THE MONEY SUPPLY AND THE EXCHANGE RATE

Edited by W.A. Eltis and P.J.N. Sinclair

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THE FUNDAMENTAL PROBLEM

By W. A. ELTIS

I

IN MARCH 1980 the Editors of Oxford Economic Papers sent the following note to the contributors to the present Symposium.

The money supply and the exchange rate

It has become conventional wisdom in a number of countries that the rate of growth of the money supply must be controlled. The authorities state money supply targets which broadly correspond to the inflation rate plus the rate of growth of productivity which they are aiming for, and steps are then taken to achieve those targets through policies to control the level of government borrowing and, if necessary, high interest rates. It is hoped that the target inflation rate will be achieved after a time lag of between one and three years. A planned reduction in the rate of growth of the money supply rather than an immediate slow rate is one obvious variant of these new policies. They started to be implemented in Britain in 1976 as a result of the experience of the loose monetary policies of 1972–4. It is widely believed that the extra rapid increase of the money supply in that period was a factor in Britain's exceptional rate of inflation (among developed countries) in 1973–6. Britain is not, of course, the only country that has adopted policies to implement money supply targets, and this approach to the control of inflation has taken hold in several countries and may do so in more if it appears successful.

An older element in the British conventional wisdom is the effect of the exchange rate on profitability and employment. Keynes criticised Churchill's decision to return to the gold standard at the pre-war parity in 1925 which involved a 10 per cent revaluation of sterling.[1] In 1925–9 Britain had around 10 per cent unemployment when other developed economies were far closer to full employment. There was no 1920s boom in Britain, and the attempts of trade unions to resist the money wage cuts needed to restore British wage costs to their former international value led to the General Strike of 1926. Despite the failure of the General Strike, and a higher ratio of earnings of those at work to social security benefits than is the case today, money wages failed to fall significantly, and some believe that British wage costs only adjusted to internationally competitive levels after the fall of sterling in the 1930s. These events seemed to confirm Keynes's analysis, and to suggest that the exchange rate rather than money wage adjustment is the appropriate tool to maintain international competitiveness. This is still widely believed in Britain today, and in certain other countries.

[1] J. M. Keynes, *The Economic Consequences of Mr Churchill*, 1925. Reprinted in *The Collected Writings of John Maynard Keynes, IX. Essays in Persuasion*, pp. 207–30.

It might be naively supposed by some that it is possible to go along with monetary targets and to believe at the same time that a competitive exchange rate should always be maintained. There are, let us suppose, two objectives, a moderate rate of inflation and a high employment-balance of payments equilibrium. The money supply could then be used to control the rate of inflation after the appropriate time lags and the exchange rate to produce the desired high employment-balance of payments equilibrium. If balance of payments equilibrium is achieved at higher employment the lower the exchange rate in relation to domestic costs, there will always be a particular exchange rate at each level of domestic costs at which a high employment-balance of payments equilibrium is achievable.

A difficulty with this naive approach is the monetary theory of the balance of payments. It is believed by international monetarists that money will flow into a country where the money supply rises more slowly than the national product, and out of a country where the money supply grows faster than the national product. A country which seeks to reduce its rate of inflation by raising its money supply more slowly than its national product will therefore experience monetary inflows, and these will have a tendency to raise the exchange rate. A country with tight monetary policies can therefore expect to experience rising exchange rates. Conversely, a country with loose monetary policies can expect to have a falling exchange rate.

If this is accepted, a country which, like Britain, decides to increase its money supply more slowly than its national product can expect to move towards an overvalued exchange rate as a necessary consequence of its decision to adopt tight monetary policies. If alternatively it decided to give priority to lowering its exchange rate, it might need accompanying fiscal and interest rate policies which would involve a loosening of money supply constraints. So it appears that a country in this position may get either its exchange rate or its money supply wrong. It may therefore need to choose between the dangers of an overvalued exchange rate, or a rate of growth in the money supply faster than the rate appropriate to its inflation targets.

The difficulty would disappear if domestic wage costs per unit of output could adjust to internationally competitive levels despite the maintenance of a high exchange rate. There are several ways in which this could occur, and two in particular. First, if productivity is far lower than in other comparable countries, wage costs per unit could fall if productivity rose substantially, and international competition might force productivity upwards. Second, the high unemployment accompanying an overvalued exchange rate could so moderate the rate of increase of money wages that these would gradually come into line with what is required for international competitiveness. The difficulties with these possibilities are that productivity does not ordinarily rise rapidly while output stagnates. The Verdoorn relationships which see productivity rising with output have been quite commonly observed. As for the possibility of money wage adjustments, if high unemployment can produce these on a sufficient scale, why did it fail to do so in the 1920s?

There is certainly published evidence that in recent years wages have adjusted upwards to cancel out some of the hoped-for benefits for competitiveness of devaluations, but is there equal evidence of wages adjusting downwards to correct for the adverse effects on competitiveness of revaluations?

The dilemma policy makers may face between the adoption of the money supply targets they believe to be right to control inflation and the exchange rate policies that favour competitiveness could well be faced by Britain in the early 1980s. The trade weighted exchange rate of sterling rose 12 per cent between March 1979 and March 1980, and money wages rose at an annual rate of 20 per cent over this period. The real revaluation of sterling in this period was therefore far greater than in 1925. With money growth targets of 11 per cent or less while earnings are rising at almost 20 per cent, there should be shortages of money in Britain tending to cause monetary inflows in the early 1980s. The high income predicted from North Sea oil should reinforce the upward pressure on the exchange rate. There are therefore two particular reasons why the non-oil sector of the British economy may be unable to maintain profitability and employment: the effect of monetary stringency may produce an exchange rate that is too high for the non-oil sector to live with, and the favourable balance of trade in oil may produce an exchange rate which necessarily forces the non-oil sector to contract.

A number of questions are raised in this statement which economists will wish to discuss further:

1. How strong is the line of argument which suggests that tight monetary conditions will produce a rising exchange rate?
2. Are there satisfactory technical means by which a competitive exchange rate can be maintained while the authorities are simultaneously pursuing tight monetary policies?
3. Are profitability and employment closely associated with international competitiveness?
4. By what means should any possible tendency of North Sea oil to raise the exchange rate be neutralized, if this tends to reduce the profitability of the rest of the British economy?
5. Were Britain's relatively high unemployment and labour difficulties in the 1920s attributable, as Keynes believed, to the overvaluation of sterling, and were the relatively favourable developments in the later 1930s attributable to the lower exchange rate?
6. What light does the experience of other countries throw on these policy dilemmas?

II

These questions raised issues of fundamental importance for both theory and policy which are relevant to the problems of many countries. They are

of course especially important for Britain. In March 1980 when we sent out our invitations to contribute, the trade weighted exchange rate of sterling had risen 12 per cent in twelve months. At the time of going to the press in February 1981 it has risen a further 5 per cent. In the intervening 11 months British wages in the production of tradables have been rising at an annual rate of about 18 per cent, while those in almost all other industrial economies have been rising more slowly than this. In consequence, the real revaluation of sterling has increased by perhaps a further 10 per cent. The problems which were worrying in March 1979 have therefore become still more acute.

It is a little reassuring that several of those who responded to our invitation outline and make use of a model where the real exchange rate rises over-sharply in a period where the economy is adjusting to a slower rate of growth of the money supply, and falls again once full adjustment is complete. If Britain is under the influence of deflationary monetary policies to which adjustment is still incomplete—and that is rather obviously the case[2]—then according to the analysis of several of these contributions, part of the enormous rise in the real exchange rate of sterling should be reversed in due course.

Most of the present contributors see the problem of the real exchange rate in a far longer time perspective than we did in our note of March 1980. We spoke then of the danger that a country might find that its money supply targets were incompatible with the real exchange rate that it needed for international competitiveness. Several contributors agree that this will immediately be the case, but base their full argument on a model where all will come out as it should in the end. Before they read these very illuminating and helpful articles some readers may find it useful to keep the following very simple theoretical framework in mind as a starting point. Elements of it are to be found in the contributions from the London Business School, Professors Buiter and Miller, Professor Corden, Professor Laidler, Professor Minford and Mr Scott, who do not of course present it in the very simple and perhaps oversimplified form which follows.

Suppose that a country's international current and capital accounts balance at a particular price level and exchange rate when its labour market is also in equilibrium. Suppose that its price and wage costs per unit of output then rise 10 per cent relative to those of other countries, and that its exchange rate falls 10 per cent at the same time. Suppose that while this is occurring there is no fundamental change in its relative level of output, or in the products it produces compared to those of other countries, so that after its prices and wage costs have risen 10 per cent its labour market is still in equilibrium and its current and capital accounts still balance. In that

[2] The British money supply has not been growing slowly according to some measures, but it has been growing slowly according to others, and it has undoubtedly been rising more slowly than money wages. This means that the money supply has almost certainly been growing more slowly than the demand for transactions balances.

situation one would say that its *real* exchange rate was unaltered and that the 10 per cent fall in its *nominal* exchange rate had merely compensated for its 10 per cent of extra inflation.

Monetarists would say that the 10 per cent rise in prices was associated with excess growth in the money supply of about 10 per cent, and that this will have had the effect of causing a 10 per cent depreciation of the nominal exchange rate without affecting the real exchange rate.

Reversing the story, it can be argued that a 10 per cent reduction in the money supply in relation to what it would otherwise have been will produce a situation in the end where prices are 10 per cent lower than they otherwise would have been, where the nominal exchange rate is 10 per cent higher and the real exchange rate is unchanged. It can be argued that changes in the money supply will only affect nominal values like the price level, the nominal exchange rate and the money rate of interest, and cannot in the long term affect the real level of output, real competitiveness, and the real rate of interest.

What occurs immediately after the rate of growth of the money supply is reduced? In the first instance this will tend to reduce money effective demand in relation to money wages, and hence the level of output and employment. The labour market will then be out of equilibrium with fewer jobs available than the number of workers actively seeking employment. At this lower real national income there will be two effects on the *real* exchange rate. First imports will be reduced relative to exports, because these are more sensitive than exports to the level of the real national income. This fall in imports relative to exports will tend to raise the real exchange rate. Second, monetary tightness will tend to raise the real rate of interest. This will in part be a response to a scarcity of money relative to the transactions that need to be financed: it will also be a consequence of the techniques the monetary authorities use to reduce the rate of growth of the money supply. The higher real interest rate will attract capital to the country that is pursuing a policy of monetary deflation, and this will tend to produce a favourable balance of payments capital account, which will also temporarily raise the real exchange rate.

During the period of transition to a new equilibrium where the price level is lower than it otherwise would have been, the country that pursues these policies will find that its real exchange rate is raised both because of the influence of a lower real national income on its current account and because of the influence of higher real interest rates on its capital account.

In due course, it can be argued, the excess of the supply of labour seeking employment over the demand for labour, and the shortage of money, will reduce the rate of increase of wages and prices until the demand for labour is once again in line with the numbers seeking employment. Once employment has risen sufficiently to restore equilibrium in the labour market, the exchange rate will return to its appropriate real long-term level, which will be the real rate from which it set out in the absence of underlying structural

changes. The pound will therefore lose some of its recent gains if this model applies to Britain.

The authors who base their analysis on propositions like those outlined above, and those mentioned subscribe to some of them, also take account of the fact that the exploitation of a new natural resource, North Sea oil in Britain's case, will raise the real exchange rate by increasing the capacity to export and reducing import requirements. They therefore attribute part of the increase in Britain's real exchange rate since 1977 to North Sea oil.

Professor Corden's article includes a full and careful analysis of the influence of this on Britain's exchange rate. He suggests that there are ways of taking advantage of oil which do not involve a large reduction in the profitability of the tradable sector of the economy, for instance by using the revenues from North Sea oil to repay debt.

But North Sea oil will obviously, on balance, raise the exchange rate. There are therefore three reasons for the rise in Britain's real exchange rate. First the influence of North Sea oil, second the influence of a lower real National Income in a period of monetary contraction, and third the influence of a favourable capital account in a period of monetary contraction. The first effect will not be reversed but the second and third will be as soon as wages fall sufficiently to restore the equilibrium in the labour market that is appropriate to the new lower monetary growth rate.

For Professor Minford the period in which unemployment exceeds the natural rate to produce this temporary fluctuation in the real exchange rate is happily brief. In his model there are rational expectations, a labour market where unemployment is voluntary, and strong portfolio balance effects on spending. As a result, while there is a significant period in which real interest rates and the real exchange rate are high, putting pressure on the non-oil tradables sector, unemployment and the national income are only modestly and transitorily disturbed because of the countervailing pressures. Professors Buiter and Miller, in contrast, assume that while the exchange rate responds immediately to current and anticipated future policy changes, domestic costs and prices adjust more slowly, so that unemployment can exceed the natural rate for a time: they see the transition as prolonged and uncomfortable in the extreme. The paper from the London Business School analyses the transition carefully, making a variety of assumptions about expectations etc., and finds it uncomfortable but inescapable. Complete adjustment of domestic wages and prices to a change in monetary policy may require several years. The econometrics of the London Business School suggests that the effect on the exchange rate of a favourable capital account due to high interest rates has been slight, and that the effect of North Sea oil has been very considerable.

Mr Worswick does not find a monetarist framework of analysis helpful. He believes that the period of transition between the equilibria where the labour market is in equilibrium and the real exchange rate is unaffected by monetary policy are so long that irreversible structural deterioration may

occur in the interim. If wages respond only slowly to high unemployment, there will be many years in which the supply of labour exceeds the employment opportunities available, the real exchange rate exceeds the one appropriate to full employment equilibrium, and prices are so low in relation to wages that the real level of output is adversely affected.

In this context Mr Wright's article about the 1920s and the 1930s, when Keynesian thinking evolved, is especially interesting. He argues that the excess unemployment of the 1920s was partly structural, and partly a result of increased unemployment benefits in the 1920s, and that Mr Churchill's revaluation of the exchange rate in 1925 added only slightly to unemployment. By 1929 relative prices had fallen sufficiently to negate the effects of Mr Churchill's 10 per cent revaluation. Mr Dimsdale believes however that a *devaluation* was in fact needed in the 1920s to counteract the structural weaknesses which emerged after the War. He surveys the literature on these issues and on balance agrees with Keynes. He believes that wage flexibility was slight after 1923, and that there would have been substantially less unemployment in the 1920s if the exchange rate had been lower, which is also Mr Worswick's view. Mr Dimsdale believes that the relative prosperity of the 1930s was partly due to tariffs and the depreciation of sterling, and also to the far lower interest rates which became feasible once the exchange rate no longer needed to be defended. Balanced budgets throughout most of the 1930s meant that there was no upward pressure on interest rates from government borrowing which made a 2 per cent bank rate possible.

Mr Hay and Dr Morris examine the association between the real exchange rate and British industrial profitability in the 1960s and the 1970s, and they find that in the very short run a 20 per cent rise in the real exchange rate cuts export profitability by as much as 40 per cent, and profits as a whole by only 2 per cent. There is thus an extremely sharp fall in the relative profitability of exporting, but very little direct influence on aggregate company profits. Company profits as a whole did not react especially favourably to the frequent reductions in the real exchange rate from 1967 to 1976, and it may be that the rise in sterling since then has had an equally neutral effect. Mr Hay and Dr Morris stress however that they have only estimated very short term responses. Different results may occur as the process of adjustment continues. Mr Brech and Professor Stout find that at a higher real exchange rate some British exporters move up market. This may reflect the deaths of low value-added products, or extra births of high value-added products. If the latter effect is significant, a period of deflation with an over-high exchange rate may actually produce some favourable effects on the economy in the period of transition.

It may be that the adjustment the monetarists seek is attainable, and that it will involve less social cost than many now believe, but there must be some significant disadvantages from a large and prolonged fluctuation of the exchange rate. Some of the contributions consider deeply the question of whether there are ways in which adjustment can be achieved more smoothly

and at less social cost. The simple story outlined so far has the real exchange rate rise sharply in the period immediately after the rate of growth of the money supply contracts, and then come down again once adjustment is complete and prices and wages have fallen enough to restore unemployment to the natural rate. Mr Scott believes that there are practicable policies to intervene in the foreign exchange market to reduce the fluctuation of the exchange rate, but that these would not lessen the welfare cost of reducing the rate of inflation, which is the ultimate objective of the policies in question. Professors Buiter and Miller consider the possibility of taxing the interest receipts of foreign sterling holdings to lessen the fluctuation of the exchange rate. They also consider the possibility of a once-for-all increase in the money supply to ease the costs of transition to a new equilibrium where *the rate of growth* of the money supply and therefore the long-term inflation rate is slower.

Professor Artis and Dr Currie consider the advantages of attempting to attain economic objectives by controlling the exchange rate rather than the money supply. This would in effect link a country's inflation rate to that of the country or countries against which its exchange rate is fixed. This can have the advantages of avoiding the extreme fluctuations that may result from pursuing independent and changing money supply targets, while the inflation rate achieved will be no worse provided that other countries are successfully controlling inflation. Professor Artis and Dr Currie argue that better policy results are on balance attainable with alternative targets to simple money supply control. Mr Hacche and Mr Townend of the Bank of England underline the difficulties involved in any policies to intervene to manage the exchange rate of sterling by showing that this did not conform to any simple model of exchange rate behaviour from 1972 to 1980.

In the end one comes back to the question of how prolonged and uncomfortable the monetarist transition to a lower price level and a higher nominal exchange rate is liable to be. If it is as brief as Professor Minford believes, it can readily be borne. If it is long and uncomfortable, then we may indeed be faced with the choice as Mr Worswick sees it between intolerable inflation and the unacceptable unemployment which is needed to reduce it in the absence of successful incomes policies. If the cost of the monetarists' transition lies between Professor Minford's optimism and Mr Worswick's pessimism, then those of the present articles which are concerned with the technical problems of minimising the economic costs involved make especially valuable contributions.

THE MONEY SUPPLY AND THE EXCHANGE RATE

By G. D. N. WORSWICK

Introduction

IT IS little more than a dozen years since devaluation was being urged as a major change in order to remove the brake of the balance of payments constraint on the British economy. The introduction to the Brookings study of the British economy published in 1968 observed that: 'Statistical evidence now firmly supports the view that devaluation should improve the British current account, and indeed that the 14.3 per cent change of 1967 should at least restore equilibrium, even allowing for the adverse effects of higher import prices on the domestic price level.'[1] The strongest consideration in the case for devaluation was the desire to avert the need for recurrent bouts of deflation and unemployment, but some economists went further, arguing that devaluation would set off a virtuous circle whereby higher exports would induce higher investment, thereby raising productivity and lowering costs, which would induce yet further rises in exports.

Two years ago, when the possible accession of Britain to the new European Monetary System, was under active consideration, the British government published a Green Paper[2] which also offered a virtuous circle, only this time it was to be started off by *raising* the exchange rate. A rise in the exchange rate would mean British goods and services becoming dearer to foreigners, but it would make imports cheaper. This should lead to smaller rises in nominal incomes, notably wages, without loss to living standards. The pressure to keep down costs would stimulate cost-saving and thus, efficiency. 'Once a virtuous circle of exchange rate stability, lower costs, greater stimulus to efficiency has been established, the effects of any initial loss of price competitiveness may be removed.'[3]

How has such a dramatic reversal in policy prescription for the exchange rate been possible in such a short time? No-one should under-rate the element of fashion. The reversal may well represent no more than a swing in the pendulum of influence in Whitehall, where Green Papers are written. Whatever the progress of the economy itself, there has been no lack of innovation in economic policy in the post-war period. Mr Blackaby and his colleagues have recently documented the 'great many changes, and indeed frequent reversals, in policy'.[4] If pulling the string will not move it, try pushing the string for a change!

Nevertheless, it is possible to enumerate more substantial explanations than a mere change of fashion. First of all there is the change in attitudes

[1] *Britain's Economic Prospects*, George Allen and Unwin, 1968, p. 11.
[2] Cmnd 7405, November 1978.
[3] Ibid. para. 39.
[4] *British Economic Policy* 1960–74, Cambridge University Press, 1978, p. 652.

which has been taking place towards the objectives of full employment, growth and price stability. In the sixties and early seventies the dislike of inflation was still subordinate to the desire for growth and more especially full employment. Since then the balance has tilted so that today, in Britain, and in many other countries, the reduction of inflation has become overriding, and government policy explicitly accepts that production may stagnate or fall and unemployment rise for a time until inflation is 'under control'. The primary objective of devaluation was to avert unemployment and to accelerate growth, it being recognised that prices would rise. The primary objective of the Green Paper policy of raising the exchange rate was to slow down the rise in prices, although little was said in that particular place about the costs in terms of output foregone, and it was hoped that in the longer run output might even increase. Although such a change in priorities could suffice to explain the change in attitudes towards policy, there have also been changes in ideas about how the economy works. The devaluation of 1967 was a step-wise move of sterling within the essentially fixed exchange rate system of Bretton Woods. The exchange rate increases of today are in the context of an essentially floating rate regime. Thus even if the framework of theoretical analysis had remained the same, it could be argued quite plausibly that the responses of different economic variables, such as output or prices, to an alteration of the exchange rate would be different in a flexible system than in a system of fixed rates.[5] While the institutions have been changing, the framework of analysis has also been modified in important respects. The monetary approach to the balance of payments is formally distinct from 'monetarism', but it has come to the fore at roughly the same time, and in some hands at least, seems to lead to similar conclusions about the unwisdom of governments attempting to influence real output and employment.

Thus the change in attitude towards the exchange rate in recent years is the outcome of changes on three planes:

1. A change in economics;
2. A change in institutions;
3. A change in priorities.

1. Changes in economics

What later became known as 'demand management' dates from the acceptance in the White Paper on *Employment Policy* of 1944 of the government's responsibility for maintaining a high and stable level of employment. The implication was that, left to itself, a capitalist economy might get stuck with high, and possibly persistent levels of unemployment,

[5] The contrast between fixed and floating rates systems is not one of polar opposites. Had Britain joined EMS, sterling would have been fixed, within a certain band, with respect to other EMS currencies, and would have continued to float jointly with them against other currencies such as the dollar and the yen.

which could be alleviated by appropriate policies. Throughout the post-war years the main weight of regulating aggregate demand and employment rested on fiscal policy, with monetary policy being either accommodating or being more actively managed in relation to the external balance.

It was always recognised that exchange rate changes might be needed to ensure external equilibrium if a policy of full employment was being pursued; this was most clearly seen in the devaluation of 1967 and again when sterling was allowed to float in 1972. After 1960 it was also increasingly accepted that a high employment policy was likely to entail chronic inflation, and if that were thought to be unacceptable some means of influencing nominal incomes directly, through some kind of incomes policy, would have to be added to the armoury of instruments. The modelling of the economy, both inside and outside the Treasury, which was being developed throughout this period reflected this approach. Simulations with the models of the Treasury, the National Institute and the London Business School, reported as late as 1978, showed that in all three an increase of public expenditure or a cut in taxes would generate increases in real output and employment, in different degrees in different models and also according as the exchange rate was fixed or floating. There were, however, greater differences between models in what they said about the effects of devaluation; the Treasury and the National Institute both showed some increases in output and ultimately in the current balance, while the LBS showed little output effect and larger prices and earnings responses.[6]

Central to the monetarism of the early 1970s is the equation $MV = PT$. The resurrection of the equation itself would not have caused a very great stir. The equation is a truism, and any objection would be on the grounds of its undue narrowness as a framework for reasoning about the economy. The impetus to the revival was given by two ultimately empirical claims, namely that the velocity of circulation is stable and there exists a 'natural' rate of unemployment. Governments might, by budgetary policy, push the level of unemployment below the natural rate, but if they did, not only inflation, but accelerating inflation, would be the inevitable consequence. It was also implied that the economy is self-righting and will always find its own way back to the natural rate of unemployment. More recently, the idea of 'rational expectations' has been seized upon by some monetarists to reinforce the argument that demand management must be ineffective.

The earlier monetarists stressed the long and variable lags which existed between changes in the quantity of money and consequential changes in the rate of inflation, and they also acknowledged that reducing inflation by

[6] See *National Institute Economic Review*, Feb. 1978, pp. 52–72. An earlier version of the LBS model gave a somewhat different answer. Their estimate was that the devaluation of 1967 both caused an increase in activity—with unemployment being eventually 500,000 less than would otherwise have been the case—and an improvement in the current balance by 1970 of £470 million. On a comparable basis this last estimate 'was much larger than that of NIESR' made in 1972. (Ball, Burns and Miller, Simulations with the LBS Macroeconomic Model, in *Modelling the Economy*, Heinemann, 1975, p. 207.)

monetary restriction entailed 'transitional' increases in unemployment. Some monetarists went so far as to argue that temporary incomes policies might be justified as a means of averting excessive transitional unemployment. In purely analytical terms, this reduced the gap between monetarists and Keynesians almost to vanishing point.[7] Many of the latter have always accepted that the achievement of full employment by fiscal policy would entail chronic cost-inflation and that the money supply would have to expand to accommodate this. For non-inflationary full employment an incomes policy would be needed. Thus the residual issue between Keynesians and monetarists became one of whether an acceptable level of unemployment once reached, could be maintained without some form of continuing restraint upon money wages, whether imposed by statute or reached by agreement in some form of social contract.

According to one application of the rational expectations argument, the cost-inflation persisted precisely because economic agents, notably trade union leaders, knew that if they secured 'excessive' wage increases there would be consequential monetary accommodation. Once they realised that the authorities would no longer adjust the money supply, they would promptly modify their claims to correspond to the new situation. The response of inflation to changes in monetary targets would thus be quick and relatively painless. This difference in the speed of response in the two versions of monetarism needs to be kept in mind.

The monetary approach to the balance of payments is most simply seen as the extension to more than one country of the quantity theory of money. For a single country it is possible to imagine that the absolute price level is uniquely determined by the quantity of money. But this is no longer possible for two countries if there is trade between them, for the absolute price levels of any goods which can be traded cannot move independently. Consequently the simplest kind of quantity theory will no longer do and a modification is required. This modification does not apply only to the oversimplified models like the quantity theory but to more complex ones as well. Until recent years the modelling of the balance of payments and the exchange rate in nearly all British models was conceived in terms of flows of trade and payments. But besides a flow equilibrium there is also a question of stock equilibrium. People do not only acquire dollars to spend on travel or imports: they also acquire them to purchase financial or real assets in the United States or elsewhere which they wish to hold.

The point can be seen clearly in one of the current paradoxes concerning the relation between the PSBR and the exchange rate. What would be the effect upon the exchange rate and the balance of payments of a cut in taxes?

[7] For Keynesians there is a level of unemployment below which there is inflation, for monetarists a level below which there is accelerating inflation. If the current rate of inflation is already considered too high, the question whether it is also accelerating may not seem all that important. The real issue is whether either of these 'critical' unemployment levels can actually be measured.