

Monthly Economic Review

No. 181, July/August 2004

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Four hikes and a debate

When and where will interest rates peak?

The output gap approach to thinking about interest rates

Sterling base rates have moved up from 3 ½% in early November last year to 4½% at the time of writing (and perhaps higher when you receive this). At what level will they peak? And when will we know that the job of monetary tightening has worked? Two ways of approaching these questions are worthwhile. The first way – and undoubtedly the dominant one at the Bank of England today – is to make a forecast of demand and output over the next two years or so, and to accompany this by a judgement about where the level of output will be relative to trend. The aim is to keep output as close as possible to its trend (i.e., to have a so-called “output gap” of zero), in the reasonable belief that a zero output gap will be associated with stable domestically-generated inflation. Since inflation is on target now, inflation ought to remain on target, more or less, in 2005 and 2006.

and the monetary approach

But there is another method, which exploits the undoubted long-run similarity of the growth rates of money and nominal gross domestic product. In rough terms, an increase of 5% a year in nominal GDP is consistent with the inflation target of a 2%-a-year increase in the consumer price index. Further, experience over the last 30 years suggests that money supply growth tends to run a little faster than that of nominal GDP. So annual money supply growth of 6% or at most 7% is acceptable. Again, in rough terms, the growth of bank deposits (which make up most of the money supply) is equal to the growth of bank credit. It follows that – to be confident that the situation is under control – the underlying growth rate of bank credit ought not to be much above 6% - 7% a year. If bank credit is expanding much more quickly than this, interest rates are too low; if bank credit is in line with the 6% - 7%-a-year figure (or, pragmatically, a 5% - 9% band), interest rates have been set appropriately for the purposes of domestic credit and money management.

Cut of about a third in mortgage approvals may be needed to dampen money growth sufficiently

What are the latest figures? In the year to June M4 increased by 7.8%, which is a touch on the high side, but not disastrous. But, if the banks had not sold some of their loans in the secondary market, M4 lending would have risen by over 12%. As so often over the last 30 years, one particular category of credit – lending secured on dwellings – was extremely buoyant. It advanced by 15.3% in the year to June. Since it is the largest single type of lending carried out by the UK's banks and building societies, interest rates have plainly not risen enough. A guide to the future is provided by the monthly figures on mortgage approvals. These soared from an average of under £10b. a month in 1999 to all-time peaks of £26b.-£27b. a month last autumn. It is an encouraging start that the rise in base rates has checked the growth. But a significant decline in mortgage approvals – perhaps of as much as a third – is needed if credit trends are again to be compatible with the required moderation in monetary growth. Base rates in 2005 will have to lie between 5% and 6%, and probably nearer to 6% than 5%, if the mortgage boom is to be dampened sufficiently.

Professor Tim Congdon

4th August, 2004

Summary of paper on

‘The role of money in the British business cycle’

Purpose of the paper

Lombard Street Research is now 15 years old. This research paper asks whether some of the key ideas which motivated its foundation have proved valid in practice.

Main points

- The core principles of Lombard Street Research analysis are standard in macroeconomics,
 - *that national income is in equilibrium only when the demand to hold money balances is equal to the money supply (i.e., the quantity of money balances actually in existence), and*
 - *the demand to hold money is a stable function of a small number of variables.*
- The UK had a genuine monetarist counter-revolution in 1979 and 1980, in that income policies and Keynesian fiscal fine-tuning were dropped. But huge debates - which are still unresolved - developed about the implementation of anti-inflationary monetary policy.
- The motive for establishing Lombard Street Research in 1989 was to continue the monetary research which had successfully forecast that the marked acceleration in broad money growth from 1985 to 1987 presaged a boom and rising inflation.
- Three regularities had been noticed in the 25 years of monetary data from 1963 to 1998,
 - *that the personal/household sector’s demand-for-money function was stable,*
 - *that companies’ liquidity ratio (i.e., their M4 holdings divided by their M4 borrowings) had a stable long-run average value, while occasional departures from this value had clear effects on their behaviour, and*
 - *that the long-term savings institutions also have a stable long-run liquidity ratio (i.e., M4 divided by their total assets).*
- Lombard Street Research has tracked these sectors’ money-holding behaviour in the 15 years since its foundation. The personal/household sector’s money demand function has remained stable; companies’ liquidity ratio in the 15 years to 2003 had a virtually identical average value to that in the 17 years to 1988 (see pp. 16 - 17); and the institutions’ liquidity ratio in the 15 years to 2003 also had a virtually identical average value to that in the 16 years to 1988 (see pp. 18 - 19).

This paper was written by Professor Tim Congdon.

The role of money in the British business cycle

Key ideas in Lombard Street Research's work 15 years from its foundation

15 years of monetary analysis and forecasting at Lombard Street Research

Lombard Street Research was set up in July 1989 and is now 15 years old. My main aim in establishing the company was to maintain an approach to macroeconomic analysis which I had developed in the 1970s and 1980s as a journalist on *The Times*, and (in much more detail) as an economist at the stockbrokers, L. Messel & Co., and the investment bank, Shearson Lehman (now "Lehman Brothers"). (1) I believe that the approach is valid in any economy, but I was particularly familiar with the data and institutions in the United Kingdom. In the three years to 1988 I worked with Mr. Peter Warburton (whom I had recruited from City University Business School in 1986) on macroeconomic forecasts for the UK. These forecasts - which incorporated relationships which I had been exploring in my work over the previous 15 years - correctly warned that the high money supply growth in the "Lawson boom" of those years would lead to strong demand growth and rising inflation. They contrasted with other forecasts of the time, most of which were hopelessly inaccurate. My ambition was that Lombard Street Research would prove a viable home both for a continuing UK macroeconomic forecast with a large role for money and for related, but more general economic research. The purpose of this paper is to outline the development of my thinking on macroeconomic policy, to describe some of the key ideas in the Lombard Street Research approach and to see how well they have stood the test of time. (2)

Key ideas not original

The two core principles of the approach are not original; they are found, in one form or another, in virtually every macroeconomics textbook. They are that,

- national income is in equilibrium only when the demand for money is equal to the supply of money (i.e., when monetary equilibrium prevails), and,
- the demand to hold money balances (i.e., the demand for money) is a stable function of a small number of variables, notably income and the attractiveness of money relative to the nearest alternative asset.

and they should not be controversial

The first principle is integral to a large number of economic models. For example, it is contained in the IS-LM model of national income determination which was devised by Hicks in 1937 as a way of reconciling Keynes' *General Theory* with "the classics". (3) As the Hicks' paper is now standard fare in undergraduate courses, millions of people ought to have received instruction on the matter and understood it. A legitimate expectation is that it should be uncontroversial. The second principle is sometimes deemed to have an ideological tinge, since much of the most influential work in estimating demand-for-money functions was carried out by Professor Milton Friedman, a champion of free market economics. But demand functions can be estimated, as a technical matter, for any product. No one would regard the statement "the demand for socks (or potatoes or foreign

But they imply that inflation is caused by excess money growth, which is controversial

holidays) is a stable function of a small number of variables” as politically contentious.

The two core principles in Lombard Street Research’s work have a logically necessary implication. This is that - when the supply of money changes - so also does the equilibrium level of national income. (4) A further point follows quickly. It is common sense that nations cannot make themselves rich by the mere printing of money. In the long run real output must depend primarily on real considerations, such as the number of working-age people and their degree of skill, and the accumulation of the capital equipment with which they work. Hence, if the money supply is rising at a faster rate than the trend rate of output growth, an increase in the price level is likely. Indeed, it would hardly be surprising if the experience of many countries over extended periods were that the annual % rate of inflation approximated the annual % rate of money supply growth minus the annual % rate of output growth. (And that is what is found in the real world.)

Opposition to these ideas from corporatism and Keynesianism in 1960s and 1990s

It has always seemed to me that these ideas ought to be accepted by anyone interested in economics. To repeat, the two core principles cannot really be disputed, and the implied relationship between money and inflation follows as a matter of logic. However, for all of the past 30 years the ideas have been controversial to a greater or lesser degree. Initially much of the difficulty was due to opposition from entrenched political positions. (5) The two most important such positions might be called “corporatist” and “Keynesian”, and were both expressions of substantial bodies of thought. As they were for some years very influential in British policy-making, they are part of the story that I want to tell here, even though their heyday preceded the founding of Lombard Street Research.

1. Refutation of corporatism

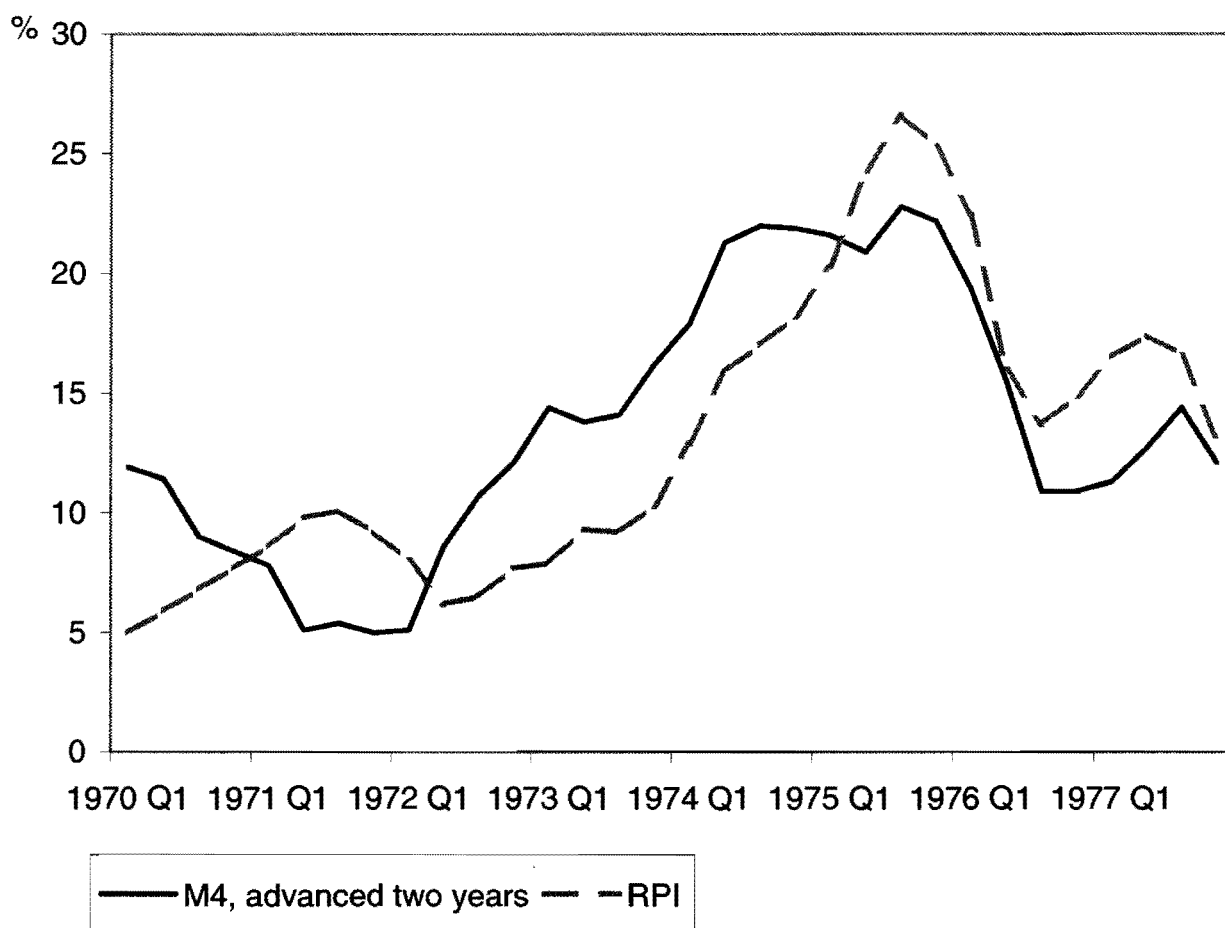
In the 1960s and 1970s numerous commentators insisted that price inflation is better correlated with wage inflation than with the money supply and that wage increases reflected the relative power of bargaining groups in society. For such commentators the answer to rising inflation was for the government to negotiate with the most significant bargaining groups (such as trade union leaders and senior industrialists) and, with their agreement, to impose a limit on pay and price increases. The limit might have to be set out in statute and enforced by a price control bureaucracy. The resulting pattern of politics has been described as “corporatist”, since it viewed the economy as most likely to work well if everyone cooperated as in a single organic body. (6) Successive British governments of the 1960s and 1970s, from both the major parties, were beguiled by corporatist thinking into implementing prices and incomes policies.

The corporatist and monetary theories of inflation were subjected to a critical test

The first boom-bust cycle

Money and inflation in the Heath-Barber boom

Chart shows % annual change in M4, advanced two years, with % annual change in retail price index, quarterly data.



Source: National Statistics website

In mid-1973 no one in the Treasury, the Bank of England or the so-called “leading forecasting groups” (such as the highly Keynesian National Institute of Economic and Social Research) came near to forecasting the disasters to the British economy that were to unfold over the next two years. Most of them believed that inflation would not much exceed 10%, as they thought that incomes policy would continue to work. Exceptions to this complacency were Mr. Peter Jay, economics editor of *The Times*, who warned of “a boom that must go bust”, and Professor Alan Day of the London School of Economics, who wrote a column in *The Observer*. I started to work on *The Times* in October 1973 and was much influenced by Jay, who in turn had been influenced by Friedman when working in the USA in the late 1960s. I had to write monthly stories on the money supply and have been doing so – in effect – ever since.

Failure of incomes policy in early 1970s

between 1972 and 1974, when a Conservative government imposed a statutory incomes policy (“the Counter-Inflation Programme”). The prescribed rates of increases in pay and prices were far beneath the contemporaneous rate of increase in the money supply. The outcome was a clear validation of the monetary theory. Rapid money supply growth led to a wild boom in 1972 and 1973, and pay increases accelerated. In 1974 a sharp upward adjustment in the relative pay of coalminers - far ahead of the statutory limit - was necessitated by the rising price of oil. A high rate of general pay inflation developed, as one group after another tried to copy the miners. To several important figures in the Conservative Party, notably Sir Keith (later Lord) Joseph and Mrs. Margaret (later Lady) Thatcher, prices and incomes policies had been discredited, and they took the view that the Conservatives must in future adhere to a monetary theory of inflation. Whatever else may be said about the 18 years of Conservative rule from Thatcher’s victory in the 1979 general election, they did show that inflation could be controlled by monetary means.

2. Defeat of Keynesianism

Support for incomes policies has died. Keynesianism - understood as a body of theoretical concepts and principles - is, by contrast, very much alive. At the policy-making level “Keynesianism” in the 1970s had a fairly specific meaning. The starting point was the textbook proposition that national income and employment depended on aggregate expenditure (i.e., on consumption plus investment plus government spending plus net exports). If aggregate expenditure were too low, the government should increase the budget deficit (by raising its own expenditure or cutting taxes); if, on the other hand, aggregate expenditure were too high and risked inflation, the government should reduce the deficit or even run a surplus. In short, fiscal policy should be used to manage demand and, as far as possible, to maximise employment.

When inflation accelerated to over 25% in 1975 after the money supply excess of the 1970 - 74 Conservative government, a number of economists advocated that money supply growth should be reduced in order to bring inflation down to an acceptable rate. This recommendation - usually said to originate with Milton Friedman - challenged the Keynesian position on national income determination and the appropriate structure of policy-making. To simplify, the “monetarists” (i.e., very roughly speaking, the disciples of Milton Friedman) believed that nominal national income was determined by the quantity of money and that inflation should be controlled by monetary policy, whereas the Keynesians believed that national income was determined by expenditure and that aggregate expenditure could be managed by fiscal policy. It is hardly surprising that in the mid- and late 1970s policy was often in a muddle, with the Keynesians advocating fiscal reflation to increase demand and employment, and the monetarists favouring reductions in the rate of money supply growth to lower inflation. A key issue was, “if the government has made a commitment to a particular rate of money supply growth, will an increase in

Sharp clash between monetary and fiscal policies in 1970s

the budget deficit have the expected effects on demand and employment?”. To put the matter slightly differently, “will fiscal policy dominate the money supply target or will the money supply target dominate fiscal policy?”.

My view was that the money supply would dominate. In an article (‘The futility of deficit financing as a cure for recession’) in *The Times* on 23rd October 1975 I argued that – with a given growth rate of the money supply – an increase in the budget deficit would eventually have no effect on equilibrium national income. The extra budget deficit would have to be financed from an existing pool of savings and would push up interest rates. To the extent that the increase in the budget deficit added to demand in the short run the rise in interest rates would deter (or “crowd out”) investment and reduce demand, with a net long-run demand effect of zero. In other words, once a government had made a commitment to a money supply target, Keynesianism – in the sense of fiscal fine-tuning – was redundant.

Need to subordinate fiscal policy to monetary targets

However, that did not mean that the budget deficit should be ignored. The pattern of its financing had a potentially powerful bearing on monetary policy. Crucially, if a budget deficit were financed (typically by sales of very short-dated debt such as Treasury bills) from the banks, that would expand banks’ assets and, on the other side of the balance sheet, their deposits. The new deposits were an increase in the quantity of money. It therefore seemed to me that an expansionary fiscal policy might make it more difficult to pursue an anti-inflationary monetary policy. In a paper presented to the Money Study Group in Oxford on 14th September 1976 I asked the question, “if it is accepted that money supply targets should be central to macroeconomic policy, what is to be done about fiscal policy?”. My answer was that fiscal policy should be subordinated to the money supply target. If the government wanted to secure low interest rates and encourage more private sector investment (i.e., “crowding-in”), the budget deficit would have to be lowered in line with reductions in the rate of money supply growth. I also argued that a continuous rise in the ratio of the public debt to national income must be unsustainable and that fiscal policy should be framed to keep the debt/income ratio stable.

Announcement of medium-term financial strategy in 1980 the end of Keynesianism, in policy sense, in UK

In 1977 and 1978 I pressed the ideas further, by suggesting in newspaper articles and evidence to the Expenditure Committee of the House of Commons that year-by-year declines in the budget deficit ought to accompany year-by-year reductions in money supply growth, as part of a medium-term financial plan. I was far from alone in noting the inter-dependence of fiscal and monetary policy. In particular, Terry Burns and Alan Budd at the London Business School also favoured a medium-term strategy with combined monetary and fiscal targets. When Burns became Chief Economic Adviser to the newly-elected Conservative government in 1979, he pushed the proposal inside the Treasury. The first Medium-Term Financial Strategy, with year-by-year targets for lower money supply growth and a lower

budget deficit (or “public sector borrowing requirement”) as a %age of GDP, was announced in the 1980 Budget. This was the end of Keynesianism, *in the policy-making sense*, in the UK. Since then no government has adjusted budget deficits to influence demand and employment. (7)The collapse of Keynesian influence on policy-making was evidenced most dramatically in the 1981 Budget, when a large increase in taxes was announced despite the weakness of demand in the economy. 364 economists wrote a letter to *The Times* in protest, but were ignored. (For clarity, I am not claiming that Keynesianism, *in the sense of a distinctive body of theory*, has been sidelined or refuted.)

3. Debates about money and the transmission mechanism in the 1980s and 1990s

So in 1980 and 1981 it seemed that the monetary theory of the determination of national income and inflation had been adopted by the government, and that in policy-making circles it had become an accepted orthodoxy. This impression was misleading. The next few years were to see considerable difficulties in the application of monetary ideas, and the emergence of a far more eclectic, pragmatic and intellectually confused approach by policy-makers. It should be emphasized that the new pragmatism did not include a return to incomes policies and fiscal fine-tuning, and that the UK therefore genuinely did have a “monetarist counter-revolution”. Corporatism and Keynesianism were renounced by policy-makers in 1979 and 1980, and have never come back. Nevertheless, the emphasis on money supply targets as the centrepiece of policy was heavily diluted. As an economist in the City I commented on monetary developments every week in the early 1980s (mostly in *Messel's Weekly Gilt Monitor*) and spent much of my time defending the system of money supply targets which had been introduced in the late 1970s.

Analysis of different sectors' balance sheets and money holdings facilitated by good data

Every quarter I prepared a document, called *Financial Analysis*, which considered the financial position and monetary behaviour of the economy's main sectors. Apart from the banks and the public sector, these were the personal (or household) sector, the corporate sector (i.e., companies as such, or “industrial and commercial companies”) and the financial sector (i.e., “non-bank financial institutions”). I was fortunate to have an abundance of data to analyse, because – following the recommendations of the Radcliffe Report of 1959 – a vast amount of information about the banking and financial systems has been compiled in the UK since 1963. It was my work for *Financial Analysis* that led me to organize my ideas about the so-called “transmission mechanism” of monetary policy.

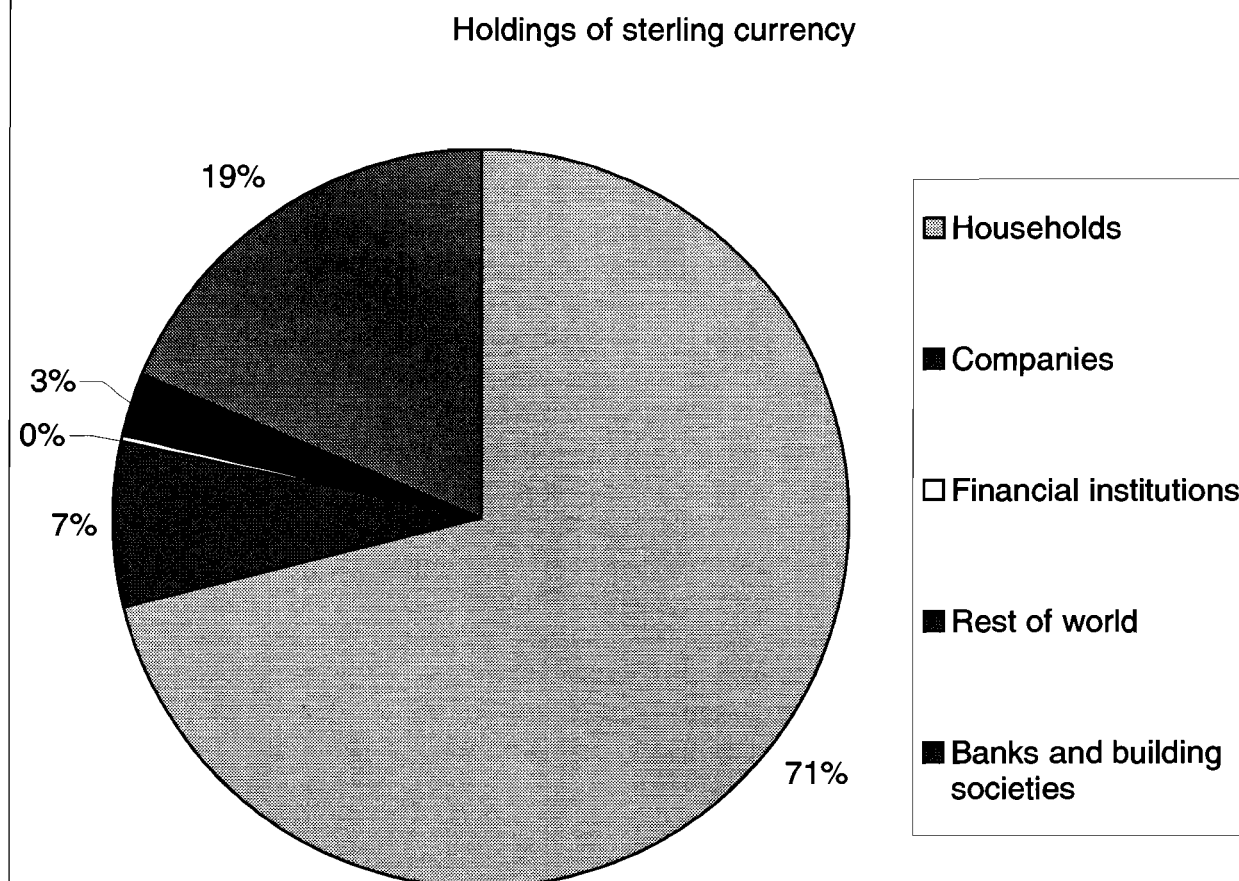
This analysis showed that only an all-inclusive money measure relevant to causing the cycle

One point had seemed obvious to me from the early 1970s, although (as I gradually realised) it was far from obvious to most other economists. This point was that – if we want to understand the relationship between the quantity of money and the spending behaviour of those agents that matter to the business cycle – only a broadly-defined, all-inclusive money supply measure is of interest. The so-called

Who holds M0?

Negligible currency holdings of companies and financial institutions

Chart shows relative size of holdings of sterling notes and coin by the economy's main sectors at the end of 2003.



Source: Financial Statistics

Large payments – payments of a size sufficient to settle asset purchases and sales – are very cumbersome if they are carried out in notes (i.e., in the dominant type of money in M0). Non-bank financial institutions, companies and wealthy individuals – the agents whose decisions determine asset prices – therefore hold only tiny note holdings relative to their assets. This is obvious from the chart, where non-bank financial institutions have hardly any notes or coin at all, and companies' notes and coin are only a tenth of the household sector's. At the end of 2003 the household sector's currency holdings were £31.2b., while the UK had about 49m. people above the age of 14 (i.e., of money-holding age). So the average note holding per UK "adult" was almost £650. But very few people in fact have a note holding as large as this, implying that a high ratio of household M0 is held inside the black economy.

“narrow money” measures have some information value, but many items of non-monetary information have much more. More critically, narrow money measures have little or no causal role in the economy. The reason that narrow money has no causal role in the economy is quite simple, but it may help to elucidate the matter in a few paragraphs.

This is an implication of applying the idea of “general equilibrium” to monetary economics

One of the most compelling theoretical constructs in economics is the notion of a “general equilibrium”. Simplifying greatly, this is a situation in which the demand and supply functions for all products intersect at their equilibrium points, setting prices and quantities in the economy. Money is of course an asset which lasts for many periods, not a product or service. Nevertheless, as noted in the opening paragraphs to this paper, it is an essential aspect of a general equilibrium that the demand for money should equal the money supply. (8) If the demand for money differs from the money supply, general equilibrium does not prevail. Agents try to eliminate the excess (or shortage) of money by spending above (or beneath) income or by asset re-dispositions. My view – much influenced by the boom-bust cycle of the 1970s, but also by wider reading of economic history – is that most cyclical instabilities are the result of such “monetary dis-equilibrium”.

Any narrow money measure is only a sub-set of money

In other words, fluctuations in asset prices and expenditure are largely attributable to mismatches between the demand for money and the money supply, while these mismatches are due to big swings in money supply growth due, typically, to mistakes in interest-rate setting by the central bank (although they can have many other causes). Plainly, in this story excesses or deficiencies of money balances *cause* the adjustment of spending plans and asset portfolios, and the two pivotal parts of the process are the decisions taken by agents in their balancing of money against goods, and of money against assets. In this context the trouble with any measure of narrow money is that it is only a sub-set of money as a whole. For example, in the UK consider the narrow money measure, M0 which consists mostly of notes and coin, and includes no bank deposits. It is less than 5% of the M4 aggregate, which is predominantly bank deposits and includes virtually all conceivable money balances. If agents have excess or deficient M0, they can adjust their holding of M0 by transfers of funds between M0 and a non-M0 money balance inside M4. (For example, they can transfer cash into or out of bank deposits.) Such “money transfers” restore the equivalence of the demand for M0 with its supply, but they do not affect spending on goods or asset portfolios. Monetary dis-equilibrium in M0 is therefore irrelevant to the business cycle.

- and, when out of equilibrium, equilibrium is readily restored by money transfers which have no effect on demand or prices

The problems of M0 in the UK go further. Industrial economies are characterised by three stylised facts which are fundamental to understanding their cyclical instabilities.

These are

- that fluctuations in asset prices and investment are much greater than fluctuations in income and consumption,
- that (apart from housing) investment is undertaken predominantly by companies, not persons, and
- that financial assets are held to a considerable and sometimes preponderant extent by specialised financial institutions, not persons.

Narrow money is irrelevant - in a modern economy - to the large asset price swings which are so important to the business cycle

An implication of the first of these facts is that – to the extent that money matters to the cycle – it must be a definition of money that has some bearing on asset pricing and investment decisions. An implication of the second and third facts is that (if we put housing to one side, for the moment) the vital money balances must be those held by companies and financial institutions. Now here M0 faces an insuperable problem. Non-bank financial institutions hold virtually no M0 balances in the UK and have not done so for several decades. It is true that companies have some holdings of M0, but they are trivial. They are found in retail stores (for obvious reasons), and in those minor and relatively backward parts of the economy where wages are still paid in cash. In short, M0 is held almost entirely by persons, not companies and financial institutions, and so cannot be relevant to asset price movements in the economy or to the levels of corporate investment and stock-building. What about the one major element of investment that is the direct responsibility of the personal sector, namely investment in the housing stock? There may be some individuals (such as criminals and black-market operators with large note holdings) who balance their assets at the margin between M0 and housing equity, but it is surely preposterous to claim they have a key role in the UK housing market. (The story may be very different in, say, Russia or Bolivia, but we are not talking about Russia or Bolivia.)

My surprise when official policy favoured narrow money over broad in the 1980s

So an analysis of the relationship between money and the economy must be an analysis of the relationship between an all-inclusive money measure on the one hand, and the spending decisions and asset dispositions of the economy's main sectors on the other. I was amazed that in the early 1980s official policy de-emphasized broad money and paid an increasing amount of attention to M0. This shift of emphasis was partly due to some genuine, although much exaggerated difficulties in the relationship between broad money and expenditure in those years, but also important were criticisms of broad money made by some monetarist economists, notably Sir Alan Walters and Patrick Minford. I disagreed with Walters and Minford (as I still do), and made my disagreement known in various places. Despite the background, I persevered with my work on the UK's flow-of-funds data and sectoral monetary information, and began to notice certain regularities. By the mid-1980s the data series were typically over 20 years long and the number of

observations in the key relationships implied acceptable levels of statistical significance. I noticed, in particular, three regularities.

Three key regularities

- *Regularity I.* The personal sector's demand-for-money function was more stable than that of the other private sectors' demand-for-money function (i.e., the demand for money function of the corporate and financial sectors, either individually or combined).
- *Regularity II.* A key measure of the corporate sector's balance sheet strength was the ratio of companies' money balances to their bank borrowings (which I called "the corporate liquidity ratio"), and this liquidity ratio seemed to be relevant to their investment spending and to private domestic demand as a whole.
- *Regularity III.* A key measure of financial institutions' attitude towards their money holdings was the ratio of their monetary assets (or liquid/"short-term" assets) to their total assets, and that over long periods this ratio gravitated back to a value of about 4% for the most important UK institutions (i.e., the life offices and pension funds). (I called this ratio "the institutional liquidity ratio".)

Role of broad money in the fluctuations of the 1970s, with the three regularities very much at work

It needs to be emphasized that none of these regularities had been much disturbed by the turbulence and financial de-regulation of the early 1980s. An undoubted implication was that the rate of growth of the money supply (broadly-defined) was critical to the economy's behaviour. In both the Heath-Barber boom of the early 1970s and a milder cyclical episode in the late 1970s ("the Healey boom-let" of 1978 and 1979) I had seen a pattern in the growth rates of the different sectors' money balances. This was that an upturn in the growth rate of the money supply was accompanied by only a small change in the growth rate of the personal sector's money, because of Regularity I. The upturn in money growth was therefore associated with much more pronounced increases in the growth rate of corporate and financial sector money than in the growth rate of aggregate money. Regularity II implied that the consequent sharp rise in the corporate liquidity ratio would lead to more investment spending and buoyant domestic demand (as well as higher asset prices, insofar as companies tried to eliminate excess money by take-over activity and other asset purchases), while Regularity III implied unusually large asset price increases. In both the Heath-Barber boom and the Healey boom-let asset price strength became general (as companies and people – mostly rich people – bought and sold assets, to bring the valuations of the different assets into the right relationship with each other). The asset price strength infiltrated the markets for goods and services, and was followed by higher inflation at the retail level.

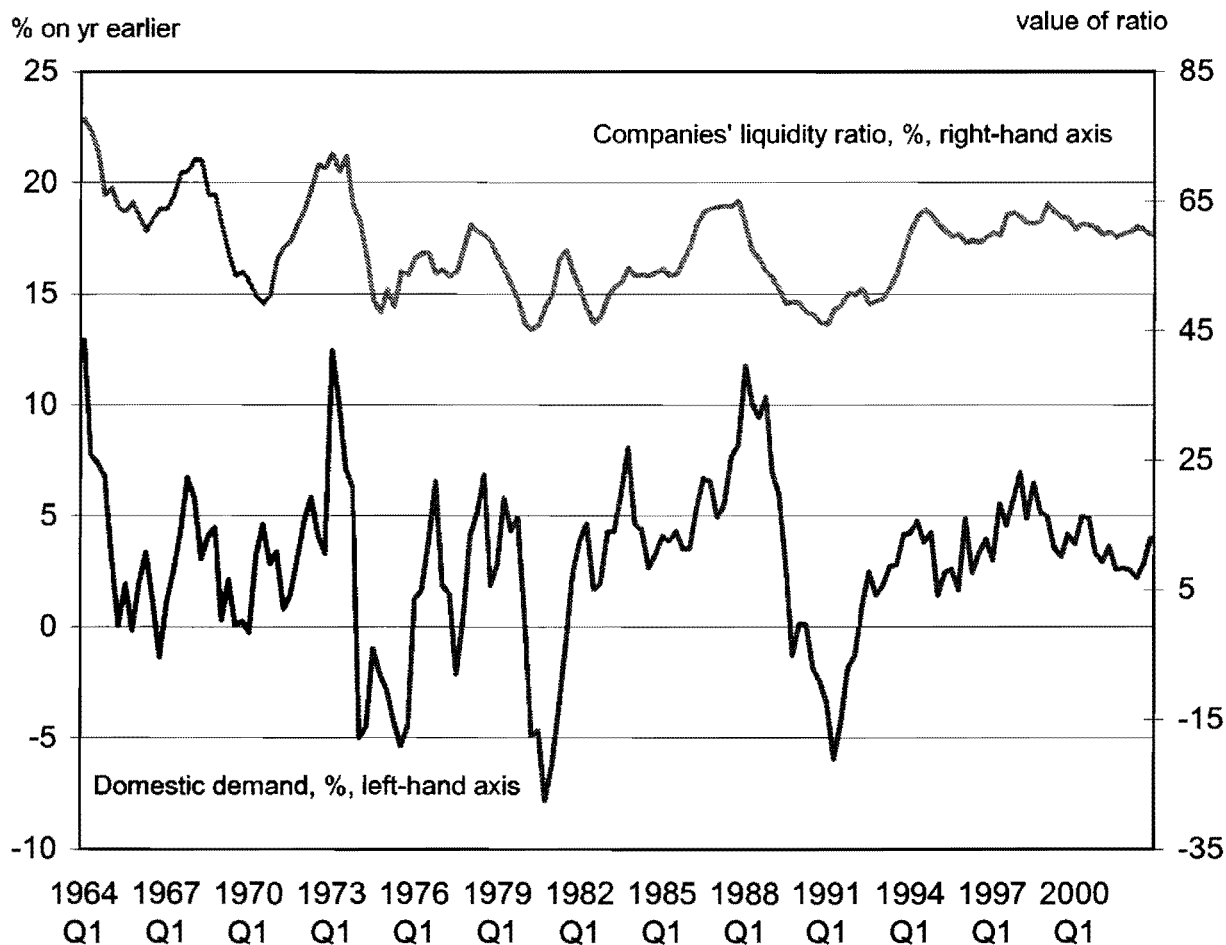
Ending of broad money targets in 1985...

I was therefore astonished when in October 1985 Mr. Nigel (now Lord) Lawson, the Chancellor of the Exchequer, suspended (as a prelude to scrapping) broad money targets. The true explanation for this decision was that Lawson had come to

Crucial to the cycle

Corporate liquidity and domestic demand, over 40 years

Chart compares the "corporate liquidity ratio" as measured by Lombard Street Research (i.e., M4 holdings divided by M4 borrowings) with annual % change in private sector domestic demand, quarterly data.



Source: National Statistics website

Money can be held by three types of UK non-bank resident, people, companies and financial institutions. Nowadays the major decisions on output and employment are taken inside companies. (Self-employment is about 12 ½% of the total and public sector employment almost a fifth.) Companies' liquidity ratio rises (falls) when their money holdings increase (decrease) relative to their bank borrowings. So the corporate liquidity ratio is closely correlated with aggregate M4 growth. It is therefore striking – and of first importance to the understanding of the transmission mechanism – that the liquidity ratio also correlates well with private sector domestic demand. As might be expected, company boards do worry about their bank balance. Although the stable decade since 1993 has not been a period of money supply targeting, it has seen steady money growth and a stable corporate liquidity ratio.

...followed by a sharp acceleration in M4 growth

regret his commitment to money supply target-ry at the very start of the Thatcher government and instead preferred to base monetary policy on the exchange rate, particularly the exchange rate between the pound and the deutschemark. The pretext for the October 1985 decision was concern about the effects of so-called “over-funding” on the money markets and the banking system, which seemed to require an end to the practice of selling government debt to non-banks in order to reduce broad money. This concern was magnified out of all proportion to the actual inconveniences caused by over-funding, but it gave long-term opponents of money targets – including many officials at the Bank of England, including the then Governor (Leigh-Pemberton) and Eddie George – the excuse they needed to revert to a more discretionary approach to monetary policy. In the year from October 1985 the annual growth rate of broad money accelerated sharply, by about 5% - 6% on the M3 money measure (which included bank deposits) and by about 2% - 3% on the M4 measure (which included building society deposits, as well as bank deposits). The acceleration continued into 1987, when the growth rate of M3 exceeded 20% for the first time since the early 1970s.

and a crazy boom-bust cycle,

Given the work that I had been doing over the previous 15 years, it was obvious to me that the money supply acceleration would lead to a boom and a significant increase in inflation. Moreover, I doubted that a later bust could be avoided if the UK were to restore an internationally respectable inflation rate. From early 1986 I warned about the risks in a sequence of articles in *The Times*. However, these articles were dismissed as low-grade, publicity-seeking journalism by key policy-makers in the Treasury and the Bank of England. I was well aware of their attitude towards my research. The refusal of key policy-makers to take the warnings seriously prompted me to ask Peter Warburton – whose econometric expertise had previously been deployed on the highly-regarded London Business School model – to join me at Messel/Shearson Lehman. The forecasts we prepared together between late 1986 and mid-1988 were detailed and rigorous, with forward projections of the money holdings of the personal, corporate and financial sectors, and related these agents’ asset and expenditure decisions to their money balances. As noted above, the forecasts were largely correct. The boom of 1987 and 1988 was followed by rising inflation and interest rates in 1989 and 1990, and by a bust between 1990 and 1992. (The economy recovered after the pound’s expulsion from the European exchange rate mechanism in September 1992, but the Conservative Party immediately lost 10% - 15% in the opinion polls. The Conservative Party – unlike the economy – has never recovered. Undoubtedly, many of the alienated voters were middle-class home-owners angry at the collapse in the value of their main asset.)

which was easy to forecast

However, in mid-1988 the outcome of the Lawson boom still lay in the future. After Messel had been bought by Shearson Lehman, my research department became

Lombard Street Research founded as a response to the disastrous conduct of monetary policy in the late 1980s

accountable to executives in New York with little interest in British public policy issues, except insofar as they affected “the bottom line”. My American employers gave me the opportunity to leave, which I was happy to take. In late 1988 I approached Brian (now Sir Brian) Williamson, then a director of Gerrard & National, to see whether his company would like to set up a joint venture with me. The joint venture would be a monetary research company, intended to produce forecasts of the British economy and sell them (plus other research), mostly – but not exclusively – to large financial institutions. Mr. Williamson persuaded the Gerrard & National board to go along with the proposal. With a capital of £100 and a loan facility of £50,000, Lombard Street Research began trading in July 1989. (In 1991 Mr. Brian Reading joined Lombard Street Research to set up the International Service. The International Service shares some of the UK Service’s analytical tools, but its work is far more eclectic than that of the UK Service. I have never sought to impose my views on the international team, believing that a diversity of opinions, and even occasional debates, are healthier in a research company than a monolithic orthodoxy.)

Lombard Street Research has continued the type of research I had previously carried out in the City

I have been fortunate over the last 15 years to enjoy the support and friendship of many excellent colleagues, who have worked with me on UK monetary research and macroeconomic forecasting. As a result, the analytical approach I started at Messel has been maintained. The first issue of Lombard Street Research’s *Quarterly UK Economic Forecast* appeared in December 1989, with the opening sentence, “Mr. Lawson has bungled the electoral business cycle.” Page nine contained an analysis of “the sectoral breakdown of monetary growth”, on much the same lines as the work done at Messel earlier. Later pages reviewed the money holdings and balance-sheet patterns of the personal, financial and corporate sectors, and related these to expenditure decisions. The format of the *Quarterly UK Economic Forecast* today is exactly as it was in 1989. Our monthly *Portfolio Strategy* publication also has pages on financial institutions’ and companies’ liquidity positions, with the purpose of making assessments of likely future movements in asset prices and demand.

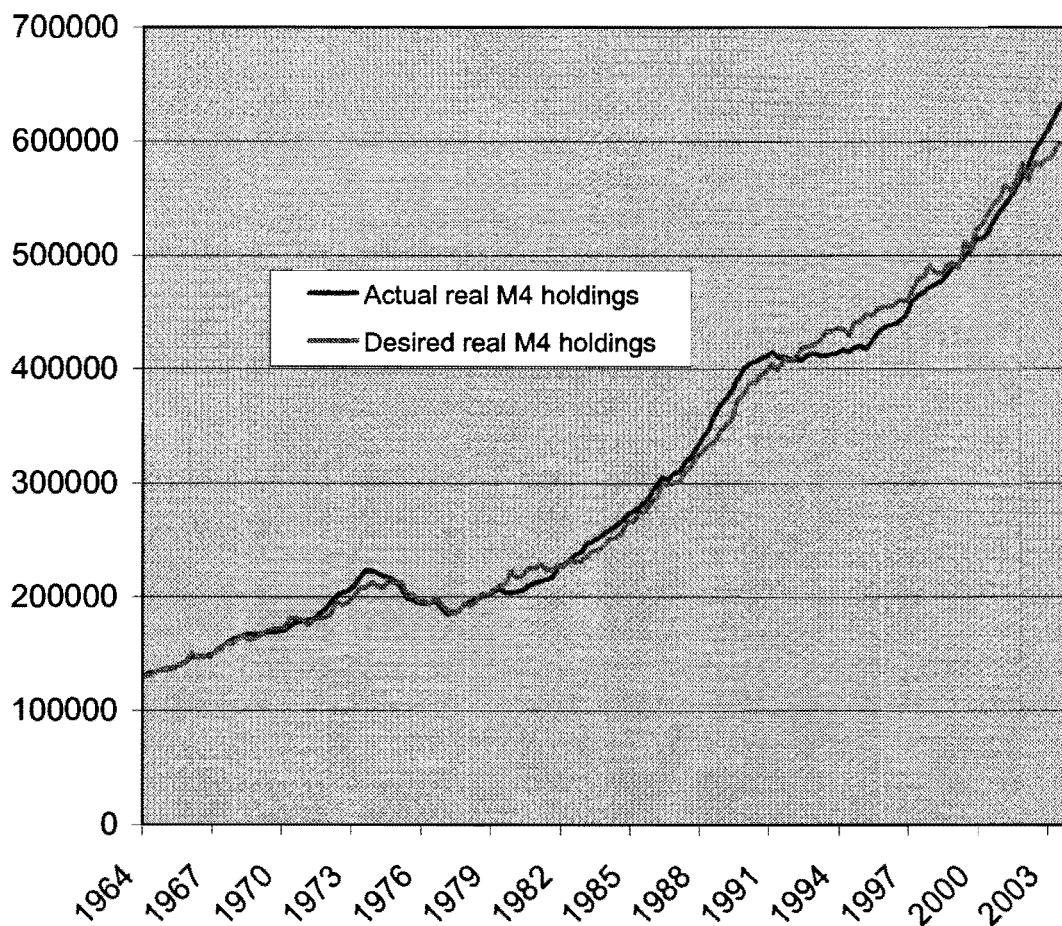
Have the three regularities survived?

Have the linkages between money and the economy in the roughly 25 years of data to 1989 survived into the 15 years to 2004? In particular, have the three regularities continued to apply? In 1991 Simon Ward and I wrote a short econometric research note on the personal sector’s demand for money. With a relatively simple specification in which income and the attractiveness of money relative to other assets were the key arguments, it was possible to show that the personal sector’s demand for money had been stable (according to the usual statistical significance tests) for almost 30 years from 1963. Since the personal sector’s money balances represented over half of all money, this was a very significant finding. The same

Stable household money

Economy's biggest money holder has good money demand equation

Chart compares actual household M4 balances with desired household M4 balances, as estimated by best-fitting equation. Details of equation can be obtained from Lombard Street Research Ltd.



Source: National Statistics website and Lombard Street Research

At the end of 2003 the M4 money measure amounted to £1,065.6b. This was split between households (£684.9b.), “non-financial corporations” or companies (£167.8b.) and “other (i.e., non-bank) financial institutions” £212.8b. So households accounted for almost two-thirds of M4. The finding of a stable household demand-for-money function over a 40-year period is important, since it calls for a re-appraisal of the numerous statements about the breakdown of money demand functions, instability of velocity and so on that have been made in the last 20 years. A salient feature of our equation is that the attractiveness of money relative to other assets has a major bearing on the desired ratio of money balances to income. The changing values of real interest rates and the proportion of interest-bearing to total money balances ought to have substantially increased the money/income ratio, as has in fact happened.

equation – with minor amendments – worked fine in the second half of the 1990s and is still used in our forecasting model at present. Other researchers have also carried out econometric testing on the personal sector's money demand and reached similar results. *Regularity I* seems to have become more widely recognised.

Regularity I - Household sector money demand has been stable, but recent behaviour surprising

Nevertheless, one feature of the current monetary situation is a little worrying for our analysis. The household sector's money balances are higher than forecast by the equation. There is nothing particularly surprising about that, as a small difference (or "residual") between the actual values of a variable and the value estimated by a best-fitting equation is always to be expected. The disappointment is that the residual at present is unusually large. As the chart on page 16 shows, the residual in fact takes virtually the highest value in the 41-year period for which it has been estimated. This situation is open to at least two interpretations. One is that the relationship is breaking down, which would be surprising given its durability over such a long period. The other is that households' money balances are well above the desired level, and that they will try to disembarass themselves of the excess money by spending above income and/or purchasing non-money assets. The two main non-money assets are financial assets (unit trusts, pension funds, life insurance policies) and housing equity. The buoyancy of personal sector money may be part of the reason for the rapid house price inflation of the last five years. (Note that – when one person pays for a house with his or her money balance – that does not eliminate the excess money. The money of course turns up in the vendor's bank balance. If the vendor then also has excess money, he or she will try to eliminate it, perhaps by buying a different sort of house. At the aggregate level the excess money is removed not by the disappearance of money balances from the economy, but by an increase in prices. In this story the excess money works on house prices.)

Regularity II - The corporate liquidity ratio continues to have a stable long-run average value

What about *Regularity II*? I had noticed in the late 1970s and 1980s that fluctuations in the corporate liquidity ratio were loosely correlated with fluctuations in gross domestic product, while the ratio itself seemed to average a value slightly above a half. Admittedly, the ratio had been much higher than a half in the early 1960s. But, as the banking system was liberalised and became more competitive in the late 1960s and 1970s, companies seem to have decided that they could manage with lower liquidity. An important watershed was the Competition and Credit Control reforms of September 1971, which were intended to mark the end of quantitative controls on bank lending. In the 25 years from the start of data to the fourth quarter (Q4) of 1988 – that is, in the 25 years before the founding of Lombard Street Research – the average value of the corporate liquidity ratio was 59.4%; between Q3 1971 and Q4 1988 the average value of the ratio was a shade lower, at 56.6%. The stability of the average value over such long periods led me to

expect that the ratio would take much the same value in future. So what did happen in the 15 years to the end of 2003? The answer is that in this period the average value of the liquidity ratio was 57.4%! (See the chart on p. 13.) In other words, UK companies have been operating with much the same notion of a sensible long-run average (or “equilibrium”) ratio of bank deposits to bank borrowings for over 30 years. The tendency of the ratio to revert to the same average value is all the more remarkable, given that in the 32 ¼ years from Q3 1971 to Q4 2003 their M4 holdings climbed from £4.0b. to £170.7b. (or by 42.2 times) and their M4 borrowings increased from £6.9b. to £270.0b. (or by 39.3 times).

**and a clear
relationship with
economic activity**

To say that the ratio has had a tendency to revert to the same equilibrium value does not mean that it has stayed close to the equilibrium value all the time. As the chart shows, there were large deviations from the average on the upside in 1972 and in the late 1980s, and on the downside in 1974, 1980 and 1990 – 91. The two upside deviations were periods of boom, whereas the three downside deviations saw pronounced demand weakness. The rationale for the relationship is simple. When companies have strong liquidity they are inclined to spend more on capital equipment, recruitment and stockbuilding, but when liquidity is under pressure they cut back. In our *Portfolio Strategy* publication we present the liquidity ratio next to a GDP series, with the aim of warning clients when major changes in company balance sheets are likely to affect economic activity. However, I have recently carried out some primitive econometric tests of the relationship between the liquidity ratio and GDP, and the results were not good. So as an alternative hypothesis I regressed private sector domestic demand on the corporate liquidity ratio. (The government sector should be excluded because its behaviour is not affected by its money balances; external demand should be ignored, because it largely reflects monetary policy in other countries.) It turned out that the change in private sector domestic demand had a pleasingly high correlation with the corporate liquidity ratio.

**Regularity III -
Institutional
liquidity ratio
fluctuates sharply
from year to year**

And what about *Regularity III*? In preparing this paper I checked the values of the institutional liquidity ratio over the 31 years to the end of 2003, i.e., roughly speaking, the period in which expectations of never-ending inflation had become established and made equities the core asset for most UK savings institutions. In the sixteen years to end-1988 the institutional liquidity ratio averaged 4.33%. The ratio saw sharp swings, from a value of over 9% at the end of 1974 to under 3% in early 1987. It is interesting that high values generally coincided with stock market weakness and low values with stock market strength. (The explanation for this pattern is that the liquidity ratio is a measure of investors’ confidence. They are heavily invested, with low ratios of cash to assets, when they are bullish; they stay on the sidelines, with high ratios of cash to assets, when they are bearish.) At any rate, over the 16 years life offices’ and pension funds’ short-term assets (mostly

bank deposits) rose by a multiple of 13.5 times, from £756m. to £20,978m., while their total assets rose by a multiple of 14.5 times, from £30,224m. to £465,820m. By contrast, the institutional liquidity ratio changed only slightly, falling by 7%.

But long-run average value of institutional liquidity ratio virtually identical in 15 years of Lombard Street Research to previous 16 years!

When I founded Lombard Street Research I expected that the ratio would vary significantly from year to year (as it had done in the past), but that its long-run average value would be much the same as it had been between 1972 and 1988. By checking the figures I was able to test this hypothesis. It turned out that the ratio in the 15 years to end-2003 averaged 4.35%, astonishingly close to the average of 4.33% in the 16 years to 1988! Of course, this result is a fluke. It must be a fluke both because the ratio is volatile from year to year, and because the portfolio preferences of life offices and pension funds are different within the LAPF total. Nevertheless, the similarity of the institutional liquidity ratio in the 1972–88 and 1989–2003 periods is striking, and implies that over a 30-year period senior executives in the UK's long-term savings institutions had a fairly stable notion of the appropriate ratio of monetary (or "short-term") assets to their total assets. (In the 31 years to the end of 2003 the LAPFs' short-term assets rose by 83.6 times and their total assets by 54.8 times, while the liquidity ratio changed by 52%.)

The conclusion has to be that the three regularities I noticed from the monetary data in the 25 years to 1988 have survived in the 15 years to 2003. (Indeed, they show every sign of life in 2004 as well.) These regularities relate to the monetary behaviour of the entire UK non-bank private sector. My view on these issues remains the same as when I founded Lombard Street Research. I continue to believe that,

- 1. *monetary trends are fundamental to the cyclical changes in asset prices and investment expenditure observed in the UK economy (and other economies), and these changes are in turn critical to fluctuations in aggregate demand, employment and inflation, and*
- 2. *when the phrase "monetary trends" is used in this context it has to mean trends in an all-inclusive measure of money ("broad money").*

Of course, it is not certain that the regularities discussed in the paper will persist for the next 15 or 30 years. A modern economy is subject to constant institutional change, so that the relative significance of money-holding entities (and even the meaning of the phrases "the corporate sector" and "life offices and pension funds") may be quite different in 2019 or 2034 from what it is today. Nevertheless, a sensible central view is that over the long run the annual growth rates of the money supply and nominal national income will be within spitting distance of each other (they may differ by 1% or 2%, but not by much more than that) and that the

**Data justify
Lombard Street
Research's work**

demand-for-money functions of key economic agents will show enough stability to justify the sort of work in which Lombard Street Research has specialised.

Notes

(1) L. Messel & Co. - where I had been a partner since 1980 - was sold to Shearson American Express, as it then was, in 1984 ahead of the Big Bang reforms in 1986. I stayed at Shearson until the summer of 1988. Lombard Street Research is a business, but one of my main objectives in creating the company was to have a stable base for a specialist research product. I did not want my research to be subject to the vagaries of office politics, which was (and remains) a common pattern in the investment banks.

(2) When I say "the Lombard Street Research approach" I mean the approach adopted in analysing and forecasting the UK economy. Lombard Street Research's International Service goes its own way.

(3) For those unfamiliar with the IS-LM model, one has to imagine two loci in a plane with national income and the level of interest rates as the co-ordinates. Only at their point of intersection are both national income and interest rates in equilibrium. One locus plots those values of national income and interest rates at which the demand for money is equal to the money supply ("the LM curve"); the second locus plots those values of national income and interest rates at which savings equals investment ("the IS curve").

(4) The exception - the famous exception - is "the liquidity trap".

(5) I have also noticed a recurrent difficulty. This is the widespread misunderstanding that the phrase "the demand for money" means "the demand for new bank credit". Of course, a phrase can mean whatever people want it to mean, but the prevalent usage in macroeconomics is the "the demand for money" means "the demand to hold money balances". This goes back, particularly via Keynes (who wrote at length on the motives for holding money in *The General Theory*), to the pioneer of demand and supply analysis, Alfred Marshall. *To repeat, "the demand for money" does not mean "the demand for new bank credit"*. It has become clear to me over the years that many prominent economists are in a tangle about this matter and, despite their volubility in policy debates, have never understood the basics of their subject.

(6) The word "corporatist" was used to describe peak-organization pay bargaining by, for example, Sir Samuel Brittan in some of his writings on unemployment in 1985. See p. 225 of *Capitalism with a Human Face* (Edward Elgar: Aldershot, UK, and Brookfield, USA, 1995).

(7) Mr. Gordon Brown's "sustainable investment rule" - that, even if the golden rule on current spending is being met, capital spending must be constrained so that net debt does not exceed 40% of GDP - is about as anti-Keynesian as any fiscal policy principle could be.

(8) To repeat, "the demand for money" is "the demand to hold money balances". I am very unsympathetic to the recent fashion in monetary economics for "channels" of monetary policy transmission. It seems to me that attempts to fit money - including a banking system and a central bank - into a general equilibrium framework are much better economics than the proliferation of channels, as these channels have no clear relation to each other and their relative significance is often left open-ended. In fact, the tendency to proliferate channels in discussions of the monetary transmission mechanism severs these discussions from the established apparatus of macroeconomic theory.