part of this analysis, the Bank also studies movements in the full set of the banking sector's assets and liabilities (including loans to, and deposits, from the public sector). This is because, through the balance sheet accounting identities set out below, M4 and M4L are linked to other 'counterpart' banking sector assets and liabilities.

Over the course of 2000/01, M4L grew much more rapidly than M4, and the public sector counterpart accounted for a significant part of the difference. This article considers the possible influence on the public sector counterpart of two developments within the public sector. First, in April 2000, the Debt Management Office (DMO) assumed responsibility for Exchequer cash management. Second, during the course of the financial year, the Government's cash surplus turned out much greater than expected. These developments changed the background against which the borrowing and lending decisions of both bank and private sector agents were made.⁽²⁾

(1) See 'Monetary monitoring ranges and the UK monetary framework', November 1997 *Inflation Report*, pages 8–9.

(2) For a discussion of the wider economic significance of the government's budget position and the way in which it is financed, see Kuttner, K and Lown, C (1999), 'Government debt, the composition of bank portfolios, and the transmission mechanism of monetary policy', in K Alec Chrystal (ed), 'Government debt structure and monetary conditions' (Bank of England). More recently, there has also been some interest in the specific effects of the 2000/01 government cash surplus on the monetary aggregates. See, for example, *Lombard Street Research Monthly Economic Review*, December 2000, pages 8–9.

The first section of this article sets out the formal definition of M4 and its accounting relationship with the banking sector's balance sheet counterparts. The second section outlines how the new government cash management arrangements could affect the monetary statistics. The third section details the Government's cash surplus in 2000/01 and its monetary implications. The fourth section accounts for the difference between M4 and M4L growth in 2000/01.

M4 and its counterparts

M4 comprises sterling notes and coin and sterling deposits at, and money market paper issued by, UK monetary financial institutions (MFIs) and held by the UK non-bank private sector (known as the M4 private sector—M4PS). The MFI sector is made up of the Bank of England and other banks and building societies. Transactions that affect M4 must therefore involve an MFI and an agent in the M4 private sector. Data on M4 deposits are obtained from the liability side of MFIs' balance sheets. Table A gives a simplified breakdown of the other components of the banks' balance sheets—the counterparts to M4.⁽¹⁾ Reflecting its claims on other economic agents, the banking sector's assets are composed mainly of its loan book, while its chief liabilities comprise other agents' deposits with the sector. 'Other assets' include any non-lending assets such as the sector's physical assets, while 'other liabilities' include items such as retained profits, capital issues of maturity of more than five years, and reserves.

Table A
MFI sector's balance sheet

Assets	Liabilities
M4L Sterling lending to the private sector	M4 Sterling deposits from the private sector
FCL Foreign currency lending to the private sector	FCD Private sector foreign currency deposits
PSL Lending to the public sector	PSD Public sector deposits
OSL Lending to overseas residents	OSD Overseas residents' deposits
OA Other assets	OL Other liabilities

Given that total assets must equal total liabilities, the following identity always holds:

$$M4L + FCL + PSL + OSL + OA \equiv M4 + FCD + PSD + OSD + OL \quad (1)$$

When analysing M4 counterparts, the Bank often looks at the net position of a particular counterpart. So, for example, the public sector counterpart refers to public sector deposits minus public sector lending, PSD-PSL.

Identity (1) can be rearranged as follows:

$$M4L - M4 \equiv (FCD - FCL) + (PSD - PSL) + (OSD - OSL) + (OL - OA) \quad (2)$$

That is, the gap between M4 lending and M4 deposits is financed by the sum of the net positions of all the other counterparts.⁽²⁾

Implications for monetary aggregates of the transfer of cash management to the DMO

The DMO was established as an executive agency of HM Treasury (HMT) in April 1998. Its function is to carry out the Government's debt management policy of minimising financing costs over the long term (taking account of risk), and to manage the aggregate cash needs of the Exchequer in the most cost-effective way. The DMO assumed responsibility for gilt issuance when it was established, and in April 2000 it assumed responsibility for Exchequer cash management.

Prior to the transfer of responsibility for cash management, changes in the government's day-to-day cash position were typically accommodated through the government's overdraft account at the Bank of England (Ways and Means account (W&M)), and the effect on the market was offset within the Bank's open market operations. For example, a government cash surplus of £100 million would, other things being equal, reduce the W&M account by £100 million and increase the day's money market shortage⁽³⁾ by the same amount.⁽⁴⁾ It would also have been conceptually possible to conduct operations in other short-term assets to manage the cash position (for example through central government cash

(1) The counterparts are published in Table A3.1 of the Bank's monthly publication *Monetary and Financial Statistics*.

(2) Identity (2) can be rearranged so that movements in M4 are presented in terms of the public sector net cash requirement (PSNCR), M4 lending and, broadly, the balance of payments. Given that the PSNCR is financed by sterling borrowing, debt sales to M4PS, and other foreign currency and external flows, it follows that the sterling component of lending to the public sector in (2) can be replaced with the PSNCR minus its other financing components. The link to the balance of payments is achieved by bringing together all the other external (non-resident and foreign currency) flows. This alternative version is published in Table A3.2 of *Monetary and Financial Statistics*.

(3) That is, the market's need to borrow from the Bank in its daily open market operations (OMOs).

(4) The W&M balance would also have been affected when the Bank advised HMT to raise or lower the issuance of Treasury bills; but such advice reflected overall money market conditions rather than the Government's cash position specifically.

deposits), but changes in these assets were generally small and not planned.

After the transfer of responsibility for cash management, there were two major changes in the management of short-term public finances. First, the level of the government's W&M overdraft at the Bank was fixed at its end-March 2000 level (with subsequent changes possible on agreement between HMT and the Bank).⁽¹⁾ Second, the DMO could conduct its own transactions in the market (typically by entering into sale and repurchase or 'repo' agreements) with its own set of counterparts. In practice, this meant that the DMO could trade in assets similar to those eligible for the Bank's open market operations (selected commercial bank bills, repos of UK and selected European government debt etc), but at market interest rates and at a wide range of maturities. In autumn 2000, this set of securities was widened to include selected certificates of deposit (CDs), selected commercial paper, and other short-term debt issued by high-quality issuers.⁽²⁾

The box illustrates how the cash flows associated with a government receipt of £100 million have changed between the old and new cash management arrangements.

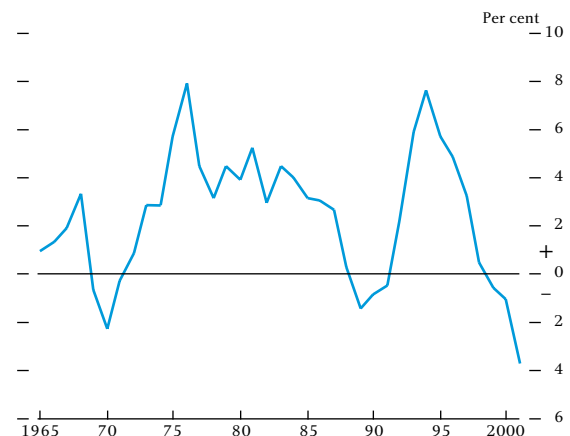
As the example shows, the *net* effects on the M4 system of the transfer of cash management to the DMO are minimal. There is no structural change to the M4/M4L aggregates themselves;⁽³⁾ given that the DMO is not part of the M4 private sector its operations do not directly affect M4. However, there could be changes in the *composition* of the public sector counterpart, with fluctuations in both lending and deposit components possible under the new arrangements. The DMO can use a combination of both sides of its balance sheet to accommodate any particular position. One possible consequence of this is that the *total* assets and liabilities of the banking system could be greater than they would otherwise have been. However, assuming that DMO trade with MFIs exactly substitutes for the Government's previous use of the W&M account at the Bank, the *net*

position of the public sector, and of the banking system, should remain unaffected.⁽⁴⁾

Implications of the Government's unanticipated cash surplus⁽⁵⁾

In the 2000 Budget the Government forecast an overall central government net cash requirement (CGNCR) of -£4.1 billion for the financial year 2000/01. But the actual cash requirement for that year proved to be far lower, standing at -£35.2 billion (3.7% of GDP) at the end of March 2001. Of this extra cash, £19.5 billion arose from proceeds of the 3G auction⁽⁶⁾ (the original estimate of proceeds at the time of the 2000 Budget was £3 billion; the outturn was £22.5 billion), with the rest owing to a generally more favourable fiscal position than expected. As Chart 1 shows, the magnitude of this surplus reached a historical high in 2000/01.

Chart 1
CGNCR as a proportion of nominal GDP^(a)



(a) Annual flows at financial year-end. A negative CGNCR denotes a surplus.

Faced with this surplus, there were a number of options open to the Government: it could cut back on its gilt issuance programme (projected at £12.2 billion for 2000/01); or through the DMO it could use its short-term cash management instruments to accommodate the extra cash by holding some other assets. Given that the level of projected gilt issuance was already quite low while market demand for long gilts

(1) It was also agreed that the DMO would hold a £0.2 billion cash deposit at the Bank.

(2) See the DMO screen announcement dated 9 November 2000 (available on the DMO's web site at www.dmo.gov.uk) for details of the additional instruments adopted by the DMO.

(3) The pattern of day-to-day flows into and out of M4L could change as a result of changes in the daily money market shortage. As mentioned in the box, transactions to clear the daily shortage can affect M4L when the Bank carries them out with an OFC. Following the DMO's assumption of responsibility for government cash management, the money market daily shortage is no longer influenced by changes in the government's cash position. Although this could affect day-to-day OMOs between the Bank and OFCs, it should not result in a permanent change in the level of M4L.

(4) In practice the DMO also trades with non-MFIs.

(5) The cash surplus itself could well be associated with other macroeconomic effects (for example via the fiscal stance), but here we are concerned only with further effects coming via the monetary aggregates.

(6) The Government's auction of third-generation mobile telecommunications licences.

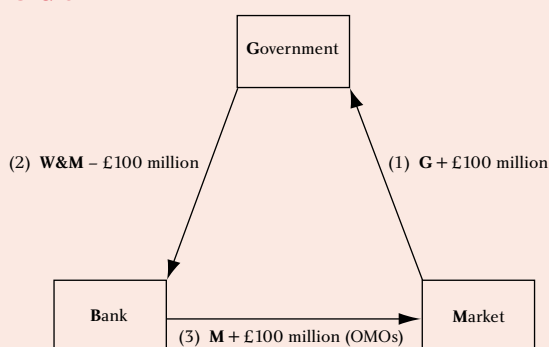
The cash flows involved in a government receipt of £100 million under both cash management arrangements

We consider flows between three agents—the market (which includes all private sector agents: commercial banks, other financial institutions etc), the government, and the Bank of England.

Old arrangements

Chart A illustrates three distinct cash flow stages involved under the old arrangements.

Chart A



- (1) The government receives £100 million from the market (eg from taxes or through the proceeds of gilt issuance). To the extent that private agents run down their bank deposits to pay for the gilts or taxes, there is an effect on M4. This effect is independent of the cash management arrangements.
- (2) The government's receipt is accommodated by reducing its overdraft at the Bank (W&M account). As this transaction involves an MFI (Bank of England) and the government, the public sector counterpart is directly affected. **A reduction in the W&M account reduces the lending component of the public sector counterpart.**
- (3) As a result of the initial transfer of cash from the market to the government, the shortage increases by £100 million, requiring the Bank to conduct additional OMOs.

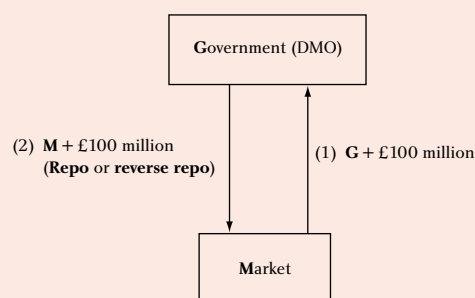
The Bank's OMOs directly affect M4L only when the counterpart is an 'other financial corporation' (OFC),⁽¹⁾ as operations between the Bank and other banks do not score in the M4 system. Typically,

however, the Bank conducts OMOs with both bank and OFC counterparts to clear any particular shortage. Subsequently it is difficult to identify whether movements in OFCs' M4L reflected a specific government position. **Moreover, the ultimate impact of OMOs on either M4 or M4L is impossible to quantify as after the initial shortage is cleared, M4 could be affected by subsequent transactions within the market.** (For example, after clearing the shortage with the Bank, an OFC could lend the funds on to another bank, increasing M4, or repay a debt to a bank, reducing M4L.)

New arrangements

Chart B illustrates two distinct cash flow stages under the new arrangements.

Chart B



- (1) The first-stage transaction remains the same under the new arrangements—the government (DMO) receives £100 million from the market. As under the previous arrangements there is an effect on M4 to the extent that private agents draw down bank deposits to make the payment.
- (2) However the DMO can now use these funds in the market either to reduce the government's short-term debt (through reverse repo operations) or increase its deposits (by increasing repo assets). **These transactions would affect either the lending or the deposit components of the public sector counterpart respectively if the trades are carried out with an MFI.**

There is no third stage between the Bank and the market as the original shortage created by the government is accommodated through the DMO's own market transactions.

(1) Other financial corporations comprise investment institutions, such as insurance companies and pension funds, and other companies such as securities dealers. These financial intermediaries are considered to be part of the M4 private sector. As a result, OFCs' asset and liability positions with banks and building societies enter the M4 and M4L statistics while their positions *vis à vis* other members of the M4 private sector do not.

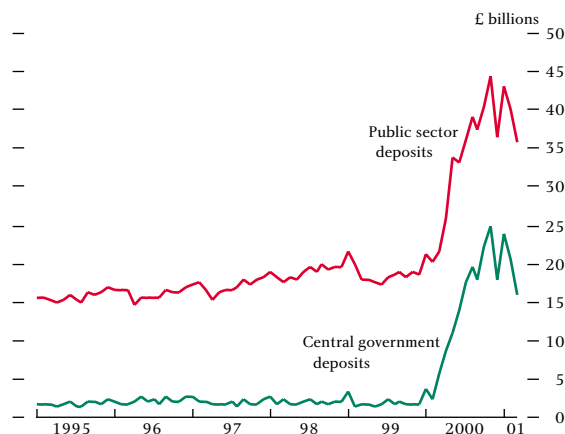
(particularly from institutional investors) was strong, the Government decided to reduce gross gilt issuance only moderately. Indeed, HMT had already decided on a number of contingency measures in the 2000 Budget in the event of a bigger cash surplus. These measures included: reducing the Ways and Means overdraft at the Bank; cutting back the target year-end level of Treasury bill stock; pre-financing foreign currency debt due to mature in 2000/01; as well as buying back gilts from the market. However, the extent of the cash surplus could not be accommodated by the measures initially proposed (although they were increased over the course of the year). At the time of the November Pre-Budget Report, and subsequently reiterated in the 2001 Budget, the Government decided that the rest of the surplus would be maintained as a short-term liquid asset position to be run down over the following three financial years. Table B illustrates how HMT's projection of the Government's cash requirement fell over the financial year and the instruments used that would accommodate the extra cash.⁽¹⁾

Table B
Development of the 2000/01 CGNCR projection from Budget 2000 to Budget 2001

Change in the CGNCR projection	-28.4
<i>Accommodated by:</i>	
Reductions in long-term debt and increase in reserves	-10.0
Contingencies	
Repayment of Ways and Means account	-3.6
Reductions in Treasury bill stock	-6.5
Short-term cash position (increase)	-11.7
Residual and other factors	+3.4

As Chart 2 shows, central government deposits (and overall public sector deposits) with MFIs increased

Chart 2
Public sector and central government deposits with MFIs

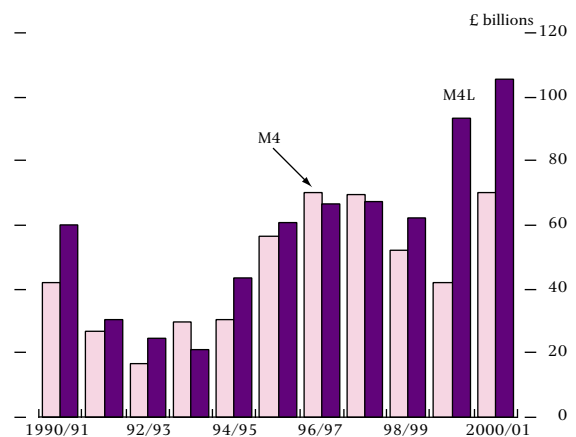


sharply over the course of 2000/01. This was largely as a result of DMO activity in the repo market, and reflected the build-up of the short-term cash position.

The gap between M4 deposits and M4 lending

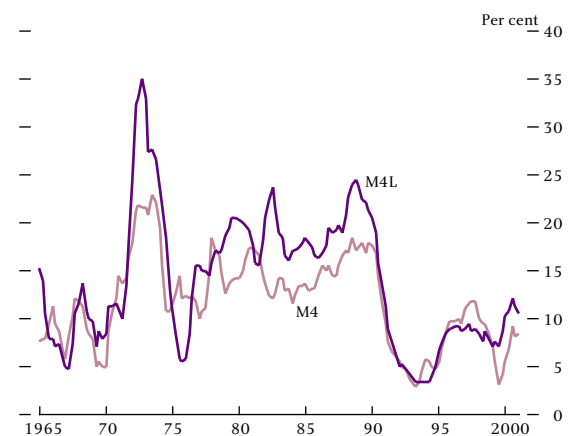
Chart 3 shows that the flows into M4L have substantially exceeded those into M4 since 1999. This has meant that a gap has opened up between the growth rates of M4 and M4L (see Chart 4).⁽²⁾

Chart 3
Annual flows into M4 and M4L^(a)



(a) Annual flows are on a financial-year basis.

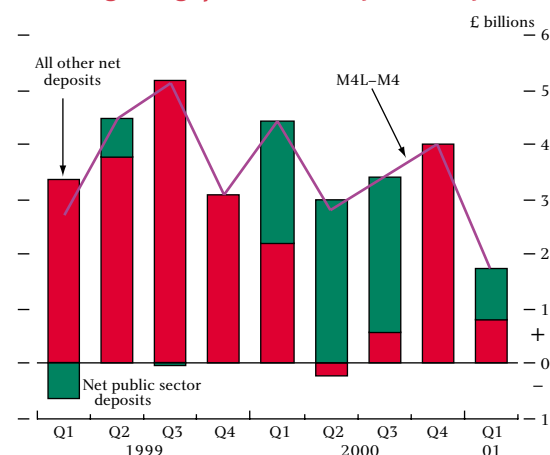
Chart 4
Annual growth rates of M4 and M4L



Given that flows into M4L were greater than flows into M4 over the past two years, by definition (and as implied by identity (2) above) there must have been a net inflow of deposits from (or a reduction in lending to) the other counterparts to account for the gap. Chart 5 decomposes the gap between M4 and M4L flows into the public sector counterpart contribution and all other net

(1) For a fuller description, see Table 3 of the *Debt and Reserves Management Report 2001-02* (HMT).
 (2) The flows gap between M4 and M4L does not directly translate to the growth rates gap, as the levels of M4 and M4L are not the same. However, in the Bank staff's regular briefing on monetary conditions to the MPC, the growth rates of both aggregates are presented to illustrate the trends in both aggregates, which helps to inform the analysis of inflationary pressures and the outlook for demand.

Chart 5
Financing the gap between M4L and M4^(a)



(a) Average monthly flow in each quarter.

counterpart contributions since the gap started to appear in 1999.

Net inflows into public sector deposits accounted for a substantial part of the gap between M4 and M4L flows for the first three quarters of 2000. This is consistent

Table C
Explaining the gap between M4 deposits and M4 lending^(a)

£ billions	1999/2000	2000/01	Difference
M4 lending	93.2	105.7	+12.5
M4 deposits	42.2	69.9	+27.7
'Gap'	51.0	35.8	-15.2
Financed by: (b)(c)			
Net deposits from public sector	+8.5	+20.0	+11.5
Net fc deposits from M4PS	-7.2	+0.2	+7.4
Net £ deposits from non-residents	+22.1	+14.0	-8.1
Net fc deposits from non-residents	+13.1	-23.6	-36.7
Net other liabilities	+14.5	+25.2	+10.7

(a) Annual flows.

(b) £ and fc refer to sterling and foreign currency respectively.

(c) Positive numbers mean a rise in banks' net deposits from that sector.

with a substantial part of the Government's cash surplus in 1999/2000 and 2000/01 having been accommodated in net public sector deposits. But the chart suggests that other counterparts have also accounted for a material part of the gap. Table C draws together a more detailed map of how the gap between M4 and M4L was financed over the past two financial years by presenting the contribution of each of the counterparts outlined in Table A.

In isolation the £20 billion rise in net deposits from the public sector in 2000/01 made a significant contribution to financing the 'gap' of £35.8 billion. But the contribution from net other liabilities was also very strong. These factors, which both increased the gap, were partially offset in an accounting sense by a rundown in net foreign currency deposits from non-residents. During 1999/2000 the main financing counterpart was net non-resident sterling deposits.

Conclusion

The new cash management arrangements allow fluctuations in both deposit and lending components of the public sector counterpart. The net position of the counterpart should, however, remain unchanged compared with the old arrangements. The build-up of public sector deposits resulting from the Government's cash surplus contributed positively to financing the gap between M4 and M4L in 2000/01, but other factors have also been important. This illustrates that we cannot draw simple inferences from the behaviour of individual counterparts in Table C as, ultimately, bank deposits and bank lending are determined by the interrelated behaviour of banks and their customers. If the Government's cash surplus had not occurred (and consequently if the public sector counterpart had been much lower), the gap between M4 and M4L would not necessarily have been smaller; other counterparts could have changed to finance the gap.