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Dropping the monetary pilot again

For the first time in over 20 years, no money supply target in force

Continuous history of money supply targets from July 1976

A target for money supply growth was first announced by Mr. Denis (now Lord) Healey in July 1976. Initially it was expressed in terms of broad money, but in the early 1980s the broad money target was complemented by a narrow money target. In October 1985 the broad money target was suspended and a year later it was abandoned altogether. Brokers' circulars had line drawings on the theme of "dropping the pilot", echoing the famous 1890 cartoon in *Punch* on Kaiser Wilhelm's dismissal of Bismarck. Within two years broad money growth was at over 15% a year, share and property prices were soaring, and the Lawson boom was well-advanced. But narrow money targets were retained (even if they were ineffective) and, after the housing bust of 1991 and the fiasco of sterling's expulsion from the European exchange rate mechanism in September 1992, a monitoring range for broad money was re-introduced. Despite all the official equivocations and muddle, money supply targets of some sort were in force throughout the 21-year period from July 1976 to July 1997. They did what was intended: the trend inflation rate fell from 15% - 20% a year in the mid-1970s to under 3 1/2% a year in the mid-1990s.

But no money supply target announced in Mr. Brown's first Budget

In his first Budget speech Mr. Gordon Brown denounced the boom- bust cycle, but he said nothing specific about monetary control. In fact, he failed to mention a target of any kind for money supply growth. Perhaps he thought that the subject was now the province of the Bank of England and its Monetary Policy Committee, but the MPC also has not announced a money supply target. The MPC could say that Mr. Brown's 2 1/2% inflation target is its central objective and a separate money supply target is superfluous. However, the Bundesbank - which has a statutory obligation to maintain price stability - commits itself with few reservations to a money supply target.

and the first meeting of the MPC appears to have said little about money growth

Admittedly, the first *Minutes* from the MPC begin with a discussion of monetary conditions and the opening two paragraphs are about the behaviour of the monetary aggregates. It remains to be seen just how consistent the MPC is in this approach. The later discussion of "Policy implications" has numerous references to the exchange rate, but almost none to the money supply on any definition. The MPC undoubtedly faces a dilemma at present, with bouyant excess demand arguing for higher interest rates and the over-valuation of the pound for lower. A reasonable rule of thumb is that - when the exchange rate reaches extremes of over- or under-valuation - policy-makers should give priority to the exchange rate, not money supply growth, in interest rate decisions. With the pound 20% or so above its purchasing-power-parity value, it is extremely over-valued. Even so, it would have been nice to see some recognition in the MPC's *Minutes* that there is a connection between, on the one hand, 11 1/2% growth in broad money and, on the other, above-trend growth in demand and output, and unsatisfactory medium-term inflation prospects.

Professor Tim Congdon 1st August, 1997

Summary of paper on

"Another classic dilemma in British monetary policy"

Purpose of the paper

The Bank of England's newly-formed Monetary Policy Committee has to decide interest rates, with the aim of keeping inflation at around 2 1/2%. This paper reviews their current dilemma, with rapid money growth arguing for a large interest rate increase and the over-valued exchange rate suggesting no change or even a cut.

Main points

* **In the medium and long runs broad money growth in excess of 10% a year cannot be reconciled with underlying retail price inflation of 2 1/2%.**

* **The "real balance effect" (i.e., the attempt by all economic agents to keep their actual real money balances in line with the demand to hold them) is the heart of the transmission mechanism from money to economic activity and inflation.**

* **Demand-for-money estimates for narrow money are generally superior to those for broad money, but this may have no significance for the wider macroeconomic scene because i. agents can keep narrow money in equilibrium by transfers between money balances, and ii. the direction of causation may run from the economy to narrow money. (See p. 4.)**

* **After a disturbance to broad money growth, the equivalence between the aggregate demand for and supply of real broad money is restored by transactions of all kinds, including transactions in capital assets. (See p. 7.)**

* **The personal sector's demand for broad money is far more stable and predictable than the rest of the economy's, particularly the financial sector's. Monetary disequilibrium in the company and financial sectors is very important to the determination of asset prices and investment, and to the course of the business cycle. (See pp. 5 - 6.)**

* **While money growth is excessive and will eventually require a large interest rate rise to correct it, the over-valued pound argues against another interest rate rise in the immediate future. (See p. 10.)**

This paper was written by Professor Tim Congdon.

Another classic dilemma in British monetary policy

Memorandum on monetary policy: "The money supply vs. the exchange rate in interest rate decisions"

To: ***Current members of the Bank of England's Monetary Policy Committee (MPC)***

From: ***Professor Tim Congdon, member of the Treasury Panel of Independent Forecasters (1993 - 97)***

A fascinating moment in monetary policy

The Bank of England has been given operational independence on interest rate decisions at a fascinating moment for economic policy-makers. As on so many occasions in the past, external and domestic considerations give conflicting messages about the right course for interest rates. Rapid money growth argues for a rise in interest rates, whereas an over-valued exchange rate suggests that interest rates should be reduced. The purpose of this memorandum is to review the main influences on the UK's macroeconomic situation at present, to draw out the medium-term implications for inflation and to make recommendations about monetary policy.

In the long run demand to hold real money depends only on real forces

The MPC has been given the target of keeping the annual rate of underlying retail inflation between 1 1/2% and 3 1/2%, while avoiding instability in output and employment. The central principle driving the MPC's deliberations must be that, in the long run, the demand to hold real money balances depends only on real forces. In particular, there is a correlation - although not a one-to-one correspondence - between the growth rates of real money balances and real incomes. The evidence for these propositions is overwhelming, despite many uncertainties about the relationship between money and income in the short run, and numerous disputes about the details.

But is it narrow or broad money which matters?

One of the most long-standing disputes has been between economists who believe that narrow measures of money (such as M0 in the UK, M1 in the USA or Divisia indices which give a high weighting to narrow money) are crucial in the determination of national income and others who emphasize broad money (such as M4 in the UK and M2 or M3 in the USA). In our work at Lombard Street Research the focus has been on broad money. I would like to explain the reason for this approach. It has particular relevance at present, because the current rate of broad money growth is over 10% a year and cannot be reconciled indefinitely with an inflation rate inside the target band set by Mr. Gordon Brown.

Following the standard theories set out by Friedman, Patinkin and many others, I have argued in several places that the heart of the transmission mechanism is "the real balance effect". The real balance effect is to be understood as economic agents' attempts - by purchases and sales of all kinds - to bring their actual real money balances (i.e., the money supply, deflated by a price index) into line with their demand to hold such balances. The purchases and sales - the transactions - may be of goods and services, financial and tangible assets, or the factors of production.

Key distinction between individual and aggregate experiments in real balance effect

Individually, every agent believes that the equivalence of his (or her) money holdings with the demand to hold them can be achieved by a purchase or sale of the appropriate size; in the aggregate, however, all the individual transactions do not change the nominal quantity of money, but merely its distribution between agents. The equivalence of real money supply and demand is restored by changes in wealth and incomes, including possibly a change in the price level. The changes in wealth, income and the price level are the result of the transactions motivated by the excess or deficiency of real balances.

Broad money relevant in understanding the real balance effect because

The relevance of broad money - and the irrelevance of narrow money - is demonstrated by highlighting two features of this process. The first is that - in order for the mismatch between the demand for and supply of money balances to alter expenditure - an all-inclusive definition of money (i.e., a broad measure) is needed. If the definition of money is all-inclusive, the attempt to restore equilibrium must involve transactions in goods, services, assets and so on. If

i. it is an all-inclusive measure of money, and

the definition of money is a narrow one (i.e., which excludes certain money balances), agents can restore the equilibrium between the demand for and supply of narrow money by a transfer between money balances (i.e., a sum of money can be moved to and from notes and current accounts, or to and from current and deposits accounts). Such money transfers plainly do not affect national expenditure or income.(1)

ii. it is invariant to the process of monetary equilibration

The second is that - in order for the direction of causation to run from money to income, and not from income to money - the monetary aggregate chosen must have one essential property. This is that its nominal quantity does not change while agents' transactions - with all their consequences for incomes, wealth and prices - restore the equivalence of real money demand and supply. But, in the case of narrow money (and particularly of the narrowest measure of all, M0), this invariance is not found. On the contrary, central banks try to ensure that the banks' holdings of central bank reserves are always sufficient to meet obligations at the cheque clearing and, by extension, they accommodate non-banks' need for notes. As a result, narrow money adjusts to incomes or, in Bank of England parlance, is "demand-determined". In the 1970s and 1980s the Bank routinely denied the macroeconomic significance of narrow money on these grounds, although it seems - curiously - to have become more agnostic on the matter in the last few years. Broad money does not suffer from the same defect.

Broad money inferior to narrow money in statistical tests,

These two points - the all-inclusiveness of broad money and the invariance of its nominal quantity to the process of monetary equilibration - explain the focus on broad money in Lombard Street Research's work. The emphasis on broad money is therefore justified in conceptual and logical terms, not in terms of econometric tests which show the superiority of broad money over narrow money. In fact, virtually all econometric tests find that the relationships between narrow money and expenditure have better statistical properties than those between broad money and expenditure. The better quality of the narrow-money equations may appear to be a decisive argument that some measure of narrow money should guide policy-makers' decisions, but this is not so. The difficulty with the statistical tests is their failure to establish that the direction of causation

is from narrow money to income rather than the other way round. As already explained, modern monetary institutions (central banks with money-market-management responsibilities, easy movement of funds between different bank balances) are intended to keep narrow money close to equilibrium at all times (i.e., on the best-fitting money demand curve). The closeness of narrow money to equilibrium does not imply that it plays an important role in the determination of national income.

but statistical efficiency of narrow money does not imply that it has a causal role

If real balance effect is about restoring monetary equilibrium, aggregate with bad fit in econometric work may be of most interest,

Indeed, if the premise is granted that the underlying long-run demand to hold money is stable, the most significant monetary aggregate is that which - from time to time - shows the greatest departure from equilibrium. Precisely because the demand to hold the money balances included in the aggregate are very different from the actual quantity of such balances in existence, agents' attempts to restore equilibrium involve drastic changes in expenditure. Of course, the more drastic are the changes in expenditure, the greater is the macroeconomic upheaval. On this line of argument, the monetary aggregate most relevant to the understanding of macroeconomic instability - and hence of most interest to policy-makers - is that which, while it ultimately returns to values predicted by a long-run demand-for-money function, exhibits the most severe short-run instabilities (i.e., in econometric work, it has the largest residuals).

and it may be useful to differentiate agents according to the extent they depart from monetary equilibrium

The last paragraph may have caused some alarm, as it appears to say that in their statistical work economists should look for a monetary aggregate which has a loose-fitting relationship with expenditure, not a tight-fitting relationship. The situation is not quite as strange as that. Suppose it is accepted - for convincing reasons to do with the nature of monetary institutions and the logic of the real balance effect - that only broad money plays a role in the determination of national income. Then insights into the process of monetary equilibration might be obtained by seeing whether certain agents tend, for most of the time, to be closer to equilibrium than others.

Personal sector keeps closer to equilibrium than company and financial sectors,

If one type of agent were on average closer to equilibrium than others, the expectation would be that its demand-for-broad-money function would be more stable and have better statistical properties than the demand-for-broad-money functions of the other agents. In fact, econometric work in the UK finds that the personal sector has a more stable demand for broad money than the corporate sector. This conclusion is robust and has been identified by several researchers. (2) Further, but more controversially, the corporate sector's demand for broad money appears to be more stable than the financial sector's. The financial sector's demand for money seems to be difficult to model and to explain.(3) An implied conclusion might seem to be that the financial sector's money holdings are irrelevant to national income determination and so can be ignored. That conclusion - which has been drawn by a number of commentators and analysts - is extremely foolish and could lead to serious policy blunders.(4) I implore the MPC not be misled on this question.

The last paragraph has argued that the various types of agent found in the economy are systematically different in their management of broad money holdings. Specifically, some (persons) keep their broad-money holdings close to equilibrium most of the time, whereas others (companies, financial institutions) do not. This contrast in sectoral money holding behaviour is of great importance for the unfolding of the real balance effect in practice. A well-defined change in the rate of aggregate broad money growth is accompanied by an even more pronounced change in the rate of growth of the money holdings of companies and financial institutions. In all three of the boom-bust cycles of the last 25 years the upturn in broad money growth was associated with remarkable accelerations in the rate of growth of the corporate and financial sectors' money holdings, and the downturn with clear decelerations (or even contractions). (See the accompanying chart.)

with the result that a change in the rate of aggregate money growth is amplified in the corporate and financial sectors

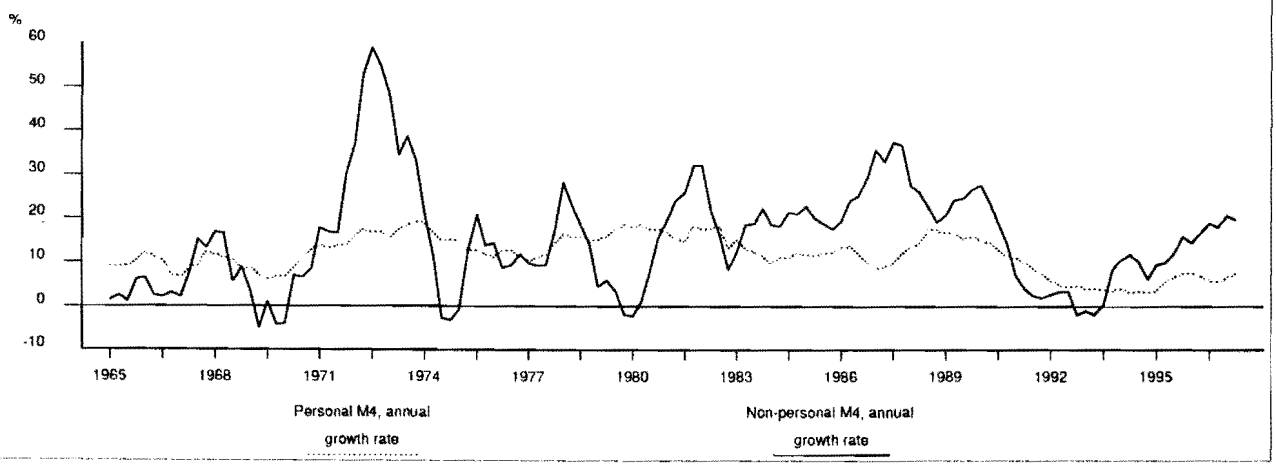
In other words, whereas the personal sector quickly compensated for the shocks of sharply fluctuating money growth during the boom-bust period, companies and financial institutions were sometimes in extreme monetary disequilibrium. As they attempted to bring their real money balances back into line with the long-run equilibrium demand to hold them, they had to take vigorous financial action of various kinds. In essence, they tried to convert excess money balances into other assets during booms or non-monetary assets back into money during busts.

Disparity between slow-growing stock of real capital assets and large swings in growth of non-personal money holdings

In any society the capital stock is relatively stable, growing in the UK's case by perhaps 2% to 3 1/2% a year in real terms. The divergence between, on the one hand, a capital stock growing in real terms at little more than 2% a year and, on the other, the annual growth rate of non-personal money holdings oscillating from more than plus 40% to minus 5% had an inevitable result. Whereas the underlying capital stock was fairly rigid from year to year, the value of claims on the capital stock (securities, title deeds) was unconstrained. The booms were

Personal and non-personal M4 growth

Chart shows that growth of non-personal M4 (i.e., M4 held by companies and financial institutions) is far more volatile than personal M4.



therefore marked not only by excess liquidity in the corporate and financial sectors but also with dramatic asset price inflation, and the busts by liquidity squeezes and asset price weakness.

Asset price volatility accompanied by large swings in investment and macroeconomic instability

As Tobin has argued (with his concept of the "q"), investment can be interpreted as a response to the gap between the demand price (i.e., the market valuation) of assets and their supply price (i.e., their replacement cost). So it was no coincidence that the unusually large fluctuations in broad money growth seen in the UK economy were accompanied not only by far more volatile asset prices than in other industrial economies, but also by greater instability in investment and national output. The asset price volatility was glaring in the property market (house prices and housing land, especially the prices of houses and housing land in London, because homes in London are owned by the rich, who are most susceptible to movements in other asset prices; commercial property of all kinds; farm land). The construction industry took the brunt of the macroeconomic instability, with its output showing far greater fluctuations than the economy as a whole.

Two comments on the theoretical affinities of these ideas,

Two comments may be ventured at this point, to locate the discussion in the theoretical debate about the role of money. First, the account of the transmission mechanism here has much in common with so-called "buffer-stock monetarism", in which agents are assumed to hold money with the purpose of protecting them from financial shocks and keeping expenditure in line with permanent income. Secondly, the discussion has emphasized the role of monetary disequilibrium in the determination of asset prices, and the centrality of asset prices in the determination of investment and the course of the business cycle. Of course, the purchase and sale of securities are as much "transactions" as the purchase and sale of consumer goods, including the trivial consumer goods (groceries, newspapers, bus fares and such like) that are normally bought with notes and coin. The claim is sometimes made that "the transactions demand for money" is peculiarly the province of small-item retail purchases, so that notes and coin are somehow more "money-like" than deposit accounts. One result is the compilation of Divisia indices in which notes and coin, current accounts and other forms of "retail money" have a higher weighting than deposit accounts and "wholesale money".(5)

i. Resemblance between this account and "buffer-stock monetarism"

ii. Asset prices and investment crucial to the business cycle

Virtual irrelevance of small transactions and norrow money to the business cycle

An implication of our discussion is that the calculation of such indices, just like the related emphasis on narrow-money aggregates, is misconceived. Indeed, the distinction between transactions money and non-transactions money is not merely unhelpful, but amounts almost to a denial of the traditional definition of "money". Non-interest-bearing current accounts may appear to be rather different assets from wholesale deposits with an original maturity of, say, six months, because the wholesale deposits are immobilized for six months. But, in practice, banks always help customers to use wholesale deposits as and when they wish, perhaps with a small interest penalty. Corporate and financial sector deposits, predominantly "wholesale" in nature, are therefore available at any moment for transactions in capital assets. These transactions, not piffling small-item purchases with notes and coin (i.e., M0), lie behind the instabilities

in asset prices and capital expenditure which are characteristic of a modern capitalist economy.

2 1/2% inflation cannot be reconciled in the long run with a. 10%-a-year growth of aggregate broad money or b. 20%-a-year growth in financial sector money

The purpose of the discussion so far has been twofold. First, it has insisted that a broad money growth rate of over 10% a year cannot be reconciled in the long run with an inflation rate inside the official target band, because the real balance effect will ultimately ensure that real money balances grow at a rate not that different from the trend rate of increase in real national output. Secondly, it has emphasized that - in an economy with a sophisticated financial system and a large stock of capital assets - the real balance effect is concerned substantially with the determination of asset prices and agents' subsequent attempts to equilibrate the demand and supply prices of capital assets. The money balances involved here are, almost exclusively, the wholesale deposits held by the corporate and financial sectors. It follows that - contrary to many assertions by a wide variety of commentators - policy-makers, and particularly the members of the MPC, need to monitor the growth rate of these money balances. Macroeconomic stability and an annual inflation rate of 2 1/2% are incompatible with continued growth in financial institutions' money holdings of over 20% a year.

Acceleration in money growth in 1995 due largely to restoration of health to banks' balance sheets

On the face of it, a significant rise in interest rates cannot be avoided. But the question has to be asked, "could broad money growth slow down with current interest rates?". Undoubtedly, a major reason for the upturn in money growth in early 1995 was the transformation of the banking system's capital position. In the early 1990s bad debts and loan loss provisions were exceptionally high, and in 1992 they more or less wiped out banks' operating profits. After paying dividends and tax, retentions were minimal and banks lacked the capital to expand their balance sheets. By contrast, last year bad debts were modest and banks' pre-tax profits were at five times the 1992 level. Even after large dividend increases, banks had excess capital. The over-supply of capital in banking will be exaggerated by the current wave of building society de-mutualisations. The supply of credit is therefore abundant, a point amply confirmed by the narrowness of margins in the syndicated credit market. Unless something unusual now happens to the demand for credit, the expectation must be for continued rather fast growth in banks' assets and deposit liabilities. Monthly totals for new bank credit have in fact been higher in early 1997 than ever before and the growth rate of the stock of lending has been faster than at any time since the late 1980s.

Economy has similarities to past boom-bust cycles,

So far the discussion has been all one way, with an explanation of the dangers to the inflation target from rapid money growth followed by an account of the precise mechanisms at work and a reasoned surmise that - at present interest rates - money supply growth will not decelerate. Many features of the economy today resemble the upswing phase of previous boom-bust cycles. But one variable does not fit, the exchange rate.

except that the exchange rate defies theory that high money growth should be associated with depreciations

The kernel of the monetary theory of the exchange rate is simple. The exchange rate is a price, the price of one currency in terms of another, and - like any other price - it is determined by supply and demand. If one currency is over-supplied relative to another currency, its value in terms of the other currency falls. A currency (A) is over-supplied relative to another currency (B) if the quantity of A (i.e., the money supply of the country whose banking system issues A) rises faster than the quantity of B (i.e., the money supply of the B country), unless the demand to hold A is increasing more strongly than the demand to hold B. The demands to hold the two currencies depend, among other things, on the relative rates of increase in nominal incomes and expenditures in the countries. If trend rates of real output growth in countries A and B are the same, the country with the higher rate of growth of money has a depreciating currency. In other words, when a country has rapid money growth by international standards (like the UK today), its currency ought to be falling on the foreign exchanges, not rising.

Changes in the interest rate differential qualify this analysis

Admittedly, the introduction of interest rates complicates this analysis. A higher real rate of interest on currency A may for a time make it attractive relative to currency B, even though the quantity of B is increasing more slowly. Sharp changes in the interest rate differential may for a time override the influence of relative quantities, so that a country with a high rate of money supply growth may - strangely - see its exchange rate appreciating. However, in the medium and long runs large differences in real interest rates between countries ought not to persist. Capital flows will equalize the marginal rates of return on investments in different countries. Ultimately, exchange rates - like any other price - have to be driven by the forces of supply and demand.

Monetary theory appears not to work at present, but i. interest rate differential has widened, and

What does this approach have to say about the pound's appreciation since last August? At first sight, the answer has to be that its explanatory power is poor. As the rates of broad money growth seen in the UK since early 1995 have been much above those in the rest of Europe, the pound ought to have depreciated. The appreciation is anomalous. However, two comments may help to rescue the monetary analysis of the exchange rate. The first is, of course, that the interest rate differential has moved strongly in sterling's favour, relative to other European currencies, since last summer. Also relevant are fears that the new single European currency, due to be introduced in January 1999, will be weak because of the expected participation of the Mediterranean countries.

The second is specific to the market in foreign exchange. In the long run any bank deposit in one currency can be converted into a bank deposit in any another currency. So it is the total money supplies (i.e., inclusive of all bank deposits) that play a role in the determination in the exchange rate. The value of all the broad money totals in the industrial world is over £10,000b., which dwarfs the UK's M4 (£700b.). If people and companies around the world have a sudden craze for sterling, the exchange rate could soar wildly, regardless of the UK's fundamentals. Of course, in practice most of the money supplies around the world are kept in balance relative to the expenditures, incomes and wealth of other countries. Periods of extreme over- and under- valuation relative to

purchasing power parity (i.e., an exchange rate which equalizes prices in traded goods, when they are denominated in a common currency) are exceptional. (See the chart below. The pound has been inside a corridor defined by 15% departures from PPP for most of the period under review.)

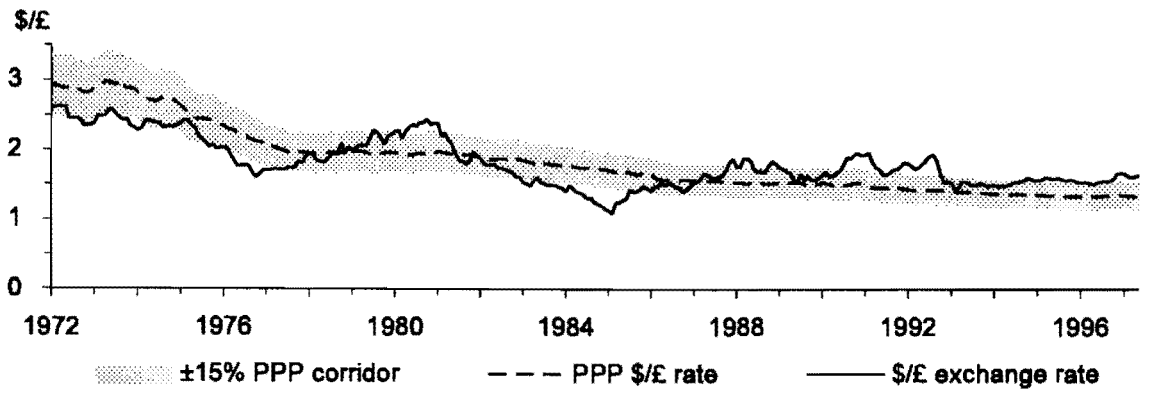
ii. last summer - before the big exchange rate move - foreign residents were short of sterling and UK residents were long of foreign currencies

However, to some extent UK residents hold foreign currency and foreign residents hold sterling. Data on the extent of such holdings inside the UK banking sector are available on a monthly basis. Because such money is not local currency for either UK or foreign residents, they have considerable discretion about the size of their holdings. The interesting point here is that foreigners' holdings of sterling, after climbing strongly in the 1980s, were virtually unchanged between the end of 1990 and the summer of 1996 (at almost £86b.), whereas UK residents' holdings of foreign currency more than doubled from £53.7b. at end-1990 to £117.1b. at the end of the second quarter last year.

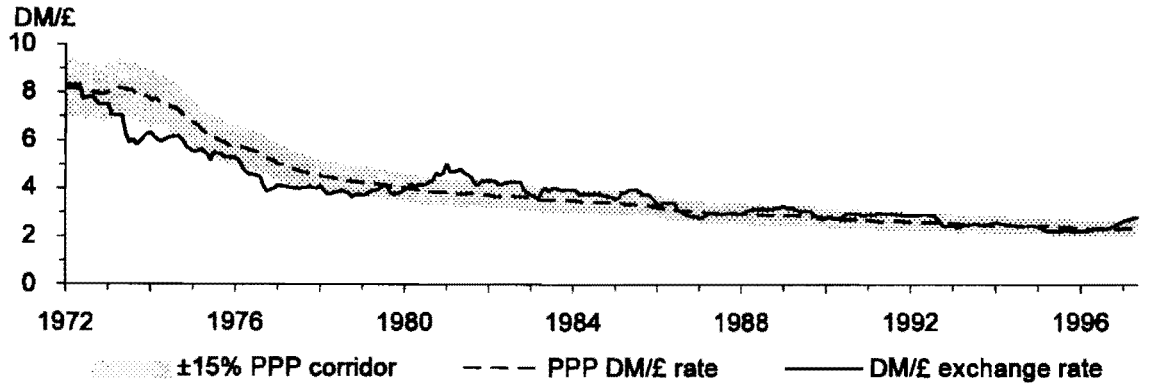
The pound's over-valuation

Chart shows that most of the time the pound stays inside a corridor 10% either side of "fair value", i.e. the purchasing-power-parity value (based on relative producer price inflation) calculated by Lombard Street Research.

1. The $/£ rate



2. The DM/£ rate



These numbers suggest one interpretation of the abruptness of the recent exchange rate move. Last summer foreigners were under-weight in sterling, which they had disliked since the ERM debacle in 1992, and UK residents were over-weight in foreign currency. As expectations of rising sterling interest rates strengthened, foreigners tried to add to their sterling holdings and UK residents wanted to lose foreign currency. Both types of agent were correcting imbalances in the currency composition of their money holdings. After the huge exchange rate move since last August, it seems unlikely that more of this adjustment is to come.

At any rate, the pound's appreciation is obviously a counterweight to the case for higher interest rates based on trends in the money supply and domestic demand. The MPC's problem is to strike the right balance between the domestic argument for higher interest rates and the external argument for lower interest rates. Of course, this sort of dilemma is not new. For a large country a sensible strategy is to base interest rates on money supply trends; for a small country policy should focus on the exchange rate. But the UK has a medium-sized economy. As a result, a convincing case for an exclusive concentration on either domestic or external is difficult to make.

The dilemma of a medium-sized nation

In late 1992, after the pound's disastrous expulsion from the European exchange rate mechanism, I urged that interest rate decisions should mostly be based on targets for broad money growth (as envisaged in the original Medium-Term Financial Strategy in 1980). But the exchange rate should have a role "if it reaches extreme values". If the pound stayed within a corridor 10% either side of its "fair value" (as determined by a calculation of the purchasing power parity of the effective exchange rate), it should be ignored in interest rate decisions; if it became between 10% and 15% under- or over-valued relative to fair value, policy-makers should use their discretion; if it became more than 15% under- or over-valued, they should override the money supply in their decisions. At present the pound is more than 15% over-valued relative to both the dollar and the mark.

With pound more than 15% overvalued,

My conclusion is that you should be prepared to push interest rates up substantially over the next year or two, but that the pace of the increase should be tempered by the pound's over- valuation. On the rules I proposed in late 1992 there would be no harm in waiting two or three months before the next increase. In the end the expectation has to be that the pound will fall, perhaps by over 10%. If and when that happens, you should have no hesitation in raising base rates. My guess is that base rates will have to go to 8% or above to reduce M4 growth from over 10% a year to 5% a year or less.

it is sensible to go slow on interest rate increases, even though these are obviously needed on domestic grounds

What about other dimensions of monetary policy? One odd feature of the new monetary arrangements is that you have full responsibility for interest rates, but the Treasury retains control over debt management. Debt management (conducted by open market operations at the medium and long ends, mostly with non-banks) can be a useful supplement to interest rate changes (achieved by open market operations at the short end, mostly with banks). It should certainly not be antagonistic to interest rate decisions. In current circumstances

Debt management at long end should be used actively

new issues of government debt should be concentrated at the long end, with the deliberate intention of reducing non-banks' money holdings, particularly financial institutions' money holdings.

to curb excessive money growth

That may lead to "over-funding", by which I mean that debt sales to non-banks may exceed the PSBR. Any resulting complications in money market operations would not bother me. They are a technical matter, of no wider significance for the wealth, health and happiness of our nation. The important objective over the medium term must be to curb broad money growth so that it is once again compatible with the Government's inflation target.

Notes

1. This point - which I regard as fundamental - was emphasized in my paper 'Broad money vs. narrow money' *The Review of Policy Issues*, vol. 1, no. 5, Autumn 1995, pp. 13 - 27.

2. See, for example, T. Congdon and S. Ward 'The personal sector's demand for M4 balances', *Lombard Street Research Econometric Research Note*, May 1993, and more recently R. Thomas 'The demand for M4: a sectoral analysis, part 1 - the personal sector' *Bank of England Working Paper Series*, no. 61, June 1997.

3. But R. Thomas 'The demand for M4: a sectoral analysis, part 2 - the corporate sector' *Bank of England Working Paper Series*, no. 62, June 1997, finds relationships between financial institutions' money holdings and a small number of independent variables, including their total financial wealth, which "appear to be stable" (p.40). The implications of these findings for the transmission mechanism of monetary policy are nevertheless said not to be clear.

4. See, for example, R. Bootle 'M4: leading us up the garden path again' *HSBC Markets' Greenwell Gilt Weekly*, 26th February 1996, especially p.7, and P. Warburton 'The misunderstanding of money' *Fleming Research Economic Comments*, 8th May 1996.

5. See, for example, P. Spencer 'Portfolio disequilibrium: implications for the Divisia approach to monetary aggregation' *The Manchester School*, June 1994.