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**“RULES VERSUS DISCRETION”:
AN ESSAY ON MONETARY POLICY
IN AN INFLATIONARY ENVIRONMENT**

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“RULES VERSUS DISCRETION”: AN ESSAY ON MONETARY POLICY IN AN INFLATIONARY ENVIRONMENT

Introduction

This is an essay on the conduct of monetary policy by western industrial countries in today's inflationary environment – or, more precisely, an attempt to answer some of the questions raised by two clearly discernible trends in the recent history of western monetary policies: first, the increasing, and in some cases dominant, reliance on monetary policy in fighting inflation; and, second, in the field of monetary policy techniques, the move away from discretion towards rules.

There can be little doubt about the prevalence of both these trends. In striking contrast to what happened after the first oil shock, the fight against inflation has become the first, declared, policy objective of most major western governments. Given the high level of unemployment, slow growth and (more recently) even recession, this in itself can be regarded as a remarkable development. What is even more remarkable is that the brunt of the anti-inflationary policies seems to be being borne by monetary policy: the historically high interest rate levels as well as the slower growth (or in some cases even the decline) of real money supplies suggest at first reading a generally restrictive stance in monetary policies, in conformity with declared policy intentions. At the same time fiscal policy does not support the stance of monetary policy. All western countries are running public-sector deficits, and a few of them very large ones. According to one view, however, the fiscal policy stance

is less inflationary than is suggested by the actual figures: deficits would appear much smaller, in some cases even nil, if the accounts were adjusted to reflect the high degree of unemployment and the inflation-induced erosion of the real value of the public debt. My own view is, first, that the theoretical foundations on which such adjustments are based are uncertain, while the measurement problems they raise are formidable; and, second, that even assuming these problems could be solved, no amount of adjustment can negate the undisputed fact that the existence of a public-sector deficit exerts an influence on the economy which runs counter to that of a restrictive monetary policy. This influence, whether it should be called anti-deflationary or inflationary, increases the burden borne by monetary policy – at any rate as long as the authorities' aim is to restrain aggregate spending. As for incomes policies, the situation is even clearer: mandatory price and wage controls have gone out of fashion in most major economies. To a casual observer from Sirius the western industrial world would appear to have become gradually converted to the basic principle of monetarism that an appropriate monetary policy is a necessary *and* sufficient condition for achieving price stability.

He would be further confirmed in this impression by observing that this “appropriate” monetary policy is conducted in most countries by setting publicly announced target rates of growth for monetary aggregates, and that the largest of the western countries has decided to try to steer its money supply by controlling the banks' reserve base instead of the Federal funds rate. There can be little doubt that the trend has been away from “discretionary” policy towards policy “by rules”.

It is not too difficult to identify the two main reasons for these developments. The first is the apparent failure of discretionary Keynesian demand management, coupled with incomes policies, to solve the twin problems of inflation and unemployment. In fact, since the inflationary boom of 1972–73 and the first oil shock almost all western industrial countries have continued to experience unacceptably high, albeit variable, inflation rates and relatively

high unemployment. Whenever expansionary policies were applied in order to speed up growth and to contain unemployment, the initial, short-term impact on the level of activity was positive, without immediately rekindling inflation; but after some time-lag inflation accelerated, growth slowed down and unemployment started rising again. And in some important and very visible instances incomes policies proved to be ineffective in slowing down the increase in money incomes and prices, while at the same time they created distortions and stored up trouble for the future.

Exceptions to the general rule of high inflation and unemployment rates are very few – essentially West Germany and Switzerland – and seem to confirm, rather than disprove, the rule. Both countries have been pioneers in the use of restrictive monetary policy and have more or less consistently practised monetary targeting. Note, however, that given the inflation-dampening effect of currency appreciation it is by no means evident that even these countries have fully succeeded in bringing “home-made” inflation under control. Perhaps because they did not apply the prescriptions of monetarism with sufficient rigour and consistency? Or because they occasionally relapsed into Keynesian demand management, as did Germany, under international pressure, in 1979?

The second event that has played an important rôle in disseminating the policy and technique of monetary targeting was, of course, the collapse of the par value system in March 1973. Floating has made the setting and the effective meeting of money-supply targets both possible and desirable. Possible, by avoiding central-bank intervention in the foreign exchange market leading to excessive money creation; and desirable, by driving home the truth that excessive domestic monetary expansion rapidly leads to the external depreciation of the currency, which then in turn fuels domestic inflation, thus pushing the country into the vicious spiral of depreciation/inflation.

The negative experiences of shifting Phillips curves and of inflation-accelerating currency depreciation have thus gradually paved the way for reliance on more conservative monetary policies and

even, in a number of countries, for the broad acceptance of monetarist principles and techniques, as has been rightly observed by our friend from Sirius. But has the authorities' conversion to monetary conservatism in general, and to monetarism in particular, been justified? Can one hope that the two trends identified at the beginning of this essay will provide the optimal answer to the twin evils of inflation and unemployment?

There are two reasons for which a positive answer to these questions is far from obvious.

The first, more abstract, one is that it may be a *non sequitur* to progress from a negative, even harsh, judgement on past policy mistakes to the adoption of monetarist prescriptions. Not, of course, in the minds of monetarist theory builders, whose doctrine is certainly logically consistent and provides plausible arguments for simultaneously explaining why Keynesian demand management-cum-incomes policies were bound to fail and why their own policy prescriptions are bound to be successful. But if one abandons the monetarist frame of thinking, there seems to be no obvious reason, I submit, why one could not at one and the same time condemn past policy mistakes yet nourish serious doubts about the desirability of conforming fully and consistently to monetarist policy recommendations, or even of relying solely on restrictive monetary policy. Is there no place for an intellectually respectable and politically acceptable eclectic view? Are we condemned to choose either Scylla or Charybdis?

The second, humbler, more pragmatic but perhaps more important reason is derived from observing that precisely those central banks which try to conform most faithfully to monetarist prescriptions experience great difficulties in (a) selecting an appropriate monetary aggregate as a target, and (b) devising workable monetary control techniques that would enable them to hit this target with acceptable accuracy.

Several premises will be taken for granted throughout the discussion. The first is the acceptance of the declared policy stance of the major western countries: that the fight against inflation should be

regarded as a policy objective of the first priority. The second is that fighting inflation will not be successful without recourse to non-accommodating, i.e. in some sense restraining, monetary policies. This premise implies, for most countries, the need to slow down significantly the rate of increase of monetary aggregates from the rates recorded before such policies are adopted. This, of course, is not the same as to rely primarily, let alone exclusively, on monetary policy – the difference between these two views being precisely at the centre of the debate. The third premise takes for granted that a large public-sector borrowing requirement will usually be incompatible with the effective conduct of an anti-inflationary monetary policy either because of its direct income-creating effect or because it entails excessive monetary financing, or for both reasons at the same time; and when it is not incompatible, i.e. when the monetary authorities succeed in offsetting both these influences, it will lead to high real interest rates and may therefore “crowd out” private capital expenditure.

The structure of this essay is as follows. Section I outlines the analytical foundations of two schools of thought which provide alternative frameworks within which it is possible to analyse the reasons for, and the limits to, the heavy reliance on monetary policy in combating inflation. This leads in Section II to the identification of three problem areas raised by the active, anti-inflationary use of monetary policy, each of these being discussed in a separate section. The questions looked at are: How to minimise the short-term social costs of such a policy – or, in other words, how to ensure its effectiveness (Section III)? How to deal with its longer-term potential costs (Section IV)? How to ensure the effectiveness of monetary control techniques (Section V)? It will appear from the discussion that while the first two of these questions seem to be relevant to all industrial countries, the third is of major importance only to the “Anglo-Saxon” world, in particular the United States and the United Kingdom. Section VI examines some of the international implications of anti-inflationary monetary policies. The conclusions deal explicitly with the rules versus discretion issue.

I.

One great difficulty in discussing the pros and cons of relying on monetary policy as the dominant weapon in the fight against inflation is that the theoretical foundations on which such policy proposals are based are by no means uniform, and that therefore the prescriptions themselves are of a great variety. For the sake of clarifying the discussion, and at the risk of being accused of oversimplification, I shall try, in what follows, to draw the contours of two schools of thought: the monetarist or, more precisely, the quantity-theory school; and another, less easy to identify, which I shall label the "conservative Keynesian demand-management" (CKDM) school. I shall outline only those features of these schools of thought that are of direct relevance to the practical policy issues, with a view to highlighting the main problem areas raised by the heavy reliance on monetary policy in combating inflation.

Thanks to the monetarists' expository gifts, and despite their internal strife, their stylised position is easier to sum up. The process of inflation is always and everywhere a monetary phenomenon; an appropriate monetary policy is, therefore, a necessary and sufficient condition for bringing inflation under control. Concretely, their prescription is to ensure that the rate of expansion in the money supply is reduced to a level which will accommodate real growth but no further price increases. Once this objective has been achieved, the money supply should be managed so that it expands at a stable rate. No attempt should be made to use variations in its rate of growth as an anticyclical device. As regards the control technique, most monetarists recommend that the money supply should be controlled through the regulation of the monetary base rather than by directly influencing the interest rate. They look upon credit rationing with the same horror and distaste they display towards any kind of incomes policy. Anything that interferes with the market mechanism only creates distortions, and prevents the "real" economy from finding its optimum equilibrium position.

What are the assumptions behind these recommendations? Four of them would seem to be of particular relevance for a policy discussion.

The first is derived from the traditional quantity theory: there is a stable medium-term relationship between money supply and money income which is assured by the rate of increase in prices adjusting itself to that in the money supply. Income velocity may fluctuate in the short term. The short-run impact of monetary policy may be on output rather than on prices. The effect of interest rate changes on the demand for money is not denied. But none of this matters in the longer run because in that perspective money becomes “neutral”: all prices, including interest rates, are adjusted to that part of the rate of increase in the money supply which exceeds the real growth rate. The conclusion derived from these assumptions is that, in the long run, money supply should grow at the same rate as the growth potential of the economy.

The second assumption is that the private economy is basically stable, i.e. that it is regulated by a self-equilibrating mechanism which will tend to push it back towards the equilibrium path whenever external shocks create an imbalance. In its milder version, this assumption would state that the private sector will be less unstable if left to its own devices than if governments interfere with it. This means, for instance, that as long as no distortions are created by government interference – such as minimum wages – there can be no such thing as protracted unemployment. Hence the double conclusion that (a) government interference should be eliminated, and (b) monetary policy should be put on an even course to allow the “real” economy to find its own equilibrium. In other words, the rate of money-supply growth should be steady, cutting across whatever short-run fluctuations there may be in output or employment.

The third assumption leads to a recommendation which is supposed to minimise the inevitable social cost inherent in the transition from inflation to price stability. Monetarists do not deny the existence of such a cost. Specifically, they do not deny that a reduction in the rate of money-supply growth may lead in the short run

to unemployment and loss of output, and that the faster the inflation and the more pronounced the inflationary expectations, the heavier this inevitable social cost may be. To minimise this cost they offer a recipe based on an adaptation of the rational expectations theorem to monetary policy. They believe that the credibility of the authorities' commitment to reducing the rate of growth of the money supply to a non-inflationary level will be a critical factor in the speed with which market participants adjust their pricing policies. The speedier this adjustment the shorter the period of transition to price stability will be and hence the smaller the amount of output and employment that will be lost. The practical conclusion (aiming at maximum credibility) is that the authorities should commit themselves *publicly* to their money-supply target, and should meet this target on a short-term basis.

The fourth assumption is that a predictable functional relationship can be established between the targeted money-supply figure and high-powered money. Authorities should therefore use monetary base control as their control technique.

To put it simply and provocatively, monetarists claim that a money-supply policy conducted on these lines will restore price stability, or near-stability, within the space of a few years. During the transition period society may have to suffer income and employment losses and painful sectoral adjustments; but once prices have stabilised, the "natural rate" of unemployment will reassert itself and the economy will be set on a non-inflationary growth path provided the authorities have stopped interfering with the market mechanism.

Let me now outline the stylised position of the "conservative Keynesian demand-management" (CKDM) economist. He is "conservative" because, for a variety of reasons, the most important of which is that he feels guilty about his neglect of the rising inflationary pressures during the 1970s, he has come to attach prime importance to the fight against inflation. He is "Keynesian" because his analytical framework remains that of the LM-IS functions, though perhaps in a slightly modernised version. And he is a "demand-

management” economist because, being employed by a government agency, an international organisation or even a central bank, he is supposed to advise his employers on how to manage total expenditure so as to ensure a reasonable degree of employment and satisfactory growth, yet keep inflation as low as possible (“less than two digits”). He has lost some of his faith in demand management, but not all of it. The identikit picture of this composite animal is not easy to draw, partly because he is undergoing a process of evolution, and partly because his ability, time and inclination to build elegant and watertight theoretical models are limited.

For such an economist, monetary policy is first and foremost one of the tools of demand management. He may have some doubts as to whether it is the best tool. Perhaps a few years ago he would have expressed a preference for fiscal policy; but now he would certainly not wish to be accused of believing that money does not matter. Moreover, he knows from experience that the fiscal stance is not easy to move. At any rate, if monetary policy is supposed to curb inflation, it can do so only by adopting a restrictive stance, i.e. by exerting restraint on the level, or at least the rate of growth, of total expenditure. He has no doubt about the effectiveness of demand management in the direction of restraint.

The resulting slack in the economy – surplus capacity and unemployment – will slow down the rate of growth in prices and wages. However, since money wages are rigid downwards everywhere, and even *real* wages are rigid downwards in quite a few countries – the competition for distributive income shares among all social groups being lively – the CKDM economist will display a fair amount of pessimism about the effectiveness of such policies. He will thus tend to believe that prices and wages will react only slowly to the emerging slack in the economy, and that even a protracted recession will be unable to restore complete price stability. His natural tendency will therefore be to look for other policy measures to strengthen the stabilising effect of monetary policy.

There are divergent views among CKDM economists on two sets of questions.

First, on the combined questions of the transmission mechanism and the choice of the optimal monetary control technique, i.e. on exactly how monetary policy should be operated to restrain global expenditure. In the old days most of them would have advocated raising interest rates. But in an inflationary environment, which entails not only rising but also volatile inflation rates, it is difficult to identify the increase in interest rates that would be required to restrain spending effectively. This fact has revived interest in finding ways and means of producing a shortage of funds, an objective which seems to have become increasingly difficult to achieve. Hence the temptation either to flirt occasionally with, or to have systematic recourse to, quantitative credit controls.

The second area of disagreement concerns the ways and means of minimising the social cost involved in restrictive monetary policies. Most CKDM economists would favour using some form of incomes policy to achieve this objective. But there are all shades of opinion as to what incomes policies should involve and how they should be implemented. At the one extreme, favoured by only a shrinking minority, there is the idea of mandatory wage and price controls; at the other, that of a pragmatically achieved, informal social consensus. In between, there are a number of proposals, such as linking the observance of wage or price guidelines to fiscal advantages or penalties. Another dividing issue is that of whether incomes policies should be regarded as a permanent feature of economic policy, or should be applied just for short periods, in order to halt the cost/price spiral. Finally, a number of CKDM economists are looking with interest at proposals inspired by "supply-side economics", or at proposals aiming at the removal of market imperfections and all kinds of rigidities. In this particular field, they are in the company of most monetarists.

II.

In what follows, I propose to discuss three broad sets of questions arising from the active anti-inflationary use of monetary policy. All three are recognised as valid and important ones by the disciples of both schools of thought outlined in the previous section; the answers they give to them are, however, very different.

The first, most obvious and politically most important question is how to minimise the short-term social cost inherent in anti-inflationary monetary policy. That an anti-inflationary monetary policy is liable to lead in the first place to losses of output and employment is acknowledged by both CKDM and monetarist economists. This is an obvious conclusion for demand-management economists, who claim that this is precisely how monetary policy is supposed to curb the rate of increase in wages and prices. In earlier days monetarists did not display a passionate analytical curiosity about the short-term transmission mechanism linking money income to money supply: this is how they came to be accused of using a "black box". But nowadays only very few of them would deny that the first, restrictive, effect of a newly implemented anti-inflationary money-supply policy will fall on output and employment. Since there *is* agreement on this point, I see no practical interest in trying to find out whether the "black box" accusation is a valid one. What matters from a policy point of view is that the recognition of the output and employment losses resulting from the implementation of an anti-inflationary monetary policy clears the way for asking meaningful questions about how to minimise these losses.

A second, less clearly defined group of questions relates to longer-term developments or, more precisely, to the potential longer-term costs of an anti-inflationary monetary policy. The implicit objective of any such policy is to prepare the ground for the resumption of non-inflationary real growth, once the recessionary period of transition is over. To ask how to shorten this period of transition is just to rephrase the first question. There are also a number of legitimate questions about what policies will have

to be pursued in order to stimulate growth, but these questions fall outside the scope of this essay. There is, however, another problem area, falling between these two questions, which is very relevant to the current conduct of anti-inflationary monetary policy: how should this policy be pursued so as best to prepare for the future take-off of the economy? Or, to put it negatively, what should be done to ensure that this policy does not cause the economy's future growth potential to be eroded? This question, which quite obviously concerns the impact of current policies on investment and productivity, is viewed quite differently by the two schools of thought. Monetarists, with their strong, cheerful belief in an optimum allocation of resources created by the free working of market forces, seem to be unconcerned as long as government intervention is reduced *pari passu* with the implementation of their monetary policy. CKDM economists, on the other hand, brought up in the tradition of the LM-IS model, retain the uncomfortable feeling that restrictive monetary policy will first and foremost hit corporate investment.

The third major problem area is that of the effectiveness of monetary control techniques. Assuming that monetary policy *is* to be used in the fight against inflation, what can monetary authorities do to ensure that the intermediate targets are effectively reached? For monetarists, the question is that of how to reach the money-supply target: we know that most of them suggest, as a control mechanism, the regulation of the monetary base. For demand-management economists, the objective is to maintain a "tight-money policy", but they have great trouble in defining and measuring what "tightness" means, while, as for the control mechanism, they are divided among themselves between those who favour the use of the market mechanism – interest rates – and those who want to apply credit controls. The questions seem different, but we shall see that there are similar reasons for both types of policies running into control problems.

These three sets of questions will be dealt with in the next three sections.

III.

How is the short-term cost of anti-inflationary monetary policy to be minimised? The succinct answer is: by shortening the period of transition to price stability or, in other words, by making sure that the rate of inflation is effectively reduced, and is reduced with a minimum loss of output and employment. Note that by giving this answer, on which economists belonging to both schools would agree, one raises at the same time the most fundamental question: *how* to ensure the effectiveness of an anti-inflationary monetary policy?

It may be useful, at this stage in the discussion, to formulate a few minimal assumptions about the working of the process of inflation in general, and about the rôle of inflationary expectations in that process in particular.

An “inflationary environment”, to which the title of this essay refers, can be defined as a situation in which a sufficiently high rate of increase in the general price level has been witnessed for a sufficiently long time for it to be an element in the decision-making process of businessmen, trade unionists, households, financial intermediaries and the authorities – i.e. of all market participants. With the possible (but uncertain) exception of one country – Switzerland – the western industrial world is now undoubtedly in such a situation. This means that market participants are fully aware of the fact of inflation and therefore form expectations about its future course.

I would assume that in such a situation the behaviour of prices will depend, on the one hand, on market participants’ *ability* to set a price and, on the other, on the consensus that has been reached amongst them on the expected course of inflation, i.e. on *inflationary expectations*. Their ability to set a price will in turn depend on the prevailing relationship between supply and demand in their market (as measured by the degree of unemployment or surplus capacity) as well as on their relative market, or monopoly, power or, more broadly, on market imperfections. Thus, for instance, I would assume that at a given rate of unemployment in the labour

market, the rate of wage increase will be a positive function both of the unions' monopoly power (and of other labour-market imperfections) and of the generally expected future course of inflation. Or, to put it the other way round, at given inflationary expectations and at given market imperfections, the rate of wage increases will be determined by the degree of unemployment. *Mutatis mutandis*, the same proposition can be applied to any particular market.

All this boils down to saying that the rate of current inflation will be a function of the existing slack in the economy, of the number and size of individual social groups which entertain the belief that they are able to increase their share of national income by more than they could in perfect markets (i.e. of market imperfections), and of expectations about the future rate of inflation. The relative importance of these factors will probably vary over time and also differ from country to country. From a pragmatic policy angle I would, however, be tempted to assume that the process of inflation has become so strongly imbedded in the social fabric of almost all western countries that it cannot be halted unless *all three* causal factors are attacked simultaneously through policy measures. Since there would seem to be little doubt in the minds of most economists that slack and more competition are necessary to achieve success in the fight against inflation, the critical question concerns additional ways and means of defusing inflationary expectations.

The crucial problem here, of course, is that precious little is known about what determines inflationary expectations. Since monetarism proposes a simple, *a priori* plausible, assumption in this field, apparently appealing to common sense, its approach is a good starting-point for discussion. The essence of the monetarist argument, already mentioned in Section I, is that the inflation rate is a function of the rate of money-supply growth; that market participants are aware of this functional relationship (our historical experience is reflected in statements like: "too much money chasing too few goods", "the printing press lies at the root of all major inflationary experiences", etc.), so that if a publicly announced money-supply target is gradually reduced and effectively adhered to people

will *know* that the authorities' policy is really anti-inflationary. They will therefore *expect* a decline in the inflation rate, their *current* pricing policy will therefore take account of these expectations, and the rate of inflation will therefore start declining as soon as the credibility of the authorities' commitment to a money-supply target has been firmly established. "Rational expectations" will decisively shorten the period of transition to price stability, and thus minimise output and employment losses.

There seem to be two weaknesses in the chain of reasoning on which this basically optimistic outlook is founded. Firstly: why should market participants assess the authorities' commitment to fighting inflation exclusively (or even principally) in the light of their determination and ability to control the development of the money supply? Secondly: why should market participants base their expectations exclusively on the credibility they attach to the authorities' commitment to fighting inflation?

Let me begin by discussing this second, more general, objection. I should not dream of denying that the expected course of inflation is likely to be influenced by the authorities' perceived determination to implement anti-inflationary policies. After all, it is probably true that the greater part of the public sees the government as being responsible for inflation, through excessive money creation, excessive spending, excessive regulation, and so on. But any such statement should be qualified on two grounds. First, it has to be borne in mind that our modern democratic societies have acquired a strong, and probably justified, scepticism about both the willingness and the ability of elected governments to pursue strict anti-inflationary policies with sufficient determination. Second, it seems reasonable to assume that from their own experience many market participants will know that the direct impetus for price increases may find its origin outside the sphere of government policies: for instance, in an oil shock or in the competitive struggle for distributive income shares. These market participants will not necessarily reason in terms of an ongoing process of inflation that presupposes accommodating government policies. For both these reasons, the

slightest acceleration in the rate of increase in the consumer price index – whatever its proximate cause – will be looked upon by many market participants as “proof” that the authorities are not pursuing their policies with sufficient vigour or, alternatively, that they are unable to control price increases. To put it briefly, common sense would suggest that it would be a mistake to disregard the influence of current inflationary experience, i.e. of the currently observed rate of increase in prices, on the expected course of inflation. Or, to put it more positively, the credibility of the authorities’ anti-inflationary policy stance can be much weakened by an adverse current development of prices.

Two examples may be quoted to illustrate the problems that can arise from inflationary expectations being revived by a jump in current inflation rates. The first is that of a situation in which a government implements a policy of global demand restraint, one ingredient of which is an increase in indirect taxation. Will the public attach greater importance to the *forecast* of improved macroeconomic figures (which would imply both an act of faith *and* a certain capacity to grasp the significance of some abstract, technical data) or to the immediate experience of higher consumer prices?

A second example is provided by the price-raising effect of a currency depreciation or, more specifically, of a devaluation. Monetarists usually reply to the practitioners’ concern in this sphere by saying that, on the one hand, currency depreciation (or the need for a devaluation) will not arise as long as the growth of the money supply is under control, and, on the other, that the very way the adjustment process induced by a depreciation works is to bring about an increase in prices which, with a money supply that is growing appropriately slowly, will lead to a decline in real balances. The problem, however, is (a) that “external shocks”, or “portfolio shifts”, have proved to be quite frequent in the past, in some cases producing downward pressure on a currency even when the domestic money supply was expanding at a slow pace; and (b) that a devaluation, even more than higher indirect taxes, is likely to strengthen inflationary expectations. Given their historical experiences, market

participants' reaction would indeed appear remarkably "rational". A government facing such a situation would therefore have to choose between letting its currency depreciate, and thereby running the risk of enhancing inflationary expectations, and having recourse to other policy measures normally proscribed by monetarists. Such policy measures could, for instance, include exchange-market intervention, price and wage controls, or a monetary (and notably interest rate) policy which would have to be *tighter* than that recommended by monetarists.

Let us now come back to the proposition that market participants' expectations about the authorities' determination to fight inflation are likely to be formed exclusively on the basis of the money-supply figures. My doubt about the validity of this proposition is based on two considerations. The first is the same as the one put forward above, viz. that in a society which is sceptical about the authorities' determination and/or ability to fight inflation, people will tend to look at many more than one single criterion before making up their minds whether or not to revise their inflationary expectations downwards. Assuming that they attach some importance to macro-economic statistics, they will probably look at the public sector's deficit as much as they would look at monetary aggregates. But the second point is that among these other criteria they will give pride of place to those facts that affect their daily life rather than to statistics. Or, to put it more simply, I would tend to believe that those anti-inflationary measures that actually "bite", and are seen and felt to do so, will do more to defuse inflationary expectations than will the strict, short-run observance of a money-supply target, which, after all, is a mere abstraction. Anti-inflationary money-supply targeting will, of course, be correlated in many instances with high and rising interest rates, a shortage of funds, surplus capacity and unemployment – all directly observable, "biting" anti-inflationary measures. But recent experience has clearly shown that such a correlation does not hold in all circumstances; and when it does not the authorities will find themselves in the painful predicament of having to choose between abiding by the

money-supply route, and thus reviving inflationary expectations, or accepting deviations from the money-supply target.

The second quarter of 1980 in the United States provided one example of such a broken correlation. The unexpectedly sharp fall in US activity led to a sudden decline in the transactions demand for money. The subsequent efforts of the Fed to prevent the money supply from actually falling contributed to a major drop in interest rates and created an abundance of funds as a result of which financial intermediaries actively sought new borrowers. The reversal in the state of the financial markets between the first and the second quarter was dramatic; it would have been even more spectacular if the Fed had been willing (or able) to follow the monetarist prescriptions strictly and to make the money supply grow at the target rate. The early revival of housebuilding and the simultaneous pick-up in real estate prices that followed the pronounced easing of market conditions suggest that in this large segment of the US economy the first quarter's shock treatment was insufficient to weaken inflationary expectations.

Events in the second quarter were followed by another reversal during the third and fourth quarters, when the sharp upturn of the economy led to a renewed acceleration in money-supply growth, an overshooting of the target and another sharp increase in interest rates. But even if one looks at 1980 as a whole, rather than concentrating on the relatively short period of monetary ease during the second quarter, it is hard to believe that the sharp fluctuations in market conditions made a more effective contribution to the defusing of inflationary expectations than would have been made by steadily high interest rates somewhere around the yearly average, throughout the period. On the contrary, it would seem possible to argue that instead of "signalling" to the market the monetary authorities' determination to fight inflation, fluctuations in interest rates and market conditions merely added to the uncertainty and – despite the Fed's heroic effort to try to explain what it was doing – created a lot of confusion in the minds of market participants about the "stance" of monetary policy. One shudders at the thought of

what would have happened to interest rates, and of the confusion that would have prevailed in the markets, had the authorities managed to stay on the targeted money-supply path on a quarter-to-quarter basis.

The upshot of these critical remarks is quite simple. Inflationary expectations have become so deeply rooted in the economic, social and political fabric that it would seem just as unrealistic to “explain” them in terms of one single causal factor as to suggest that the removal of that hypothetical causal factor would effectively and quickly defuse them. This, of course, is not an argument against setting, and even publicly announcing, money-supply targets, since (a) the least monetarist of economists would agree that there is little chance of reducing an ongoing process of inflation without putting a brake on the growth of monetary aggregates, and (b) this fact is widely acknowledged by the public. The proposition becomes unrealistic, however, when it is assumed (a) that announcing monetary targets and adhering to them is all that is needed to defuse inflationary expectations, and (b) that when there is a potential conflict between strict, short-term, adherence to a medium-term target and market or interest rate developments that are apt to nurture inflationary expectations, or simply to confuse market participants about the authorities’ intentions, preference should *always* be given to abiding by the money-supply route.

Having said this, however, I must confess that what follows from this critical assessment of the monetarist thesis is neither very pleasant nor intellectually very tidy.

It is not very pleasant, because the criticism implies that with strong and intractable inflationary expectations there is simply no policy short-cut to a fast reduction in inflation rates. Or, to put it differently, establishing the credibility of an anti-inflationary policy is a protracted, long-term affair in which success will be achieved only by consistently resorting to a broad set of anti-inflationary policy measures.

The lack of tidiness becomes apparent when one tries to spell out what these measures should be. My own answer is based on the

sketchy theory of price increases set out at the beginning of this section and on the (admittedly gratuitous and possibly unverifiable) assumption that a theory of this kind is very much in the mind of most market participants. I would accordingly propose the following policies with a view to shortening the transition period to price stability:

(a) An effectively “restraining” monetary policy that maintains, for as long as necessary, some degree of slack in the economy, both in order to dampen price increases directly *and* to defuse inflationary expectations by lending credibility to the government’s commitment to fight inflation. This would have to involve a level of interest rates which, as far as can be intelligently judged (or guessed), remain consistently positive in real terms. There is room, within a policy of this kind, for money-supply targeting, as long as effective restraint is achieved, and is seen to be achieved, by the setting and meeting of such targets;

(b) A public-sector borrowing requirement that is compatible with (a) both by allowing monetary policy to be restrictive and by not fuelling inflationary expectations;

(c) A policy of removing market imperfections, i.e. obstacles to the actual price or incomes declines which would normally be produced by the slack resulting from such a monetary policy. Several arguments underline the importance of this proposition. The most important is that there would be a basic contradiction between, on the one hand, implementing monetary policies that deliberately create slack in the economy in order to put some pressure on prices and, on the other hand, tolerating “institutionalised” price rigidities or, even worse, taking policy measures (such as officially enforced production cuts) that will in fact prevent prices from falling. It may be worth recalling that such measures found their origin in the “cut-throat competition” experiences of the early 1930s at which time one of the main problems was to find ways and means of preventing excessive price declines – an environment exactly the opposite to that prevailing today. A second argument is that there would be no point in taking initiatives inspired by “supply-side economics” if the

better adjustment of supply to demand were not to result in lower prices or at least lower price increases;

(d) In order to weaken inflationary expectations even further:

– a policy that avoids cost or price-push effects such as those deriving from currency depreciation or higher indirect taxation;

– wherever politically feasible, an incomes policy that has a direct and perceptible effect on the rate of increase in prices, it being understood, however, that the social consensus needed for implementing such a policy may in fact make it more difficult to achieve progress along the lines of proposition (c). There is no point in suggesting in the abstract what the trade-off between these two policy prescriptions could be, as any such trade-off will depend on each country's tradition and social structure. One of the weaknesses of extreme monetarism is precisely that of overlooking the obvious truth that countries – even within the western industrial world – differ from each other in this respect.

IV.

Let us now turn to the second problem area – the potential longer-term costs of using monetary policy as the main weapon in combating inflation. The recent histories of the United Kingdom and of Belgium, while in many respects very different from each other, help to highlight the nature of the problem. This essentially amounts to the fact, clearly perceived by CKDM economists but often ignored by monetarists, that without the support of other policies the brunt of restrictive monetary policies is likely to fall on the corporate sector's profits, and therefore on its capital formation – thus eroding the country's capacity for future non-inflationary, unemployment-absorbing growth. It is worth stressing that by pointing out this problem my purpose is not to question the view that inflation is bad for investment – but, rather, to suggest that, depending on the social and institutional setting, certain kinds of anti-inflationary policies can be equally bad.

The dilemma which was faced by the UK authorities in the second half of 1980 is well known. The economy was in the grips of the sharpest recession since the end of the Second World War, with industrial production down below the level reached ten years earlier and unemployment at its post-war peak, while corporate profitability was declining to an alarmingly low rate. At the same time, inflation was beginning to decelerate. Confronted with these facts and the existence of high nominal (and real) interest rates, CKDM economists would have concluded that the authorities' anti-inflationary policy was "biting", and in no small way. Yet as a result of the recession the public sector's borrowing requirement did not decline to the level planned by the Government, and this led to unexpectedly heavy monetary financing by the banking system, which was already responding to "cash-drain borrowing" by corporations, or to the desire of the latter to sustain their gross liquidity position. Since at the same time the real income of households continued to expand, their savings surplus also increased. Thus banks developed their intermediation business between households on the one hand, and corporations and the public sector on the other. As a result, sterling M_3 grew much faster than the target set by the authorities, who were therefore faced with the alternative of either pushing interest rates still higher, which would have implied the risk of aggravating the recession, or accepting a deviation from the money-supply target. They opted for an interest rate cut, i.e. implicitly for the second policy route – and, in my view, rightly so.

The reasons for this judgement can be explained by raising, and answering, two questions. How is it that the authorities were beginning to be quite successful in bringing down the inflation rate, i.e. in reaching their "final" target, at a time when they were heavily overshooting the "intermediate" one? And how is it that while the policy was "biting", it was "biting" in the wrong place, i.e. in the corporate sector?

The main explanation lies, of course, in the appreciation of sterling – about 22 per cent. in terms of the effective, trade-weighted,

exchange rate between the spring of 1979 and end-1980. This was the result of relatively high interest rates, coupled with the impact of North Sea oil and international confidence in the country's conservative policies, the combination of which led to a sharp shift in international portfolio preferences. To this must be added the continuation of wage inflation as well as the exceedingly poor productivity performance of British industry. Hence the spectacular worsening of UK industry's competitive position – by about 35–40 per cent. if measured in terms of relative unit labour costs. This is why income distribution shifted drastically against the corporate sector, raising the risk of a radical decline in fixed capital formation. As for the fast growth of sterling M_3 during the same period, it did not imply any monetary “ease”: it merely reflected the expanded rôle played by banks in the intermediation of sectoral financial deficits and surpluses, and in the provision of badly needed liquidity to industrial corporations. This rôle is analogous to that played by banks in recycling the OPEC surplus, and its inflationary implications are just as much open to doubt as those of the post-1973 expansion of the balance sheet of the international banking system. What would have happened to the UK economy if the banks had not been able to “recycle” the household sector's large financial surplus to the corporate and public sectors? Or to put it somewhat differently: what difference would it have made (from the point of view of future inflation) if, instead of acquiring financial claims on banks, households had acquired other financial assets, as liquid as their deposits with banks, but *not* included in sterling M_3 ?

There seem to be two lessons that could be drawn from the UK experience. The first concerns the conduct of monetary policy itself. When a sharp appreciation of the currency, induced by monetary policy and “external” events such as the rising trend of oil prices, exerts a strong depressive influence on the economy, there is no point in strengthening this depressive influence by further raising interest rates merely to respect the intermediate target. On the contrary, when the depressive impact of the appreciation is very strong, and when one of the major causal factors lying behind it

appears to be in all probability durable, there would seem to be a good case for lowering the interest rate and accepting a deviation from the money-supply target. The second lesson is that when the depressive influence emanates from the combined action of a currency appreciation and of an excessive rise in money and real wages, there would seem to be a good case for incomes policies and perhaps exchange-market intervention in order to avoid the erosion of the economy's future growth potential.

Monetarists would, of course, strongly object to all these conclusions. They would argue that the overshooting of the M_3 target will destroy the credibility of the Government's commitment to fighting inflation and prepare the ground at the same time for the future re-acceleration of inflation rates. I need not revert to the reasons, presented in Section III, for which I find the first part of the argument unconvincing. As for the second, it should be weighed against the strength of the countervailing influence exerted by the currency appreciation: the boom of consumer spending that could result some time in the future from the current accumulation of liquid balances by households would have to be very strong indeed to offset the powerfully depressive impact of the sharp deterioration of UK industry's competitive position. The balance between these influences will depend not only on the future development of the exchange rate but also on how lasting the overshooting of the M_3 target is: there is clearly a degree of overshooting which could store up trouble for the future. The discussion should run in terms of relative influences, instead of resorting to black and white arguments.

The objection to incomes policies would be made on two grounds. Firstly, because they have so often proved disappointing in not putting more than a temporary brake on the rate of growth of money incomes. While I would not deny that this has been true in some instances, I would very much hesitate to endorse the general proposition that incomes-restraining policies are bound to fail everywhere. For one thing, a temporary slowdown in the growth of money incomes may prove sufficient in some cases. For

another, the dividing line between mandatory limits on increases in wage and other incomes and agreements based on some sort of social consensus is far from being a neat one, and examples of successful policies of the second kind – in Austria, Switzerland, Germany and perhaps during some periods even in Belgium and the Netherlands (which are precisely the countries with the best inflation records) – are, though overshadowed by the spectacle of the British and American failures, worth remembering. Finally, it is worth recalling the obvious fact that whenever the government acts as an employer – and in all countries it does so on a very large scale – it simply cannot escape from its responsibility in the field of incomes policy. In this precise sense all governments engage in incomes policies.

The second objection to incomes policies – that they interfere with the working of market forces – deserves a lengthier, and perhaps less impressionistic, answer, derived from a comparison between the Belgian and British experiences. One striking difference between the two countries has been the very remarkable rate of growth in Belgian labour productivity over quite a number of years and the equally remarkable, in the sense of exceedingly poor, British performance in this respect. Would it not be possible to argue that part of the explanation lies in the fact that a restraining monetary policy and currency appreciation, combined with high nominal and real wages, has had a much longer history in Belgium than in the United Kingdom? Is it not justified to expect that the more recent and much shorter British experience will also lead, in due course, to productivity gains which, combined with a simultaneous, market-induced slowdown in nominal wage increases, will restore the profit margins of the corporate sector?

Some such development may – indeed is likely to – occur. There can be little doubt that high and growing unemployment leads sooner or later to slower wage increases. Productivity is also likely to start rising in a depressed economy, if only as a result of the closing-down of the less efficient plants. High-productivity firms will thus be able to survive. But the problem is that of the time

horizon. It may take a very long time before such a shift in the distribution of income effectively induces increased capital formation and the creation of new enterprises, especially if it is borne in mind that current profitability is far from being the only variable in an investment function. Yet without labour-using investment there can be little hope of reducing unemployment within the foreseeable future. The Belgian experience *is* instructive in this respect: since part of the productivity gains have been secured by the elimination of less productive firms, the capital base needed to create sufficient jobs, even during a cyclical upswing, to ensure anything remotely approaching a "reasonable" rate of unemployment simply does not exist. The point is that when factor price ratios have become fundamentally distorted, restoring them through the market mechanism can work only through very high unemployment, and even then only very slowly. Is this not the major argument for incomes-restraining policies?

Let us now consider exchange-market intervention undertaken in order to put a brake on "excessive" exchange rate appreciation – i.e. on an appreciation so pronounced as seriously to undermine corporate profitability. By definition, no appreciation that occurred in response to a difference in inflation rates or, more precisely, in the rate of growth of unit labour costs, could be "excessive" in this sense. But there have been many instances during recent years of currency appreciation being induced by fast shifts in portfolio preferences. The monetarist argument against resisting such appreciations through exchange-market interventions is that the resulting money creation causes the money-supply target to be overshoot, and therefore creates an inflationary potential for the future. This may indeed be the case when intervention leads to an increase in the money supply held "for spending" or, to put it somewhat differently, when it increases bank liquidity and thus induces domestic banks to extend credits.

Several counter-arguments can be presented in reply to this proposition. The first is that there may be ways of accommodating shifts in international portfolio preferences that will not create a

basis for future inflationary impulses: through off-market transactions, i.e. by putting at the disposal of non-residents tailor-made securities denominated in domestic currency. Secondly, central-bank market interventions may trigger expectations which could slow down speculative demand for the domestic currency. The EMS experience suggests that signs of a firm defence of exchange rate commitments may well have a soothing effect on expectations. Last but not least, the choice may have to be between two evils: an undesirable acceleration in the growth of the domestic money supply and an even sharper deterioration in industry's competitive position. Again, the discussion should run in terms of relative influences.

V.

Anyone surveying the current debate on the efficiency of monetary control techniques is at once struck by its marked, almost exclusive, concentration on the United States and the United Kingdom. International observers ignoring this fact would become victims of an optical illusion in this field: the worldwide diffusion of the Anglo-American financial press and of the academic literature written in the two countries conveys the impression of a universal problem plaguing the whole of the western industrial world. Of course, monetary control problems do exist in continental Europe as well, as is evidenced, for instance, by the doubts voiced in France about the appropriateness of direct credit controls, the recent adoption by the Swiss National Bank of monetary base targeting and the concern expressed in Germany about the disturbing influence of the Euro-DM market on the conduct of monetary policy. But none of these discussions are characterised by the intellectual agitation or the political passion that seem to dominate the public debate on the efficiency of monetary control techniques in the United States and the United Kingdom. There is little talk in continental Europe about "disintermediation", and there are simply

no market reactions to the publication of money-supply figures. The profession of "Fed-watcher" has not yet spread to the other side of the Atlantic. Continental central bankers are often accused of excessive conservatism, but rarely of incompetence.

Why this contrast? Let me begin by rejecting some explanations which I regard as plainly mistaken. The reasons for the contrast should not be sought in any possible differences with respect to the stance of monetary policy or the practice of monetary targeting. Some continental countries have followed more, others less, conservative monetary policies than either the United States or the United Kingdom; and, correspondingly (or perhaps just concomitantly), inflation records have been better or worse than in those two countries. The same diversity can be observed as regards targeting. West Germany and Switzerland have a longer and, on the whole, more successful history of money-supply targeting behind them than either the United States or the United Kingdom. At the same time some other European countries have either been reluctant to embark on this route (Belgium, Sweden) or have used aggregate targets in a different way or, alternatively, combined with other policy techniques (the Netherlands, France, Italy). It would also seem mistaken to suppose that the continental Europeans' lack of interest in control problems is attributable to the inferior development of monetary analysis. A view of this kind would overlook such obvious facts as the significant contribution to monetary analysis made by the Dutch, the originality of some more recent Italian research into money and finance, and the German tradition of analysing institutional developments, to say nothing of the strong analytical content of the annual reports or other publications of quite a number of continental central banks, such as those of Belgium, France, Italy, the Netherlands and West Germany.

A more plausible line of explanation would be one that pointed out, first, that it is in the United Kingdom and even more so in the United States that monetary targeting has become an exercise in which the authorities are expected to hit targets on a short-term basis. It would then underline the rôle played by non-interest-

bearing reserve requirements in the United States, and, in the past, by the “corset” in the United Kingdom. The third, perhaps most important, fact is that both in the United States and in the United Kingdom monetary policy has to be conducted in a complex, competitive, innovative and therefore highly fluid institutional environment. It is in these two countries that the substitutability of financial assets and liabilities has reached the highest degree. These special problems will be highlighted, it is to be hoped, by the analysis that follows.

As a starting-point, let us begin by discussing the strict monetarist view on control techniques, namely that the authorities should steer the growth of the money supply by controlling the monetary base or high-powered money – which, for the purpose of this very general discussion, will be defined as the central bank’s monetary liabilities in domestic currency to the banking system and to non-banks, or, in other words, as bank reserves and cash held by the public.

The analytical framework that can conveniently be used for understanding the implications of this view is a demand-and-supply analysis of money. In this simplified, text-book analysis, the demand for money will be negatively related to the prevailing interest rate, assuming a given level of real income and given interest rate expectations. The supply schedule, on the other hand, will be a positive function of the interest rate at any given amount of monetary base. An increase in the monetary base would therefore, through the traditional multiplier mechanism, shift the supply function to the right, the only peculiarity of this presentation being that the supply function is supposed to have some interest elasticity, since both the banks’ reserves and the public’s cash holdings are assumed to be interest-elastic. The demand and supply functions simultaneously determine the interest rate and the actual money stock – always assuming a given monetary base, a given real income and given interest rate expectations.

Taking this text-book presentation as a framework, it can be seen that the use of the monetarist control technique raises two distinct,

if closely interconnected, sets of problems. The first derives from the lack of stability of the supply-of-money function, and the second from the volatility of the demand-for-money function.

In discussing the first of these problems let us assume that there are no “autonomous” innovations taking place in the financial system – i.e. innovations *other* than those induced by the operation of the control technique itself. The implication of this assumption is that the authorities will be able to define the money supply as a specified list of liabilities issued by a specified list of financial intermediaries. By regulating their own issue of base money, they can then aim at a target defined in terms of this money supply. They can hope to meet it either (a) by setting compulsory reserve requirements for each of the individual liability items which together make up the total money supply, or (b) by assuming that the system of financial intermediaries as a whole will have a demand function for high-powered money that will be stable, or predictable in its shifts – in other words that the money-supply function itself will likewise be stable, or predictable in its shifts. In both cases one could then speak of a stable (or predictable) multiplier relationship between high-powered money and the intermediaries’ liabilities entering into the money supply.

However, both alternatives are bound to create problems. Technique (a) is likely to induce innovations aimed simply and solely at the creation of liabilities – within existing institutions or by setting up new ones – that carry no reserve requirements. The incentive for introducing such innovations will be strongest when the reserves held with the central bank do not carry a suitable interest rate, and it will also increase commensurately with the general level of interest rates, i.e. the higher the inflation rate the stronger the incentive to innovate will be. But even interest-bearing reserve requirements will be perceived by the financial intermediaries as a constraint to be avoided as far as possible. The effect of such innovations can be visualised as an unpredictable shift of the supply curve, i.e. a break in the functional relationship between the monetary base and the money supply as initially defined by the authori-

ties. The outcome with respect to interest rates is uncertain, but there can be no doubt that the actual size of the "real" money stock will be larger than the observed one, since the system will "save" reserves. The result will be a state of confusion.

But what about technique (b)? The key question here is the same, i.e. whether it can be assumed that the demand-for-reserves function (by the intermediaries) or, to put it the other way round, the supply-of-money function is going to be stable and measurable, or its shifts predictable. In a world which is very far indeed from a state of stable equilibrium, either of these assumptions would seem implausible. The amount of non-compulsory reserves that financial intermediaries will wish to hold will depend on their perception of the risks involved in their business. How can anyone believe that this perception is going to be stable in a world of changing inflation rates, shifting policy attitudes, alterations in countries' national political balance and an international environment subject to unpredictable political shocks? The nature and the size of the risks confronting individual intermediaries are bound to change, and so will their perception of these risks.

It may be added that the difficulty of identifying the money-supply function will be enhanced by the existence of a discount window, i.e. by the central bank playing its rôle as lender of last resort. Monetarists would, of course, acknowledge that leaving the discount window open as a matter of routine will in fact make it difficult to establish any predictable relationship between the reserve base and the money supply. They therefore suggest that it should be closed, except in rare cases of extreme, individual, emergency. My own view on this is that, setting aside the not unimportant argument that central banks have in most countries been created with the specific purpose of serving as lenders of last resort, the monetarist proposal would only add to the climate of uncertainty which surrounds decision-making in today's world. It would, therefore, create an unpredictable additional demand for non-compulsory reserves, thus in fact aggravating the confusion surrounding the supply-of-money function.

All these problems are naturally compounded if the assumption of autonomous financial innovations is introduced. Here again the question hinges on the predictability and possibly the slowness of the process of innovation. It is very difficult to speculate about the pace of innovations and whether anything testable can be said on this subject. It would, however, seem safe to assume that under the combined impact of increased competition among financial intermediaries, rapidly changing technology and the spread of new management techniques the process has become substantially speedier than only a few years ago. The result of this is twofold. On the one hand, the stability of the money-supply function will have to be questioned even more fundamentally since the process of innovation is likely to lead to substantial but unpredictable reserve savings. On the other hand, the whole concept of the money-supply function will become untidy because it will be increasingly difficult to count on a stable list of liabilities issued by a stable list of intermediaries as being the components of the money supply. Thus, redefinitions of the monetary aggregates may become more frequent and new choices may have to be made with respect to the target variable itself.

That is not the end of the story, however. It needs to be recalled that the actual money-stock figure is determined by the interaction of the supply-of-money and the demand-for-money functions. Thus, even if we assumed that the first of these functions were known to the monetary authorities – an assumption which, on the basis of what has been said above, I should hesitate to make – both the interest rate and the actual money stock could become unpredictable if the demand-for-money function turned out to be volatile. Probably the money-stock figure to a somewhat lesser extent than the interest rate, since it appears plausible to assume that the money-supply function is not highly interest-elastic. A counterpart to this conclusion is, of course, that unexpected fluctuations in the demand function will lead to interest rate volatility.

Such volatility may even become endogenous to a system in which the authorities try to control the money supply through

manipulation of the monetary base and are actually successful in so doing. This may happen through two channels. First, when the interest rate changes sharply and quickly affect the real economy, so that the demand-for-money function consequently undergoes shifts through income effects. Second, when expectations of interest rate changes influence the demand for money. As a result of the increasingly active asset and liability management of financial intermediaries – and even of large industrial corporations – this may, indeed is likely to, happen. It is arguable that an endogenous volatility of this kind – a dignified version of the text-book pig-cycle – developed in the United States during 1980.

It would seem relatively easy to draw two broadly negative conclusions from this sketchy analysis. One is that in a world of uncertainty and innovations the monetary base approach does not guarantee success in the authorities' endeavour to hit their money-supply target. The other is that even if it did – because the authorities guess the shifts in the supply function correctly and because that supply function is relatively interest-inelastic – the outcome is quite likely to be substantial volatility of interest rates.

It does not, however, follow from these negative conclusions that the alternative technique, viz. the discretionary manipulation of money-market interest rates, will provide a safer route towards controlling the targeted M . It could even be argued that the opposite will be true. Indeed, while the authorities could dispense with guessing the slope and the position of the money-supply function, they would need to form a very clear idea about what the demand-for-money function is, since the money stock would then simply become demand-determined. Moreover, the interest rate technique requires discretionary decisions on interest rate changes, and in the case of strong shifts in the demand-for-money function, which are quite likely to occur in periods of changing inflationary expectations, the interest rate changes would have to be sizable in order to ensure that the money-stock target was met. Given that the background information will often be inconclusive, and that decisions on

interest rates are publicly announced and politically sensitive, what are the practical chances of such discretionary decisions being taken by a committee?

The implications of all this can be summed up in four points.

The first is that if the authorities were able to identify the positions of the supply-of-money and the demand-for-money functions there would be no monetarist control problem: the targeted M could be hit either by controlling the monetary base or by setting the money-market rate.

However, and this is the second point, the authorities do not, in fact, live in such an ideal world. In an uncertain world dominated by rapid financial innovations and variable inflation rates it is exceedingly difficult, and probably impossible, to know with any precision what the two functions are, particularly over any short span of time, and there is also the awkward problem of what to call "money" at any given time. As a result of these difficulties there is simply no technical trick of any kind capable of ensuring that a meaningfully defined money-stock target will actually be reached in the short run.

The third point is that the use of different control techniques leads to somewhat different consequences: by definition, the interest rate technique fixes the interest rate, and a miscalculation concerning the demand-for-money function will therefore concentrate all the repercussions on the money stock. On the other hand, the use of the monetary base technique will lead to a mix of unforeseen consequences affecting both M and the interest rate, the mix depending on the relative volatilities and interest elasticities of the two functions. Thus, for instance, if the supply function is stable and relatively interest-inelastic, the volatility of the demand function will entail much sharper fluctuations in the interest rate than departures from the targeted M .

The final point to be noted is that since estimates have in any event to be made about both the shape of and the possible shifts in the functions, the authorities can in no case rely on mechanistic rules. In a world of uncertainty, and hence imperfect information,

they will have to resort to guesses: in other words, they cannot dispense with judgement.

There seem to be several ways out of the difficulties that ensue from these four points. One can be summed up in the following terms: let us, on the basis of past experience, try to judge which is the more stable function and then, after having made up our minds whether we prefer to run the risk of having volatile interest rates or of deviating from the targeted M, let us select one of the two techniques: monetary base control or discretionary interest rate changes. This is the approach that the Federal Reserve seems to have adopted when it switched from the second technique to the first. Another route that could be taken in order to minimise the use of such judgements would be that of direct monetary base targeting. Technically speaking, this would simply do away with the greater part of the narrower control problems, since controlling the size of the central bank's balance sheet should not pose that many *technical* difficulties. But, clearly, such a choice would raise another "black-box"-cum-judgement problem of monumental size: what is the relationship between the price level and not money, but the monetary base? The third route – the one I would favour – would involve retreating from short-term, i.e. month-to-month, or even quarter-to-quarter targeting. Corrective steps would only be taken after lengthy deviations from the targeted trend and, more importantly, only after a full understanding had been reached of the reasons for such deviations. Moreover, the targets themselves would be periodically redefined, to take into account the longer-term "autonomous" trends in financial innovations.

Let us now turn to the control problems as viewed from the standpoint of demand-management economists. What policy instruments should be used by central banks to ensure that monetary policy will effectively restrain spending?

The traditional view – that central banks should aim to raise interest rates sufficiently high to "bite" at the level of capital expenditure and perhaps even consumer spending – is now being questioned on two counts. One of these is inflation and the other is

financial innovations. Both of them are factors that appeared to create problems for monetary control within the monetarist frame of thinking as well. Inflation raises the tricky problem of “real” interest rates, these being precisely those that are supposed to affect spending. The problem stems from the fact that it is the *expected* inflation rate that matters, not the inflation rate experienced in the past. And since inflation rates are variable, and therefore not easy to predict, it is difficult at any one point in time to determine what “real” interest rates are. What is more, since inflation also entails an increasing dispersion of individual prices around the average price index, it has become even more difficult to know what level of interest rates will effectively restrain spending in such key areas as real estate and industrial construction.

The traditional view of the effectiveness of an interest rate policy in curbing inflationary spending does not, however, rest exclusively on the direct impact of interest rates on spending decisions. It is also based on the assumption that banks and other financial intermediaries are apt to be caught in a credit crunch as a result of an increase in interest rates, especially in long-term ones, which is why Robertson complained a long time ago that the authorities acted “too little and too late” on “the long-term interest rate”. A rise in long-term interest rates is supposed to “lock in” the banks’ bond portfolio, and prevent them from increasing their loans at a time when restrictive monetary policies slow down the expansion of their deposit base.

Financial innovations and greater competition have, however, much reduced the likelihood of this happening. On the one hand, there is a growing tendency for long-term fixed-interest claims to be eliminated from the portfolio of financial intermediaries – precisely because of pessimistic inflationary expectations and capital losses experienced in the recent past. There can be no locking-in effect if assets are short-run, or if longer-term assets carry variable, adjustable interest rates. On the other hand, the liberalisation of interest rates has allowed banks to compete freely for funds and thus to avoid credit rationing in a period of tight monetary policy. Finally,

even if some institutions, or entire categories of financial intermediaries, still experience a credit crunch, the system *as a whole* need not necessarily be forced into limiting its lending to final non-financial borrowers as long as increased competition among institutions and a growing substitutability of liabilities and assets create sufficiently smooth transfers of funds from one sector to another. A restrictive monetary policy will lead to rising interest rates, but not to a rationing of funds of the kind experienced in earlier years.

Whether any such rationing at all can be engineered by the central bank in a highly competitive system functioning entirely on the basis of adjustable interest rates is very much an open question. No wonder that some major central banks – most notably the Deutsche Bundesbank – profess an undisguised distaste for adjustable interest rates, even if their aversion manifests itself in an “ideological” objection to all forms of indexation. The conclusion seems to be that when inflationary expectations are so strong as to make borrowing decisions unresponsive to interest rates, central banks operating in a highly innovative and highly competitive financial environment may well find themselves in a situation in which the only alternative left open to them is that of administrative credit controls – even if only for a sufficient length of time to administer an appropriate shock to the market.

Monetary control problems have so far been discussed on the assumption of a closed economy, or on that of an open economy operating in a régime of freely floating exchange rates. Any such problems are likely to increase, rather than diminish, in a country in which the monetary authorities intervene in the exchange market. There are obvious difficulties in controlling the money supply or in maintaining a tight-money policy whenever the authorities have to purchase foreign currency. Reference to this was already made, in connection with the British experience, at the end of Section IV. But there are, perhaps less obviously, also control problems for a country losing foreign exchange reserves. Within a monetarist frame of thinking the relevant target in this case becomes domestic credit expansion instead of the money

supply – and such a switch at once raises a host of new problems, both theoretical and technical. What is the functional relationship between high-powered money and not the money supply, but lending? How can the central bank influence credit flows? What is the specified list of claims held by what specified list of financial intermediaries that should enter into the targeted aggregate of domestic credit expansion? And how will this aggregate relate to the money supply – it being understood that there may be quite a few longer-term liability items issued by the lending institutions? It would seem highly unlikely that the answers to these questions could become sufficiently clear-cut as to enable the authorities to use mechanistic control techniques.

VI.

Within the scope of this essay it would be impossible to deal systematically with the international implications of anti-inflationary monetary policies. Two brief observations are, however, worth making.

The first is just a reminder of the obvious: that the fastest and perhaps the most powerful transmission mechanism through which monetary policy can succeed in combating inflation is by its contribution to currency appreciation. Restrictive monetary policy may achieve such an appreciation in two ways: by curbing real activity through a reduction of the domestic money stock relative to domestic demand; and by driving up interest rates in the national currency in relation to international interest rates. A change in interest rate differentials will not, of course, necessarily produce a movement in spot exchange rates, since expectations may exert an offsetting influence. However, when expectations are neutral, interest rate differentials *do* have an impact on exchange rates; moreover, by alerting the market to the authorities' policy stance, interest rate changes can themselves affect expectations. The main point is that

it is *nominal* interest rates, not real ones, that matter in this context.

An appreciating exchange rate, other things being equal, will depress domestic prices in two ways: directly, by lowering the prices of internationally traded goods; and indirectly, by accentuating the slack that was already being created by restrictive monetary policy. Of these two influences, the first is the more “original” contribution to the fight against inflation, for it creates a certain downward flexibility in prices which would otherwise be a highly unlikely phenomenon.

All this is a well known story which need not be developed in any great detail. It is to a large extent through this channel that restrictive monetary policy in Germany, Switzerland, the Benelux countries and Austria has so successfully slowed down the rate of inflation. The trouble with this anti-inflationary route is that, by definition, it cannot be open to all countries at the same time.

The second observation also concerns the exchange rate, but from a different angle. If, rightly or wrongly, exchange rate stability is looked upon as a policy objective, there are two things that follow. The first, plainly obvious, is that the possibility of using exchange rate appreciation as an element in the transmission mechanism of anti-inflationary monetary policy will thereby be excluded. The other, less tautological, consequence concerns the use of monetary control techniques, and perhaps even of monetary targets as such – or, at least, the *modus operandi* of targeting.

If the authorities choose to steer the growth of the money supply by having recourse to the extreme form of monetary base control, then they will, by definition, drop the interest rate as an operational target. Interest rates will just “happen”, and the co-ordination of interest rate policies as a means of stabilising exchange rates will therefore be completely out of the question. This is clear enough: non-existing policies cannot be co-ordinated.

What is somewhat less clear is whether monetary targeting itself (and not only the use of one particular operating technique) is compatible with exchange rate stability. For a strict “international”

monetarist, this question would sound plainly silly, for within his analytical framework it would be precisely the co-ordination of monetary targets that would provide the only means of achieving exchange rate stability. But what if, for some of the reasons developed in the earlier part of this essay, the monetarist frame of thinking is not accepted? The conclusion would then be that however careful the “co-ordinated” (or “harmonised”) selection of national monetary targets might be, the chances are that neither prices nor interest rates will develop in such a way as automatically to ensure exchange rate stability. As was pointed out in the previous section, both the supply-of-money and the demand-for-money functions are apt to shift unpredictably in individual countries; international comparisons and forecasts may well compound the national mistakes made in identifying the positions of these functions. In addition, it would seem unlikely that the transmission mechanism, i.e. the impact of a monetary target on price developments, will be similar, or will change similarly, in all countries. Finally, “external shocks”, such as oil price increases, terms-of-trade developments, local wars or trade embargos, will affect individual countries quite differently, both through their influence on current accounts and through that on portfolio preferences. As a result, despite “co-ordinated” monetary targeting inflation rates may move in unexpected directions, current accounts may run into unforeseeable imbalances and disequilibrating exchange rate expectations may develop – circumstances in which it will be impossible for the authorities, if they want to pursue exchange rate stability, to forget about interest rate levels and differentials or exchange-market intervention.

This, of course, is *not* a case against attempting to co-ordinate monetary targets internationally. It is a case against doing so dogmatically on a short-term basis without due regard to unforeseen developments, forgetting about changes in relative interest rate levels or renouncing in advance the use of exchange-market intervention.

Conclusions

It is the object of this concluding section to draw together the threads of the argument running through the whole of the essay by explicitly reverting to the rules versus discretion issue raised in the first paragraph. The main point I have been trying to make is, negatively, that it is neither desirable, nor in many instances feasible, dogmatically to follow predetermined rules – or, to put it positively, that while it may be advisable to conduct an anti-inflationary monetary policy according to rules, such rules need to be complemented by other policy guidelines *and* should be applied with discretionary flexibility. The first of these qualifications has been stated explicitly at the end of both Sections III and IV. The second, repeatedly referred to in various parts of this essay, deserves to be spelled out in these last pages in some detail.

Some introductory remarks are called for on the area covered by rules. To begin with, rules, as applied to anti-inflationary monetary policy, should not be regarded exclusively as the monetarist policy rule, i.e. the setting of a money-supply target in a régime of freely floating exchange rates. There may be another, in a sense equally binding, monetary policy rule, viz. that of tying a country's currency to that of a larger and less inflationary country. This "intermediate" target of exchange rate stability may indeed constrain the use of monetary policy for other purposes as much as does the strict pursuit of a money-supply target. An entirely different point is that whatever the intermediate target may be, the operational targets themselves may also be set according to rules, as opposed to there being pragmatic manipulation of the control mechanism. The authorities may seek to attain the money-supply target by adhering to the monetary base or the interest rate rule – or else they may make a pragmatic mix of the two. Equally, they may try to secure exchange rate stability by setting an operational target for domestic credit expansion or by keeping interest rates as high as necessary, or else by playing on both variables. Discretion may thus creep into the conduct of monetary policy at the level of the

setting and meeting of both the intermediate and the operational targets.

There seem to be three broad arguments commonly advanced in favour of letting rules prevail over discretion.

The first argument is that setting rules and sticking to them will provide the best basis for establishing credibility, and that without credibility monetary policy will neither quickly nor decisively defuse inflationary expectations. A complementary point often made is that any rule should be relatively simple and understandable to the public, and that adherence to it should be easy to verify. If it were fully accepted, this argument would be very demanding indeed, since it would seem to entail fairly rigid observance of the selected rule. For how is credibility to be secured other than by consistent adherence to the rule?

The question, then, is whether this argument is entirely convincing. For reasons that have been developed in Section III and that therefore need not be repeated here, it does not appear to be so when the rule takes the form of a money-supply target. Additional doubt may derive from the analysis of the control problems presented in Section V. If it is accepted that in a world dominated by uncertainty, inflation and financial innovations, the short-term – i.e. quarter-to-quarter or even month-to-month – observance of money-supply targets is simply not feasible, then it could be counter-productive to assume such commitments. There is no better way of undermining the public's confidence in a policy stance than to make promises concerning the "intermediate" or even the operational targets that cannot be kept.

But what about the credibility argument when applied to the exchange rate rule? It would be tempting to argue that in this case it is more convincing. For one thing, citizens of countries with widely open economies have had direct, repeated experience of the price-raising effect of depreciation and devaluation; they will therefore know that exchange rate stability will provide some shelter from inflation. For another, the *technical* feasibility of securing short-term exchange rate stability through an appropriately restrictive

monetary policy has repeatedly been demonstrated. Nevertheless, even here a few reservations are in order. The first is that a commitment to absolute exchange rate fixity in today's world seems neither desirable nor credible: it is clear that situations may arise in which a devaluation will become unavoidable. Secondly, it is worth recalling that there is no major economy in the world today with a zero inflation rate, and that the exchange rate rule will therefore not suffice fully to eradicate inflation. The third reservation relates to a situation in which the exchange rate of the less inflationary major economy starts declining against third-country currencies, and does so not because of any deterioration in its relative inflation performance, but owing to some other causes, such as an earlier overshooting, a shift in international portfolio preferences induced by political events, or the emergence of large interest rate differentials. Such a development, which has been exemplified by that of the Deutsche Mark in relation to the US dollar, the Japanese yen and the pound sterling between the summer of 1980 and February 1981, tends also to lead to a depreciation of the effective exchange rate of any country which has decided to tie its currency to that of the major economy in question. Clearly, some additional policy measures will be required to avoid the price-raising effect of such a depreciation. Because of experiences of this kind, the public may nurture some doubts about the exchange rate rule's ability to curb inflation.

The conclusion regarding the credibility argument should be a qualified one. The acceptance of an appropriate money-supply target or a commitment regarding exchange rate stability is likely to have a soothing effect on inflationary expectations, and may well perform the functions of a sort of indirect incomes policy. However, credibility being the most difficult thing to establish but the easiest to lose, the public should not be misled by being told (a) that adhering to one of these two rules will by itself re-establish price stability, and (b) that the targets can and will be met on a short-term basis come what may. In other words, credibility will be better served by a looser but realistic commitment than by a strict one which stands little chance of being respected.

A second, “political”, argument runs along the following lines. Monetary authorities, even (one could perhaps say especially) when they enjoy a great deal of constitutional or *de facto* independence from governments, will come under considerable pressure from all social groups that actually benefit from inflation, as well as from those who are the first to be hit by an anti-inflationary policy, to ease their policy stance. Depending on the country concerned, these influences may, or may not, work through governments or elected bodies; their size and strength will also vary with circumstances. But it is clear that there may be situations in which they could exert enough pressure on the policy-making bodies to thwart the implementation of an actively anti-inflationary policy. To prevent this from happening, the pursuit of a publicly announced money-supply or exchange rate target may be of great help. This will be so especially when the setting of such targets rests on a broad social consensus which the above-mentioned pressure groups would be unwilling or unable to call into question directly.

Let us now turn to the third argument in favour of rules, which in fact is an apparently strong case *against* discretion. Put in its simplest form (for which I beg the indulgence of my learned friends who are in the process of writing an ever-expanding library on this subject) the argument states that unless the authorities possess perfect information on how the economy works, there is no reason why they should be able to make correct discretionary decisions – even (or rather especially) in an environment dominated by uncertainty and “external” or unpredictable shocks. On the contrary, the chances are that they will bungle things. This argument was originally developed against such specific discretionary decisions as *ad hoc* exchange-market intervention or an anticyclical demand-management policy, but it has now been extended to cover the whole field of “judgemental” policy-making.

It seems to me that practitioners should present two counter-arguments to this proposition. The first is that there is a world of difference between assuming that the authorities are perfectly well

informed and assuming that, on balance, they are more often than not *misinformed*. What if, on the whole, they are *relatively* well informed? But I do not want to take this counter-argument too far, for the second seems to me far more important. It is that, carried to its logical extreme, the “poor information” proposition destroys not only the case for discretionary policy measures based on *ad hoc* judgements, but the case for *any* policy measures whatsoever for the simple reason that the definition of policy rules and their practical implementation will always require judgement. I would even argue that abiding by a rule as dogmatic as the monetarist rule would require, in a very fundamental sense, *more*, rather than less, judgement. For the monetarist rule is based on a series of extremely precise assumptions (as outlined in Section I), the acceptance of which supposes that if not governments, at least monetarist economists, possess perfect information on how the economy works. How could governments actually swallow – or reject – such a proposition without exercising judgement? Moreover, the actual implementation of the monetarist rule will require, in a number of instances, “judgemental” decision-making: what aggregate is to be selected as a money-supply target? When should a new one be chosen? What should the aggregate’s growth rate be? Over what time-span should this growth rate be reached? What is the supposed functional relationship between the targeted M and the operational target? If experience shows a change in this relationship – i.e. if the intermediate target is not reached – after what interval, and on the basis of what assumptions, should the operational target be adjusted? And so forth.

The only logical conclusion to be drawn from the “poor information” argument would be to condemn all government interference in economic matters (perhaps even all government), which in the case of money would imply doing away with monetary policy, i.e. handing over the creation of money to market forces. But I cannot help feeling that there is something dubious about a logic which leads to this proposition for countries whose population, rightly or wrongly, expects their elected governments to perform certain func-

tions. Or perhaps logic has nothing to do with this, the choice being a function of everybody's visceral political philosophy. Mine would certainly not approve of going to this extreme.

The proposition which underpins this essay is to dismiss as unhelpful and unpractical any *a priori* dogmatic discussion of the rules versus discretion issue. Both the credibility and the "political" arguments suggest that monetary policy rules of one of the two kinds mentioned above will perform a useful function in the fight against inflation. But the fact that we live in an untidy world which does not lend itself to any easy schematisation also suggests that the rules should be defined, interpreted and implemented with flexibility.

