Setting monetary objectives

This paper by J S Fforde, an adviser to the Governor, was presented at a conference on monetary targeting organised by the Federal Reserve Bank of New York in May 1982. (1) *In it Mr Fforde reviews the political economy and history of monetary targeting in the United Kingdom since the early 1970s.*

Temporal references have not been altered so that, for example, 'last year' refers to 1981.

Our monetary objectives were reset early last month, when the Chancellor of the Exchequer presented his annual Budget to the House of Commons and reformulated the medium-term financial strategy of Her Majesty's Government. The stated monetary objectives comprised a single target range for 1982/83 encompassing three different monetary aggregates, one narrow and two broad. The range was appreciably higher than the one set a year ago for M_3, as the target for 1981/82. This was accompanied by an important qualifying text. It explained how the development of these aggregates, whether individually inside or outside the target range, needed to be interpreted when forming judgements about the monetary situation that relate to policy decisions about short-term interest rates.

In addition to a variety of qualifying factors pertaining to the behaviour of the monetary aggregates themselves, the text mentioned above referred to such other matters as the course of the exchange rate, the apparent real interest rate, the state of certain asset markets, and the concurrent course of nominal GDP. In brief, the UK monetary authorities again confirmed that while the counter-inflationary strategy remained unaltered in substance, their presentation of the money supply as an intermediate target in pursuit of that strategy had been modified in the light of experience since 1979. It remains to be seen how this relatively pragmatic approach will evolve, both in its practical application and in its intellectual and political presentation. But it clearly represents a rather greater emphasis on empiricism in the monetary policy field; though an empiricism purged, it is intended, of earlier permissiveness which was its downfall.

The occasion of this return most conveniently sets the framework of this paper. It does so because it permits an examination of the evolution of strict monetary targeting in the United Kingdom, a demonstration of why we chose to concentrate on broad rather than narrow aggregates, an analysis of the difficulties which we have found to be present in the use of monetary intermediate targets, and an assessment of what of value remains of the experiment that has been conducted.

The political economy of M_3

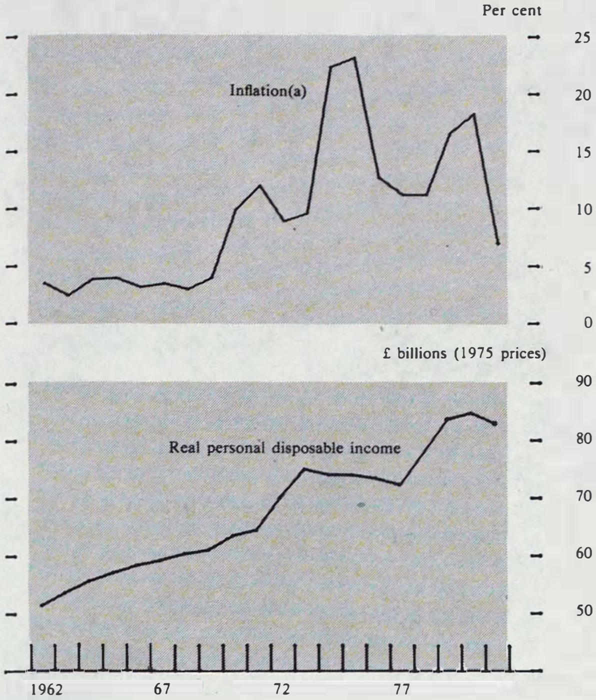
When discussing our monetary problems among ourselves, we have come to distinguish rather sharply between the 'political economy' of a money supply *strategy* and the 'practical macroeconomics' of a money supply *policy*. The former expression has to do with political presentation to the wide variety of audiences that constitute the public, and whose perception of the strategy presented is very diverse. Our own political economy is also much affected by the constitutional and governmental structure of the United Kingdom which, though by no means unique, differs considerably from that in, for example, the United States and West Germany. The latter expression, 'practical macroeconomics', is concerned with macroeconomic relationships and their stability or instability. It is concerned, for instance, with relationships between the money supply as an intermediate target and the ultimate objectives of policy regarding prices, output and employment. These distinctions seem both simple and useful, and will continue to be made in what follows.

The United Kingdom is a unitary state and a parliamentary democracy. Subject to parliamentary and ultimately electoral approval, macroeconomic policy is decided and carried out by a unified executive branch. This includes, for purposes of this paper, both the Treasury and the Bank of England. The latter is institutionally and operationally separate from the Treasury but is best regarded as the central banking arm of a centralised macroeconomic executive. For the past decade or more, this structure has worked in an economic environment characterised by sluggish or zero growth, a very large public sector, persistent and volatile inflation, pronounced external constraints, and often frustrated expectations of real-income growth.

Such conditions, which have on two occasions compelled us to borrow from the IMF, are clearly those in which there is a relentless need to restrain the size of fiscal deficits, to minimise the monetary financing of such deficits, to avoid conditions of financial laxity in the private sector of the economy, and more often than not to pay particular and close regard to the external repercussions of all aspects of domestic policy. The macroeconomic executive can only ignore those restraints at the risk of losing all control of financial stability and of the economic situation generally. This being so, it follows that there will be found great advantage in a method of formulating and presenting

(1) Copies of the conference proceedings, *Central Bank Views on Monetary Targeting* are available from the Public Information Department, Federal Reserve Bank of New York, New York 10045, USA.

Chart 1
Economic growth and inflation



(a) Change in index of total home costs, Q4 on Q4.

policy that can bring together in one single analytic and statistical framework the interrelated complex of well-known fiscal and monetary magnitudes.

The use of such a framework helps to achieve a proper consistency and coherence of fiscal and monetary decision-making within the wider governmental apparatus, and to provide a convincing and persuasive public presentation of such decisions, at least to Parliament, to the 'informed' media and to financial markets. Indeed the practice of intermediate targetry in the United Kingdom is due only in part to its associated and often 'monetarist' economics. It is as much due to the evolving political and administrative needs of a macroeconomic executive that has to maintain control in the environment mentioned above, and to do so in a democratic society with a relatively free and open economy.

Specific intermediate targetry was, however, first introduced in the United Kingdom by the IMF when standby facilities were negotiated with the Fund following the devaluation of sterling in 1967. The IMF had presumably become accustomed to lending money to countries beset with problems similar to those experienced in the United Kingdom, and to imposing conditions that would so far as possible ensure that the loan was repaid on time. The conditions obliged the borrowing country to carry out an internally consistent macroeconomic policy along the lines mentioned above, so as to restrict the fiscal deficit, restrain the provision of finance to the private sector and by these and a variety of other means(1) bring about control of a specially devised broad credit aggregate (DCE). The containment of this aggregate within an agreed numerical limit was intended to ensure that the medium-term external loan from the IMF would be repaid on time. But although DCE is a credit aggregate, the strength of this assurance did in practice depend upon some workable degree of stability in the relationship between money and income rather than 'credit' and income.

The requirements of the IMF fitted readily into the established flow-of-funds accounting matrix and could thereby be made analytically consistent and visibly interrelated. It did not matter too much, for the purposes of political economy, that a set of accounting identities yielded of themselves relatively little information about causality; or that financial forecasts of the way such identities would turn out *ex post* were extremely imperfect. It sufficed that the various 'intermediate' fiscal and monetary magnitudes could be presented in directly interrelated form, through the financial accounts, and directly related to externally imposed conditions (DCE) which had perforce to be met.

These combinations of external compulsion, governmental structure, financial accounting and the persistence through time of the range of economic problems mentioned earlier, together propelled us towards the use of intermediate targets. But they also predisposed us to a concern with broad rather than narrow money. Narrow money relates to short-term interest rates and to income—in the economic sense of 'relates'. So, at least in principle, does broad money. But, unlike the latter, the former cannot be closely related in the accounting sense of the word to such other important magnitudes as, for instance, the fiscal deficit, non-bank absorption of government debt, or external monetary flows. This is not to suggest that narrow money, as an intermediate target, had no attractions. But for us these would have had to rely on a rather straightforward version of the quantity theory and on behavioural characteristics that were in practice very useful, reliable, superior to those of broad money, and known by markets to be so, rather than on demonstrative interrelationship with other monetary magnitudes.

If the targeting of narrow money seemed to rely rather exclusively on the quantity theory, the use of a broad money target could be justified by reference to rather different theories, about the importance of 'liquidity' and 'credit', as well as by regard for the quantity theory itself. Since the climate of thinking on these matters in the United Kingdom in the early 1970s was more eclectic than monetarist, this property of broad money was an additional reason for its adoption as an intermediate target.

The practical macroeconomics of M_3 in the early 1970s

At the outset, some twelve years ago, the behavioural characteristics of broad money seemed quite promising and in some respects superior to those of narrow money both in terms of controllability and in terms of reliable and useful relationships with ultimate goals. Experience of the 1960s suggested an adequately reliable demand-for-money

(1) Such as setting an appropriate rate of exchange, conducting enforceable incomes policies, or strict use of exchange controls.

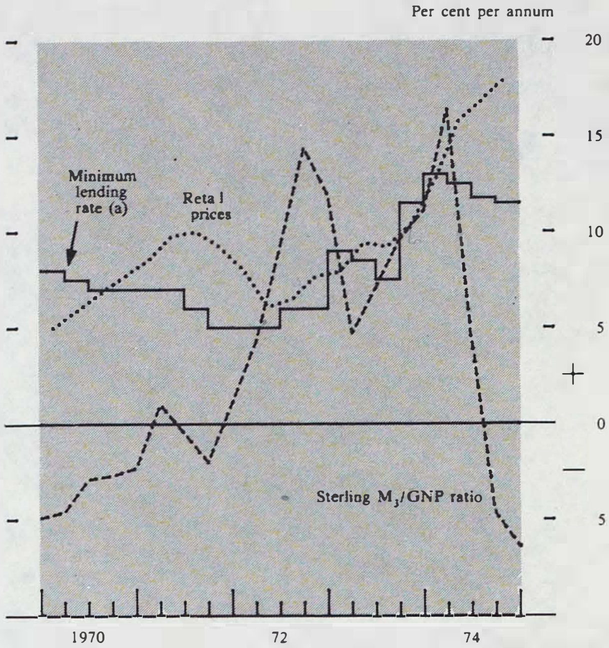
function, or reliable relationship between M_3 and nominal incomes. Experience also suggested an adequately reliable relationship between M_3 and nominal interest rates of a form implying that sufficient control of the former could be obtained without movements in interest rates so large as to set up intolerable economic side effects. These inferences could be made because by the end of the 1960s econometric analysis could, for the first time, fully use the comprehensive monetary statistics that had only become available in the United Kingdom earlier in that decade, following the Radcliffe Report.(1) The initial results being promising, they served to reinforce a natural enthusiasm. For it now looked as if the combination of econometric method and adequate statistics would enable monetary policy to acquire a positivist or 'scientific' flavour in place of the qualitative and 'artistic' nature with which it was thought to have been tainted.

This econometric research into the properties of M_3 strongly encouraged the monetary authorities to attach greater importance than hitherto to the money supply itself, for two separate reasons. First, because it could be cogently argued that nominal interest rates, in conditions of persistent and volatile inflationary expectations, were a poor guide to real interest rates and hence to the 'thrust' of monetary policy. Money supply growth, relative to GDP, was a better guide; so 'money mattered' after all. Second, because the supposed responsiveness of this better guide to acceptable movements in nominal interest rates suggested that the needs of monetary policy could be met without persistent recourse to direct controls over bank lending to the private sector. This was a very attractive suggestion. By 1970, because of their diminishing effectiveness, and in the interests of competitive efficiency in banking, there was a lively disposition to move sharply away from the direct controls which had become a feature of monetary policy.

Neither of the two reasons just mentioned had much to do with 'monetarist' economics. In the early 1970s UK monetary policy, though more interested in the money supply and in the analytical and accounting framework described earlier, remained along with fiscal policy essentially 'Keynesian' in outlook, the more so after the IMF had been repaid and the associated DCE constraint had lapsed. Nevertheless the behaviour of the UK money supply, both broad and narrow, attracted increasing attention from monetarist writers both in the academic world and in the financial community.

An expansionist fiscal policy was adopted early in 1972, followed within months by abandonment of the fixed parity of exchange. Severe inflationary stresses ensued, notwithstanding the reintroduction late in 1972 of formal controls over prices and wages. In addition to familiar symptoms of a high pressure of demand on real resources, the signs of stress included booming markets in commercial and residential property, fuelled by a ready supply of

Chart 2
Monetary conditions 1970–74



(a) Movements are recorded at the end of the quarter in which they occur.

finance from banks and savings institutions. Responding to domestic and external pressures, interest rates were raised sharply in June 1972 and again in the summer of 1973. Despite this, there persisted an extremely rapid growth in M_3 relative to nominal incomes, although by 1973 the growth of M_1 gave much less cause for monetarist alarm. Towards the end of 1973 'overheating' became acute and inflationary pressures were intensified by the rise in energy prices. Corrective action had to be taken. Fiscal policy was tightened, short-term interest rates were raised to levels not hitherto experienced, and a form of direct control was reimposed on the banking system. But at the same time, the statutory incomes policy became subject to severe strain which culminated in industrial action in the coalmining industry. A general election was held in March 1974 and the Conservative Government lost office. The incoming Labour Government abandoned its predecessor's incomes policy; though one feature of that policy, a form of partial wage-indexation, continued to affect wage levels for some time thereafter.

The intensity of the inflationary pressures that developed in 1973 was evident enough from a very wide range of economic and financial information. But it was not clear whether the rapid growth of M_3 was either accurately corroborating all the other available evidence or reliably predicting the level of inflation which would ensue in 1974–75.(2) The problem with M_3 was one that has since become familiar to executants of monetary targetry in many countries. It had undergone structural change following the simultaneous abandonment late in 1971 of the direct credit controls and the collective agreements between principal banks regarding the setting of deposit

(1) *Committee on the Working of the Monetary System — Report*, HM Stationery Office, Cmnd 827, 1959.

(2) A much higher level did in fact ensue. But the massive r se in energy pr ces, whose effect was aggravated by the partial indexation of wages, was a very important contributory factor that had nothing to do with the British money supply in the preceding period.

and lending rates. Monetary econometrics that relied upon the statistics of the 1960s proved useless once the banking reforms of 1971 had taken effect. But precisely because this could so readily be attributed to structural change, and because that change itself so obscured underlying monetary trends, there remained some justifiable optimism among monetary economists that normality would soon return and the econometric reliability of M_3 be restored. Regrettably, this optimism was to prove unfounded. But for the time being it underpinned professional economic support for the political economy of 'monetarism' which became increasingly influential in the United Kingdom during the later 1970s.

Furthermore, the breakdown of the previously established relationships between M_3 on the one hand and interest rates and nominal income on the other did not of itself mean that the usefulness of M_3 to the macroeconomic executive had been fatally undermined. For one thing, political and market opinion subsequent to 1973 remained very sensitive to the development of the money supply. This accordingly influenced the exchange rate as well as the state of domestic financial markets. For another, it now seemed that the growth of M_3 within reasonable limits could be directly influenced, occasionally to a high degree, by a combination of direct controls (now more acceptable again) and an active policy of debt management. So although there was at first no formal or published money supply target, the course of M_3 was a fairly strong policy constraint after 1973, and one that could be brought to bear on decisions about the level of government borrowing, about the pattern of its financing, and about short-term interest rates.

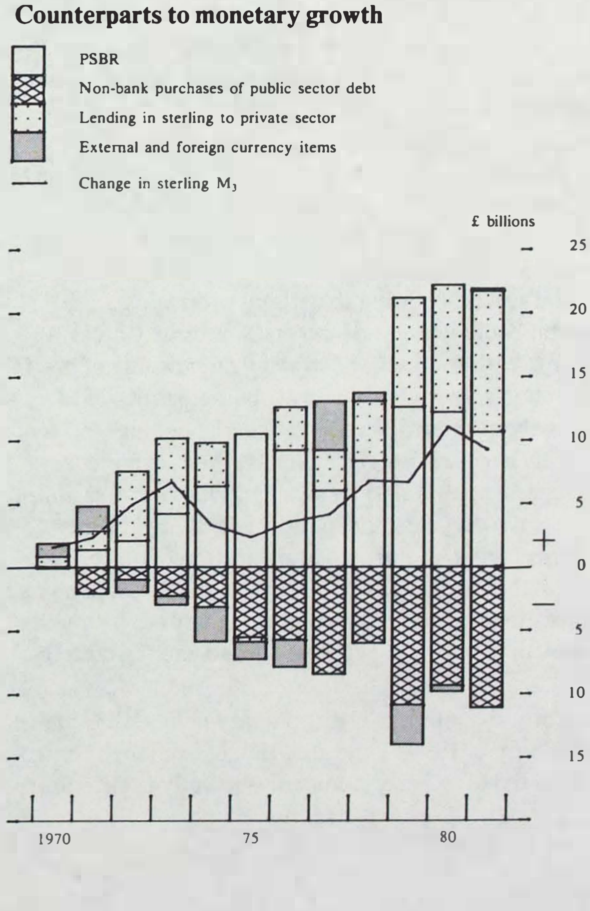
M_3 as an overriding constraint: 1976–79

From an unpublished M_3 objective as a moderate constraint on other aspects of macroeconomic policy, it was but a short step to a published M_3 target as an overriding constraint upon policies which might otherwise fail to stop inflation reaccelerating to 20 per cent per annum and more. This was the speed that had been reached by the middle of 1975, just before the reimposition of direct control (this time non-statutory) over wages and salaries. The short step to published annual targets for M_3 was taken in the autumn of 1976 when it became clear that financial confidence was unlikely to be obtained without it. For at that time the UK authorities had become caught in a spiral of declining confidence. Concern about official intentions regarding the rate of exchange heightened a persisting concern about the level of government borrowing and the stance of fiscal policy. Concern about the effects of these matters upon the viability of incomes policy then further increased concern about prospective inflation. All these things made the required policy of debt management more difficult to carry through. This in turn caused difficulty with M_3. In the end, a published M_3 target was announced and short-term interest rates were raised to 15 per cent, even higher than the level reached at the end of 1973. Recourse was again then made to borrowing from the IMF, with its accompaniment of a tightened fiscal policy and agreed limits on DCE.

The use of a published M_3 target as an 'overriding constraint' upon other aspects of policy, which then continued to be conducted broadly along Keynesian lines, lasted until the change of government in May 1979. It was notably reinforced in the autumn of 1977. During the spring and summer of that year, following restoration of external confidence during the winter of 1976–77, there was strong upward pressure upon the exchange rate. After a time, this caused concern for the external competitiveness of British industry. Attempts were therefore made to contain the appreciation by heavy intervention in the exchange market and by a progressive reduction in short-term interest rates.

These measures, though technically effective, were carried to the point where they were clearly undermining restraint on the domestic money supply. In short, they collided with the overriding monetary constraint; and they were abandoned. That constraint was further reinforced in the early summer of 1978 when the fiscal policy of the government again failed to command adequate market confidence for the containment of M_3 to be secured without additional measures. So fiscal policy had to be corrected and in addition a degree of direct credit control was once again reimposed. But despite these reinforcements of a published monetary constraint, the containment of inflation still depended importantly upon persistence with the direct, though largely voluntary, restraint on prices and incomes. This latter became relatively ineffective during the winter of 1978–79. It had no place in the electoral programme of the Conservative opposition which won the general election of May 1979 and embarked upon a radical change in

Chart 3
Counterparts to monetary growth



macroeconomic strategy. Colloquially, monetarily constrained 'Keynesianism' was replaced by 'monetarism'.

The medium-term financial strategy and the problems of M_3: 1979–82

The incoming Government retained the use of M_3[1] as the single target aggregate. It was recognised that experience hitherto in achieving fairly close control of this aggregate was not entirely reassuring. But it was felt that the answer to this might lie in changing the methods of control rather than the target aggregate itself. Retention of M_3 may also have been encouraged by further econometric research which made allowance for the troubles that followed the reforms of 1971. This was thought to support a view that success in controlling M_3 within a narrow and restricted range over the *medium* term would reliably be followed by a predictable success in steadily reducing inflation. But retention of M_3 was also due to those same advantages of targeting a broad money aggregate in the United Kingdom that had first appeared ten years earlier: namely, the direct accounting linkage with the level of government borrowing and financing, with the level of bank lending to the private sector, and with external monetary flows. In this context it will be recalled that the 'monetarist' counter-inflationary strategy of the present Government has always included great emphasis on the need to control and reduce the public sector borrowing requirement so as to obtain a fiscal/monetary mix more favourable to enterprise in the private sector.

The change of strategy altered and intensified the 'political economy' of M_3. In place of the overriding constraint against run-away inflation there now emerged a published programme for reducing the growth of the money supply over a period of years and, it was stated, bringing about thereby a steady reduction of inflation down to a minimal pace. In pursuit of this programme, considerable importance was attached to the favourable effect that official monetary declarations and performance could have upon expectations about prices and employment, and therefore on behaviour with respect to wages and salaries. Success, first in keeping M_3 within the published target range, and second in doing so without producing unacceptably damaging side-effects, was clearly most important. Yet the change of strategy did nothing of itself to alter the shorter-term behavioural characteristics of M_3. Opinions about these differed but experience since 1974 was not entirely encouraging. For whatever that experience might suggest about relationships applying over a *medium* term measured in years, the 'political economy' of the strategy seemed to require a demonstration of quite close control, and an absence of intolerable side-effects, in a *short* term measured in months. Herein turned out to lie much of our problem with single-aggregate broad-money targetry.

The structural context of UK monetary policy was changed in the autumn of 1979 by the abolition of exchange control. This rendered direct credit controls virtually useless. For the first time in their history, and on this occasion they had been in force since May 1978, such controls could now be avoided wholesale by offshore disintermediation. Moreover, avoidance through domestic disintermediation was already growing and confidence in the ability of direct controls to deliver a worthwhile amount of additional monetary restraint, as opposed to 'cosmetic' manipulation of the target aggregate, was declining. Accordingly, direct controls were abolished in the summer of 1980. The growth of M_3 was markedly inflated for some months afterwards by reintermediation. This episode came at a time when the money supply policy was encountering other and more fundamental difficulties and therefore cast important additional doubt on the credibility of our single-aggregate targetry.

Without direct controls, there remained short-term interest rate policy and debt management. But pursuit of the former was unlikely, on the available evidence, to begin to have a worthwhile effect on M_3 until a time lag of at least six months had elapsed. The effect, when it came, was seen to be through a fall in demand for bank loans; though it was unclear whether this itself would be a consequence of the income effects of interest-rate changes, or whether it would be a precursor of those income effects. Indeed, discovery of reliable relationships between the demand for bank loans to the private sector and a whole variety of other variables, including short-term interest rates, had proved very elusive. Yet in the absence of effective direct constraint on their supply, and given a banking system fully adapted to 'liability management', it was the *demand* for bank loans that had to be influenced in the cause of M_3 control. So with these uncertainties and time lags surrounding the course of bank lending, monetary control in the shorter term came to depend critically upon debt management; and despite the progressive introduction of a variety of technical improvements, there were rather close limits to what could be achieved by this means. For one thing, the short-run predictability of the government's own borrowing needs was at that time very poor.

These problems of short-run control, though serious, need not of themselves have led to a de-emphasis of M_3 as the single target aggregate. For, provided the existing techniques had been able over a rather longer period, say between six months and a year, to contain the money supply within the kind of target range required, but without the emergence of severe conflict with ultimate objectives of policy, all might have been well. But this latter condition proved not to apply. The apparent relationship between M_3 and nominal incomes, in the shorter term, began to display alarming properties. Pressing policy to the point where the monetary target might have been achieved would seemingly have risked unacceptably severe and immediate consequences for the real economy, consequences that were unintended and strategically damaging. In short, progress with the *ultimate* objectives of policy had, by the summer of 1980, to be taken into account as well as progress with the

(1) Or sterling M_3 as it had become since the removal of a foreign currency element from the definition in 1977.

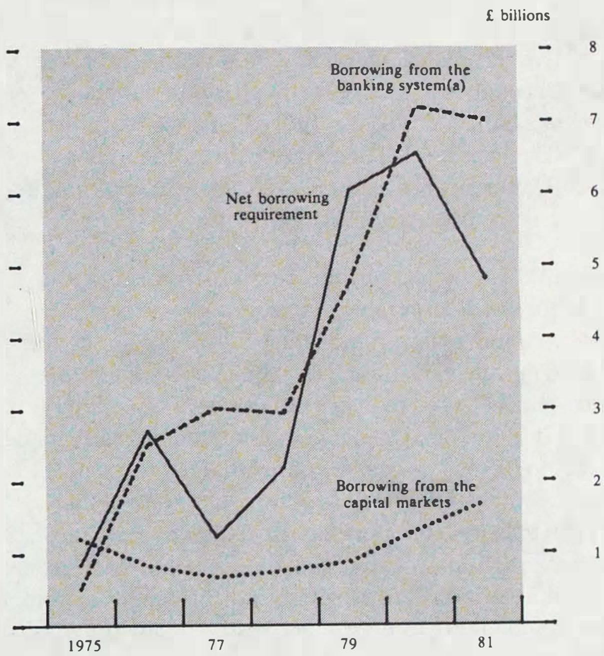
intermediate targets. At the time this seemed to call into question the political economy that had been expressed in the government's medium-term financial strategy, which had only been fully presented to the public, in quite strict numerical terms, as recently as March of that year. But as time went by it came to be realised that the strategy was more likely to be judged by its actual effect on the economy, and on the actual behaviour and expectations of the principal agents in it, than by the puzzling short-run behaviour of a particular monetary aggregate.

What was actually happening? Beginning in the second quarter of 1980 the British economy moved steeply into a recession marked in particular by a cutback in inventories. Industrial production fell fast, profits (already low) were sharply reduced, unemployment rose very rapidly, and in the autumn there began a marked slowing down in the growth of prices and wages which had at first failed to respond to the change of strategy. Short-term interest rates at first remained at the 17 per cent to which they had been raised in the previous November in response to excess growth of M_3 and, most importantly, the rate of exchange rapidly appreciated after external competitiveness had already been reduced by the relative growth in unit labour costs in the United Kingdom over the preceding two years. Yet the course of M_3 relative to its target did not properly justify a cut in interest rates. Rather did it at times suggest a further rise. It was affected upwards by a rise in the fiscal deficit, associated with the recession, and by a continuing high corporate demand for bank loans despite the run-down of stocks. At the same time, the personal saving ratio rose to a very high level; and this increased saving flow helped finance the corporate and public sector deficits through the intermediation of the banks.

Throughout the summer and autumn of 1980 M_3 continued to grow outside the top of its target range. But short-term interest rates were reduced to 16 per cent in July 1980, to 14 per cent in November, and to 12 per cent in March 1981. On each occasion it had to be judged that the performance of M_3 required interpretation in the light of other indicators, including the exchange rate, and that the thrust of policy was in practice as restrictive as had been intended. In particular it seemed that the increase in personal savings, and their flow to the business sector through the banks, had inflated M_3 without adverse implications for the future. This factor may have diminished in force during at least part of 1981. But in that year the performance of M_3 was additionally affected, first by a structural change following entry of the principal banks into the market for residential mortgages, and second (but in the opposite direction) by the growth of foreign currency balances held by UK residents in preference to sterling. These structural changes were a lagged consequence of the abolition of exchange control in 1979 and of direct credit controls in 1980. M_3 was also affected in 1981 by a prolonged alteration in the timing of tax receipts resulting from industrial action in the civil service.

Within this catalogue of special factors influencing M_3, the effect of prolonged inflationary uncertainty and high nominal interest rates on the pattern of corporate financing should also be mentioned. By the mid-seventies, these pressures had for practical purposes forced corporate borrowers to abandon the market in long-term fixed-interest debt. Although recourse to the equity market remained an option that continued to be used on a significant scale, medium-term variable rate borrowing from banks became an attractive and readily available substitute for long-term bond financing.[1]

Chart 4
Industrial and commercial companies' finance



(a) Including commercial bills held by the Issue Department of the Bank of England.

With the 'borrowing requirement' of the corporate sector being persistently large, this tended substantially to increase the degree of banking intermediation, and the growth of M_3. Recently, however, it has been counteracted by a debt management policy of 'overfunding'. By this process, the government borrows funds outside the banking system, that the corporate sector would formerly have borrowed directly, and in effect uses them to finance variable-rate lending by the banks. This was in the first instance done by repaying government debt in the hands of the banks and thereafter by repaying government debt in the hands of the Bank of England which in turn acquired short-term corporate debt from the banks.

This prolonged distortion of the financing patterns, resulting mainly from persistent and volatile inflation, has added to the uncertainties surrounding both the ability of policy to influence bank lending and the actual desirability of seeking the severe restriction of bank lending, as such, which M_3 targets of around 10 per cent per annum would

(1) Latterly there has also been a rapid growth in the leasing of fixed assets by banks to industrial and commercial companies. This development has owed a lot to the 'tax-efficiency' of the (profitable) banks leasing plant and equipment to those industrial and commercial companies who themselves had at the time no liability to corporation tax.

at first sight seem to imply. The success of the banking system in filling the gap left in corporate financing by the abandonment of long-term fixed-rate debt can be considered satisfactory and laudable. Yet counteracting its effect on M_3, by overfunding, must in the end raise questions about the politico-economic 'interface' between the central government and the corporate sector that are unlikely to remain unanswered indefinitely.

Alternative solutions

It is not surprising that all these difficulties with M_3 should have provoked close interest both in alternative target aggregates and in different techniques of control. If, for instance, another aggregate could have been found which had greatly superior behavioural characteristics, then it might have been worth sacrificing the advantages derived from the accounting linkage of M_3 with government borrowing, bank lending, etc. Indeed, many of us in the Bank of England have at one time or other undergone road-to-Damascus conversions to M_1; only to find that the new faith soon loses its apparent attractions.

To control M_1 there is only one single instrument to use, namely the short-term rate of interest. Other aspects of macroeconomic policy, for instance the fiscal balance and its financing, affect M_1 indirectly. But in this context they would scarcely be called instruments of money supply control. It follows that a change cannot in practice be made from M_3 to M_1, having started out with the former, at least unless the single instrument of control can convincingly be shown to be reliable and efficient. This we cannot do. Neither the amount of interest rate change needed to secure a given change in the growth of M_1, nor the length of time before the change is secured, can be estimated within limits sufficiently narrow. To reply that the actual amount of interest rate change needed does not matter, so long as M_1 is held within its target range, is to brush aside the risk of unacceptable side-effects on, for instance, the rate of exchange. Whatever the advantages of a visibly controlled money supply, no monetary executive in a democratic society can be blind to the risks and consequences of policy becoming so unintendedly severe as to forfeit the degree of public support needed to command authority.

As to ultimate objectives, M_1 has not recently shown superiority to M_3 in its relationship to income. Indeed there is some evidence that while M_3 tells us something about the future, M_1 merely confirms the present, most of which is already apparent from other sources. Nor, moreover, is M_1 at all immune from structural change caused by financial innovation. Finally, in order to steer by M_1 the policymaker is almost totally dependent on the findings of econometric research. The judgemental consideration of flow-of-funds forecasts, useful when brooding over M_3, is not a mark in favour of the latter. For whatever reason, but perhaps because the turbulent economic and financial climate of the past decade has led to frequent alterations of economic habit, or financial behaviour, policy makers in the United Kingdom have come to regard econometric optimism with some caution. It is almost as if relationships are in practice more likely to change than remain stable. In addition, there is no such thing as *the* econometrics of M_1. There are several, as with other aggregates. They carry differing messages, and all are vulnerable to upset by fresh research on the same data.

If we had started with M_1 we would no doubt have seen formidable disadvantages in a change to M_3. But we did not so start and for the wide variety of reasons sketched above the monetary authorities in the United Kingdom have not seen any net advantage in changing to M_1 as the target aggregate, although it was later included in the multi-aggregate target range that we now have. What then of a radical change in the technique of control? The modifications to the existing system which came into operation last August did not constitute such a change. In some respects they opened up the possibility of further and more radical change at a later date. But their main purpose was to improve the operation of the existing system, by better adapting it to current circumstances.

Radical change was considered in enormous depth by the monetary authorities and by outside commentators (not exclusively British), over a period of several years prior to 1981. The change debated was known as 'monetary base control'; though towards the end this seemed much more a generic term, with a whole range of sub-species, than a single specific technical construction. At one end of the range it amounted to medium-term targeting of the 'wide monetary base', defined as bankers' reserve balances at the Bank plus notes and coin in circulation, without close concern for month-to-month changes. Technically this would not have been very different from a rather loose targeting of M_1. At the other end of the range, monetary base control amounted to close control, perhaps almost week-to-week, either over a mandatory reserve base of the banks, regarded as a close proxy for money supply, or over non-mandatory operational balances of the banks at the Bank, regarded as a loose proxy for money supply loosely defined.

All these proposals presented difficulties that seemed just as formidable as those actually encountered by the existing control system when we endeavoured to carry out the task initially set us in 1979 and 1980. Targeting the note issue seemed to mean allowing whatever flexibility in short-term rates was needed to control an aggregate whose interest-elasticity was extremely low but whose income-elasticity was quite high. This looked like trying to use short-term interest rates to manipulate nominal GDP in order to control the note issue. This did not seem a particularly sensible way of pursuing a strategy in which nominal GDP was supposed to be affected by control of money rather than vice versa. The proposal to target a mandatory reserve base, to go to the other end of the scale, set out to impose on the authorities an almost total abandonment of discretion over the setting of short-term interest rates, with the aim of thereby achieving 'automatically' a close control of the money supply itself. The proposal to target a non-mandatory reserve base seemed designed to achieve the same ends but with less rigidity.

It is not easy to do justice to the controversy about reserve-base targetry in the United Kingdom in a single paragraph. But it might perhaps be summarised as follows. On the one side were those who were much influenced by the manifest behavioural characteristics of the monetary aggregates themselves and who judged that reserve base targetry would lead to an extreme instability in short-term interest rates, directly and indirectly damaging to industry and commerce, and damaging to government financing. This they judged would in turn probably lead to a serious renewal of cosmetic disintermediation, as the community sought to repair the damage by operating in ways which did not provoke the instability. In effect, on this view, monetary base targetry might conceivably achieve close control of a monetary aggregate or aggregates but at the cost of unacceptable side-effects and the setting in motion of structural changes that would undermine the meaning of what had been controlled. On the other side were those who argued that the discretionary setting of short-term interest rates would always in practice result in their being set too low to achieve proper control and that the inflationary expectations of financial institutions, industrial and commercial companies, and trades unions, would remain insufficiently reduced. Against the charge of extreme instability, advocates of base control tended to stress that while short-term rates might for an initial period move much higher than hitherto experienced, the effect on expectations and on economic and financial behaviour would be so dramatically favourable that proper control of money could thereafter be achieved without the damaging instability that some people feared. Moreover the rigidity of the base target, rather like martial law, could be eased once this favourable revolution had occurred. As one advocate put it, monetary base control would be a modern version of the discipline forced on monetary authorities by the gold standard, with its statutory obligations regarding maintenance of the gold convertibility of banknotes.

The arguments in favour of monetary base control did not in the end prevail. Perhaps this was because by the autumn of 1980 the attractions of a monetary revolution, never very great, had become less apparent to a macroeconomic executive which was having to deal with circumstances rather different from those with which the revolution was supposed to deal. For by then the need to have regard to a range of indicators, including the exchange rate, when judging the appropriateness of policy in respect of ultimate objectives, was becoming very evident. The behaviour of the target aggregate itself did not seem to be giving a reliable signal. Monetary base control did not seem relevant to this problem.

Conclusions

Among the many conclusions that could be drawn from the British experience with monetary targeting, this paper draws attention to four. The first of these is that it would scarcely have been possible to mount and carry through, over several years and without resort to direct controls of all kinds, so determined a counter-inflationary strategy if it had not been for the initial 'political economy' of the firm monetary target. Though not considered at the time, it would have been possible to initiate such a strategy with a familiar 'Keynesian' exposition about managing demand downwards, and with greater concentration on ultimate objectives than on intermediate targets. But this would have meant disclosing objectives for, *inter alia,* output and employment. This would have been a very hazardous exercise, and the objectives would either have been unacceptable to public opinion or else inadequate to secure a substantial reduction in the rate of inflation, or both. Use of strong intermediate targets, for money supply and government borrowing, enabled the authorities to stand back from output and employment as such and to stress the vital part to be played in respect of these by the trend of industrial costs. In short, whatever the subsequent difficulties of working with intermediate targets, they were vitally important at the outset in order to signal a decisive break with the past and enable the authorities to set out with presentational confidence upon a relatively uncharted sea.

The second conclusion is that the difficulties that have come to seem inherent in short-term monetary targetry are by no means fatal to the associated counter-inflationary strategy once its practical credibility can be established by the perceived behaviour of policy in response to the developing and disinflationary economic situation. For what matters is the refusal of the authorities to stimulate demand in 'Keynesian' fashion, or to 'reflate', as conditions develop that would in the past have justified and provoked such a response. The fact that the monetary targets have not concurrently been met, or that the meaning of particular developments in this or that aggregate has become very ambiguous, is of much less importance. At one time it was indeed feared that the difficulties encountered with M_3 would leave the strategy bereft of a vital ingredient. Experience now suggests that this fear was exaggerated. But it is recognised that maintaining the 'coherence' and credibility of strategy in such circumstances may be easier in a country where the conduct of macroeconomic policy is highly centralised, and where broad money is accorded greater importance than narrow.

The third conclusion concerns the continuing reinforcement of the strategy that has to be provided by annual statements of quantified macroeconomic intent. It is about the question: does it suffice just to continue with modified and qualified monetary targets, guidelines, or 'expected ranges' for a year ahead, accompanied by an ongoing policy of fiscal restraint, or has it become desirable to indicate an acceptable *medium-term* path for nominal GDP as well? On balance it is beginning to look as if the answer to this latter question may be 'Yes'. Without it the desired strategy can seem negative and stale, instead of offering a prospect of revival and recovery. Indicating an acceptable medium-term path for nominal GDP enables a greater emphasis to be placed on the favourable development of demand and output that could be accommodated within it if, for example, unit labour costs grew sufficiently slowly for the stance of policy to be made much less restrictive. This emphasis becomes more necessary once the level of unemployment, and other aspects of recession, are as much in the public mind as the falling level of inflation.

The fourth conclusion endeavours to answer the question of whether modifying and qualifying the monetary target leaves us so prone to a weakening of counter-inflationary resolve that there is need to reconstitute a published 'overriding constraint' or 'long-stop'. The obvious and indeed only remaining candidate for this vacancy, certainly in the United Kingdom, is the rate of exchange; and it looks as if the answer to the question is both 'not quite' and 'not yet'. It is clear that we pay close attention to the exchange rate when taking policy decisions, in particular it was clear last autumn, when short-term interest rates rose 4 per cent in the trough of a deep recession, that a further depreciation of sterling would have been most unwelcome to the UK authorities. It is equally clear that although the behavioural characteristics of the exchange rate, as an intermediate target, can be as tiresome as those of a monetary aggregate, its political economy is much superior. Everyone knows what it is. But in present international monetary conditions a pegged exchange rate regime for sterling, in isolation, would be sufficiently vulnerable to volatile short-term flows that such an open commitment would seem on operational grounds better avoided; there is in any case economic as well as operational advantage in preserving room for manoeuvre. As with the money supply so with the exchange rate, the attempt to honour too rigid a commitment may create unintended and intolerable side effects. So for the present, an exchange rate 'long-stop' may be better provided through the practical evidence of official behaviour than by publicised alteration of the present regime.

Reference was made at the beginning of this paper to British empiricism. As may now be visible, this means that setting objectives for the money supply, and endeavouring to carry them out, has become a more humble pursuit. It does not lack resolve, or a clear sense of direction, but it recognises once more that the successful execution of monetary policy requires the exercise of judgement, and of a constantly interpretative approach to the evolving pattern of evidence. Except in some grave emergency, or in the initial phase of a novel strategy, the abandonment of judgement in favour of some simple, rigid, quantitative rule about money supply does not reliably deliver acceptable results. This has been disappointing for those who distrust discretion and admire rules. But the humble pursuit is also disappointing for those who admire discretion and have no use for rules at all. The right balance has to be found empirically, as we go along.