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**MACROECONOMIC POLICY AFTER
MONETARISM: A SUMMARY**

David Vines

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A SUMMARY***

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TABLE OF CONTENTS

	Page
Summary	i
Introduction	1
The Golden Era of Keynesian Policies	2
The Monetarist Counter-Revolution	4
A New Framework for Macroeconomic Policy	7
1. A Target for the Growth of Money Incomes	8
2. Measures to Promote Employment	10
3. The Co-ordination of Fiscal and Monetary Policy	12
4. Technical Methods for the Design of Activist Policy	15
Conclusion	16
References	16

SUMMARY

Macroeconomic policy in advanced Western countries is now in a state of profound crisis because policy makers are adrift, without a framework to guide them, in a way which has not been true since the 1930s. The present paper first discusses Keynesianism and monetarism in their turn, in an endeavour to distinguish the enduring lessons which should be learnt from both the systems of thought, and in the belief that there is much to be learnt from the mistakes to which they led. In the main body of the paper I discuss how these lessons can be applied to create a new framework, and I identify its three key elements: a target for the growth of money incomes, measures to promote employment, and the coordination of fiscal and monetary policy. The paper also contains some remarks about the methods which might be used to design policies within this new framework.

Work on this paper was carried out whilst I was a visitor at the Department of Economics, Research School of Social Sciences, Australian National University, during 1985. I am grateful to the hospitality shown to me then, and to discussions which I had with economists in Australia at the time. The ideas which I discuss in this paper are of particular relevance to Australia at present, against the background of the reform of the principles by which wages are fixed in Australia as agreed in the Accord, Mark Three. I discuss the application of the set of ideas for the Australian economy in "Australia: An Economy in Crisis? Trends and Prospects", also forthcoming as a Discussion Paper in this series.

Macroeconomic Policy after Monetarism

David Vines, Adam Smith Professor of Political Economy at the University of Glasgow*

Introduction

Macroeconomic policy in advanced Western countries is now in a state of profound crisis. It is not just that policies have recently become more unsatisfactory, or that we are living through the worst period of unemployment since the 1930s. Both of these things are true. But the problem lies deeper, at the level of ideas. Policy-makers are adrift, without a framework to guide them, in a way which has not been true since the 1930s. Gone is the confidence which characterised policy-making in the Keynesian heyday of the 1950s and 1960s. Gone, too, is the promise which monetarism offered in the 1970s of providing a new framework for policy. It is not enough simply to muddle through, applying commonsense to the making of policy. As Keynes once remarked, commonsense is merely outdated theory: in applying commonsense to economic policy-making we are all 'the slaves to some defunct economist'. What is needed is a new framework for policy. It is not yet fully available. But this article is about how such a framework can be built.

As we shall see, discussion about the framework for policy operates at two distinct levels. At one, higher, level there are discussions about the kind of policy which a government ought to pursue. These discussions concern the overall objectives for policy, and the instruments which the government should have at its disposal in order to achieve these objectives. Discussions at this level touch closely upon politics, upon ethics and upon what the commentators believe to be desirable for the society at large. (Or, more sub-consciously, upon what they believe to be in their own self-interest.) An example of discussion at this level concerns the debate between Keynesians and monetarists, which we shall encounter below. At another, lower, level there are discussions about technical details of the government's chosen kind of policy and how these can be refined and improved upon. For example there are debates about whether instruments for policy should be assigned to particular objectives of policy, and investigations of how the chosen types of policies can be prevented from actually amplifying economic fluctuations! As we proceed, it will become apparent that it is not always easy to disentangle these two different levels of discussion.

This article is organised as follows. The first two sections discuss Keynesianism and monetarism in their turn, in an endeavour to distinguish the enduring lessons which should be learned from both of these systems of thought. In the middle section, I discuss how these lessons can be applied to

* I am grateful to Grant Baird, John Foster, Fred Gruen, James Meade and Tom Wilson for very helpful comments.

create a new framework, and discuss some research which I and a number of colleagues have been engaged upon to this end. The final section brings together some remarks about technical issues. Although these concern the lower level of discourse, they are not without interest.

The Golden Era of Keynesian Policies

Keynesian macroeconomic policies evolved from the analysis in Keynes's *General Theory*, and involved a commitment by many Western governments during and after the Second World War to use policy to pursue high and stable employment. An example is the Full Employment White Paper of the United Kingdom. Similar policy commitments were published for example in Australia and the United States. As well as full employment, governments came to assume responsibility for the objectives of economic growth and for the balance of payments. All of these objectives were to be pursued using the interrelated instruments of financial policy: fiscal policy, interest rate policy, exchange rate policy, and with agreement about the use of the instruments of international commercial policy (tariffs, quotas, import restrictions and licences; etc). The period during which these policies were pursued, roughly from 1945 until 1970, involved the greatest expansion in economic activity that the Western world has ever known. Opinions differ as to how directly responsible Keynesian policies were for their success, but most agree that the Keynesian policies were important, at least indirectly, in creating an environment in which this expansion could take place.

Two technical aspects of the design of these policies quickly became important. Initially it was thought that the policy instruments could be assigned as follows: fiscal policy to full employment, monetary policy (through the setting of a low interest rate) to economic growth, and exchange rate policy and commercial policy to the balance of payments. It was, as it were, the responsibility of domestic Treasuries to ensure high and stable employment, the responsibility of the domestic monetary and financial system to ensure that sufficient resources were devoted to investment, and the responsibility of the IMF and the General Agreement on Tariffs and Trade (GATT) to ensure that international conditions were compatible with balance of payments equilibrium. But numerous observers (Tinbergen, Meade, 1951), (Swan, 1960) and others, pointed out that difficulties could arise if all the interrelationships between objectives and instruments were not considered in the setting of policy, in that the pursuit of one objective could drive another objective off target. An example is the balance of payments difficulties which resulted from the pursuit of full employment in the United Kingdom and which led to a 'stop-go' conduct of fiscal policy: expansion to promote employment followed by emergency contraction to protect the balance of payments. Furthermore, it was recognised that without care policy could actually magnify economic fluctuations. Even, for example, the simple case of

the fiscal expansion embarked upon to deal with unemployment might be carried out with such a lag that it coincided with the economy's in-built recovery, causing thereby an excessive boom and excessive employment growth. Milton Friedman was on to this point very early (Friedman, 1953). It was also made by the ex-control engineer, Bill Phillips (1954, 1957), who was familiar with industrial and electrical applications of control engineering, in which feedback control can be destabilising if not applied with care. The need to design Keynesian policies so as to avoid these two difficulties led to the use of econometric models in policy-making.

The fundamental problem with Keynesian stabilisation policies—much more important than the above two technical difficulties—is that they are unable to deal with the problem of inflation. This is because the commitment to full employment contained within Keynesian policies removes any threat of unemployment resulting from high wage settlements, and it is upon this threat that wage stability in part depends. Keynesian economists recognised this difficulty (Kalecki, 1944) but had no clear remedy. Reliance on centralised incomes policy (compulsory or voluntary) has—in many countries, including Britain—proved unequal to the task. Incomes policies face appalling administrative difficulties. There are the problems of exemptions; the need to attract labour for particular purposes by offering higher pay; and so on. All of us are familiar with these problems. But more fundamentally, incomes policies face a prisoner's dilemma. Given the government's commitment to full employment, it is in the interests of each individual group of wage setters to break the incomes policy themselves whilst relying upon other groups to adhere to it. In the jargon of modern American economics, incomes policies are not 'incentive compatible'.¹

1. The term prisoner's dilemma arises from the description of the following problem. Imagine two prisoners being held separately in solitary confinement each accused of murder. They are offered the following alternatives. First, if they provide evidence which incriminates the other prisoner, but they are not themselves incriminated, they will get off free. Second, if there is no evidence incriminating them, but they refuse to talk and provide no evidence themselves, they will get five years imprisonment for burglary. Third, if there is evidence to convict them of the murder, then they will hang. On deciding his response, the first prisoner faces two alternatives. Either the other prisoner has told upon him, and so it doesn't matter what he says, because he will hang anyway. Or the other prisoner has been altruistic and not told upon him. In this case it is in his interests to tell upon the other prisoner in order to avoid the five years of imprisonment for burglary. Thus the first prisoner can do at least as well by incriminating the other prisoner whatever the other prisoner has done. By a repetition of this argument, the other prisoner can do at least as well by incriminating the first prisoner. Thus each prisoner incriminates the other, and both prisoners hang.

Modern research into game theory suggests that it might be possible to avoid such a difficult outcome by playing the game repeatedly (!) so that in effect prisoners come to learn that it is in their own interest to behave altruistically and come not to renege on altruistic behaviour. But the temptation to renege will always remain strong. The analogy for incomes policy and the repeated games idea is that both may come to realise how much better off they would be if they had stuck to the incomes policy and thus the incomes policy could be sustained. The experience of the Labour government in the late 1970s does not lead one to hope very much from this line of argument.

The Monetarist Counter-Revolution

More conservative economists like Hayek used this fundamental difficulty of Keynesian policies as a basis on which to build an entire monetarist counter-revolution. Friedman set forth this counter-revolution in his Presidential Address to the American Economic Association in 1968. He argued, first, that instead of the pursuit of full employment, macroeconomic policy ought to be devoted to stabilising the growth of money incomes, and second that this policy ought to be carried out by monetary means. His third claim was that these monetary means ought to involve the pursuit of a constant rate of growth of the money supply.

The first of Friedman's proposals was a natural response to the fundamental difficulty of the Keynesian position. By stabilising the growth of money incomes, macroeconomic policy replaces a commitment to full employment with a commitment that inflation will not be passively accommodated. It does, it is true, leave the private sector free to determine the split in money incomes between low prices and high employment or high prices and low employment, but it ensures that inflation, or accelerating inflation, will be met by contractionary policies, thereby creating a threat of potential unemployment which helps to ensure wage stability. It helps partly to solve the prisoner's dilemma problem described above. It does this because the negative externality (high inflation) which one group of wage settlers imposes upon the other is partly now internalised (this first group now faces the present threat of unemployment).

Many who are not monetarists now support this proposal of Friedman's for stabilising the rate of growth of money incomes (Meade, 1982, Tobin, 1980). I count myself amongst these supporters too.

But the optimism engendered by Friedman that inflation can be controlled by stabilising the growth of money incomes, without generating any difficulties of high unemployment—has proved completely unfounded. The 'rational expectations monetarists' who followed him, appear to have been misguided in their belief that wage-setters would understand the implications of the anti-inflation policy and revise their claims downward accordingly. Not only may it take years of high unemployment to reduce inflation, but it also seems that permanently high levels of unemployment are required to keep inflation stable. This is because wages and prices are set, not in the flexible price markets of economics textbooks or of the Chicago wheat market, but by strong unions and by monopolistic firms. As a result, inflationary pressures have a momentum of their own, which, without other measures, may require a high degree of market slack to discipline.² Thus Meade, for example, argues

2. Those in the Marxist tradition will not be surprised by this 'discovery' of the 1980s. Thus Thomas Balogh (1982) writes: 'Monetarism is the incomes policy of Karl Marx. By deliberately setting out to base the viability of the capitalism system on the maintenance of a large "industrial reserve army", monetarists validate Marx's analysis' (pp 177–8).

that the stabilisation of money incomes has to be combined with a large number of measures—profit sharing, arbitration of pay settlements, a wage inflation tax, employment subsidies—to exert further downward influence on wage costs, so as to ensure a high level of output and a low level of prices consistent with a particular level of money income. We will meet these ideas again.

The second of Friedman's proposals is about the assigning of instruments to objectives. It has, in the judgement of many, been responsible for a second set of difficulties. The control of money income growth by the instrument of a tight monetary policy makes the burden of the control of inflation fall mainly on investment rather than on consumption, since it is primarily investment which is reduced in the face of tight monetary conditions and high interest rates. This makes it very difficult for economies to add to their productive potential as a way of meeting inflationary pressure. Since inflation to a large extent arises because of claims for income in excess of what is available in the society, a way of dealing with it is to invest and modernise industry, to make it capable of producing an amount which will more nearly satisfy the aspirations of the population. But the policy of tight money makes this very difficult. And it stores up problems for later, by sustaining the consumption of the present at the expense of the well-being of the future.³ Furthermore in an open economy high interest rates also cause an excessive appreciation of the exchange rate. This is because, now that international capital markets are very integrated, the effect of tight monetary policy falls first upon the financial markets, and only with a lag causes wages and prices to fall. And tight financial markets induce inflows of capital from abroad which drive up the exchange rate. This led directly to the over-valuation of both sterling and the dollar in the 1980s. And it has seriously affected the international monetary system. John Williamson, of the influential Institute for International Economics in Washington, DC, has described how it has made moves towards international monetary reform very difficult. Furthermore, it has also damaged manufacturing industries in the United Kingdom and the United States which participate in international trade, leading to the phenomenon of deindustrialisation. And in the US it has so damaged much of US industry as to lead to protectionist pressures which, for a time in 1985, threatened to engulf the entire international trading system as well, and destroy the GATT (whose importance in the post-war world has already been mentioned). A better outcome could be achieved if monetary policy were not assigned alone to the control of money income growth, but if instead the instruments of fiscal and monetary policy were used together, in balance, to control money income growth.

3. This is why many people are so worried about the longer run effects of the Thatcher policy in Britain, in particular the use of oil revenue during the early 1980s to sustain the real income of those at work whilst the productive potential of the British economy staggered and fell.

Finally, Friedman's third proposal (a constant rate of growth in the money supply) also appears to be thoroughly misguided. It ignores the practical difficulties of controlling the money supply, which are more difficult in countries like Britain than in the United States. More importantly, it ignores the fluctuations, frequently wild, in the demand for money which would disturb the level of money incomes in an economy with a fixed money supply (Poole, 1970). It is these fluctuations which have given monetarism such a bad name over the past few years in Britain. But most fundamentally, Friedman's third proposal relies too heavily on the supposed ability of the private sector economy to dampen economic fluctuations automatically.

This self-stabilising ability of the private sector is supposed to work as follows. If real expenditures were to fall, so that the growth of money incomes were to fall, wages and prices would fall, so that the growth in the demand for money would fall and interest rates would fall. Lower interest rates would then stimulate expenditures, and this would rekindle the growth of money incomes as required. If *per contra*, real expenditures rose, then the reverse process would be supposed to operate. And hence the growth of money incomes would be kept on track.

Now it is an enduring contribution of Keynesian economics to have shown that the ability of the private sector to stabilise fluctuations in this way is entirely problematic. Chapter 19 of Keynes' *General Theory* was entirely devoted to this. As wages and prices fall, expectations of a further fall may lead to consumers and investors further postponing their expenditures, in the hope of buying goods more cheaply in the future, and expenditures will then fall still further rather than recover.⁴ In this may lie one of the reasons for the failure of Western economies, so far, to respond as expected to the collapse in oil prices in early 1986.

Herein lies an irony. As noted above, Friedman argued that Keynesian policies were likely to magnify economic fluctuations, reinforcing a boom or magnifying a slump when these happened. But if Friedman's proposal for a fixed rate of growth of the money supply were adopted then this might have a similar destabilising effect. It is thus my view that even if Friedman's first two proposals were to be accepted—and I argued against them—then monetary policy would still need to be actively manipulated so as to ensure the dampening of economic fluctuations in the economy. It becomes just as important for monetarists as for anyone else to design stable, active policies.

There is a famous 'proof', due to Sargent and Wallace, that any such active monetary policy would, if it was fully understood, be *entirely* ineffective. But that demonstration rests on the assumption that the private sector's supposed

4. Tobin (1975) in an excellent paper, which is not well known, gives a formal proof of how this can become unstable.

automatic stabilising mechanism for dampening fluctuations is *instantaneous*, which is literally incredible. The idea runs as follows. Suppose that the government announces that when there is unemployment, it will increase the rate of growth of the money supply, in order to lower interest rates and ease monetary conditions so as to stimulate expenditure and reduce unemployment. Suppose too that the private sector knows this rule. Suppose further that any increase in the money supply must eventually lead to inflation. Then when unemployment occurs the government increases the money supply. But agents in the private sector know that this will happen, know that prices and costs will rise, and so know that it would be foolish to increase their output unless they also put up prices. And so everybody puts up prices instantly, prices rise at the same time as the money supply increases, so monetary conditions are not actually eased, so interest rates do not fall, so expenditure is not stimulated, and so the government has not done anything at all to improve the unemployment position—it has simply raised the price level! It is the instantaneous way in which this process is supposed to work which makes it so very peculiar. (See Maddock and Carter, 1982, for a very clear exposition and criticism of this Sargent and Wallace idea.) That anybody could ever have been fooled by this ‘proof’ is bizarre.

And thus we can conclude that there are at least three things wrong with monetarism—things wrong, in fact, with each of Friedman’s three key proposals. First, it is not good enough simply to abandon the pursuit of full employment and instead to merely seek to stabilise the growth of money incomes. Second, stabilising money income growth by monetary means alone should be avoided. Third, doing this by attempting to pursue a constant rate of growth of the money supply appears to be a mistake.

A New Framework for Macroeconomic Policy

What lessons can we learn from Keynesian and monetarist thought as summarised above?

A new policy-making framework would need to draw the lesson from the monetarist counter-revolution that macroeconomic policy cannot give a commitment to full employment independently of inflationary developments. This is what was wrong with Keynesian economics. But it will have to recognise the three difficulties facing monetarism. It will have to recognise that employment-creating measures at the micro-level in the labour market like those proposed by Meade are essential if less expansionary policies are not to cause unemployment. It will have to utilise fiscal and monetary policies together in harmony so that a combination of tight monetary policy and loose fiscal policy does not damage investment and cause an over-appreciation of the exchange rate in the way which we have described. And finally, this macroeconomic policy will have to be an active policy, and it

will need to be carefully designed technically so as to avoid instabilities. We take up each of these four issues in turn.

1. A Target for the Growth of Money Incomes

There needs to be a policy for maintaining a low rate of inflation.

Like Friedman, we must recognise that there is a need for a macroeconomic policy which avoids a commitment to full employment independently of what is happening to inflation. This, as we have already said, is necessary in order to exert a discipline over wage setting, which makes it harder for each group of wage setters to pursue their own wage increases at the expense of others, offering the threat of unemployment if wage increases get out of hand. The threat of future unemployment acts as a 'deterrent' against high wage settlements in the present (and so helps to solve the prisoner's dilemma problem of wage fixing described above). Like all good deterrents this threat is best made public but not used: its effect on actual wage settlements now need not be through *actual* unemployment now.

Such a policy is also important for the foreign exchange market. In that market the exchange rate will depend upon what people think future inflation is going to be, which will in turn depend upon what people think about policy. A policy which is thought to underwrite whatever inflation emerges in the pursuit of full employment will be attacked, and probably defeated, on the foreign exchange markets.

Australian experience is interesting here. For eighteen months after April 1983 the new Labour government was the wonder of the Western world, pursuing an expansionary policy to cure unemployment at the same time as it had an orthodox incomes policy against inflation. One day in February 1985, the foreign exchange markets decided that although the full employment policy was credible, the incomes policy was not. The currency lost 20 per cent of its value in a fortnight. (This happened before the further collapse of the currency by another 20 per cent in 1986, the reasons for which were also to do with the collapse of primary commodity prices.) At the time of the first collapse there was no clear monetary policy, simply 'eclectic commonsense'—so very different from the monetary policy in Britain at the very same time which was clearly committed to preventing inflation and preventing any collapse of sterling which would lead to inflation. The run on the pound in the previous month was spectacularly reversed, in a way which the Australian one never has been.

We have already argued that, since the anti-inflation stance of policy cannot be sustained by an orthodox incomes policy alone, it is desirable to have a target for the rate of growth of money incomes.

Some observers in the UK believe that the policy against inflation could instead take the form of joining the European Monetary System (EMS) by

signifying unequivocally government's commitment to respond quickly and effectively to a deterioration in the exchange rate. But joining the EMS will not control inflation on its own. If we fix the exchange rate this will indeed prevent imported inflation (since EEC inflation is at present expected to fall) but domestic inflation could always drive us off course and *force* a depreciation unless we have some other credible domestic policy towards inflation.

We have already argued that monetary targets are not such a credible domestic anti-inflation policy.⁵ This still leaves us with our anti-inflation policy of controlling the rate of growth of money incomes, the details of which are discussed below.

It is not, however, enough to do what the present UK government appears to do, and to have *only* an anti-inflation policy. There also needs to be *some* policy of maintaining a high level of output (and of moderating slumps). The self-stabilising property of the economy is not strong enough to deal with slumps or with excessive increases in expenditures. The degree of range in price flexibility in a modern economy will not be sufficient for this to be automatic. Policy ought to involve some commitment which would prevent these fluctuations *to some degree*.

There needs to be a trade-off between the outcomes sought for these two objectives of low inflation and high output. Policy cannot involve a commitment to a particular level of output independently of inflation, otherwise the deterrent effect referred to above will be removed. But equally policy cannot simply be directed at inflation irrespective of the level of output, for otherwise slumps may become self-perpetuating. A trade-off would display the relative weights attached to these two policies. A target for money incomes is a particular way of expressing this trade-off. It gives changes in output and changes in prices equal weights in calling forth a policy response.

It might be thought better not to have a money income target but to have a policy which looked separately at what was going on for output, and at what was going on for inflation. An optimum policy might respond to shocks which alter money GDP in rather different ways depending upon whether, say, the shock was a shock to output or a shock to wages. The trouble with that is that it may well lead the policy back to the stating of explicit output targets. All the difficulties of Keynesian policy-making would then re-emerge.

What does this mean in the present context of the UK? It should be announced as a target of policy that money incomes should grow at a steady rate, at a rate somewhat faster than money incomes are growing at present. This would be a reflationary policy, promoting recovery from the present recession. But it would contain within it an automatic commitment that the reflation of output and employment would be reduced by any rise in the rate

5. See the discussion above of Friedman's third proposal.

of price inflation, and vice versa. Policy could thus promote employment growth and recovery from the present appallingly high levels of unemployment, but at the same time anti-inflation policy would remain credible.

The money income target contains an essential simplicity which will be important in retaining the deterrent effect of policy against inflation. It leaves the private sector free to determine the split in money incomes between low prices and high employment or vice versa. But it ensures that inflation, or accelerating inflation, will be met by automatic restraints of output and employment thereby incurring the deterrent effect. It does this in a profoundly simple way by saying that the growth of money incomes and money expenditures and the money value of production will be kept in the economy on a steadily rising path.

Both the labour market and the foreign exchange markets need such a guarantee from financial policy, if any reflation policy is not to become an orgy of price inflation. The ghost of the Medium-Term Financial Strategy must be kept alive in some way. This idea will be, I think, the lasting legacy of Thatcherism in this country. Technically flawed though that strategy has been in its actual form, the existence of some such strategy is needed to give guidance. The design of the 'son of MTFS' is discussed below.

2. Measures to Promote Employment

Within the framework provided by a target for the growth of money income, measures to promote employment are essential if the outcome is not to be high prices and a low level of employment. Four measures can be identified.

(i) We must target any additional government expenditure to groups which are less than fully employed, for example the long-term unemployed.⁶

Research shows such steps would have very little effect on wage pressure, as the long-term unemployed have largely withdrawn from the labour market.

This suggests that any reflation should pay less attention to cuts in taxation and more to targeted increases in expenditure. (ii) We must train the less skilled rapidly for jobs where labour is scarce. This will reduce inflationary pressure coming from this area and at the same time reduce the excess supply of unskilled. (iii) We must encourage investment so that inflationary bottlenecks do not emerge due to a shortage of capital. The problems of monetarism in this regard have already been mentioned, and we return to this issue below. (iv) Finally, and fundamentally, we must have a credible incomes policy, exerting further pressure, *within* the framework of a restrained growth

6. Details of how this could be done are contained in Layard (1986)

of money incomes, in the direction of higher output and lower wages and prices.

At the very minimum, an income policy could involve a centrally announced norm, taking into account the projected target growth of money incomes on the one hand, and the extent to which it was hoped to channel this into output growth on the other (the norm would be computed so that the resulting price inflation would 'leave room' for the desired output growth, within the constraint provided by the target growth of money incomes). Of itself, having a norm might help, by bringing home to individual wage bargainers what was likely to govern the climate of settlements elsewhere. Meade (1982) has also showed how, against the background of the norm, arbitration procedures could be used to promote employment.

But perhaps the most promising proposal for such an incomes policy is the wage inflation tax, first put forward in the US and now strongly advocated by Professor Richard Layard.⁷ This would penalise companies for paying wage increases above a norm, set nationally and consistent with the target for the rate of growth of money incomes. Such a tax would make it more difficult for employers to accede to wage increases. It would be the microeconomic complement to the macroeconomic deterrent of the money income target, and would make workers more aware of the trade-off between higher pay and higher employment (and might further help to resolve the problem of the prisoner's dilemma in wage fixing).⁸ It could not be broken by special groups and could not therefore be discredited. It would also permit free collective bargaining and the decentralised adjustment of relativities. In the last analysis if relativities need to be adjusted or higher rates have to be paid to attract or retain workers, the wage inflation tax does not prevent this happening.

Such a tax could also be made to be unbureaucratic. It could be collected from employers by the Inland Revenue, together with PAYE and National Insurance on a self-assessment basis. The scope for cheating would be minimal and very few extra inspectors would be required.

The problem has always been how to reconcile an inflation tax with the need to encourage productivity bargaining and profit-sharing. Professor Layard has suggested that this can be achieved by simple exemption for genuine cases. This seems workable.⁹ Any wider exemption would sink the incomes strategy. If, for example, *all* payments to workers in the form of

7. See Layard (1986) chapter 10, and also see an article by Gavin Davies, Chief UK Economist at Goldman Sachs in the *Guardian* on 27th August 1986.

8. In technical terms, it would increase the elasticity of the demand curve for labour at the firm level, increasing the extra employment made possible by each unit of restraint in the wage paid to workers.

9. See 'Arrangements to Encourage Profit-sharing and to Contain Inflation', available from Professor Richard Layard at the Centre for Labour Economics, London School of Economics.

profit-shares were exempt then companies could simply fiddle their books and declare that some of what they would have paid to workers in wages is now an extra profit-share.

Could profit-sharing itself be a complete answer, avoiding the need for any other form of incomes policy? Professor Martin Weitzman, of Harvard University, has argued that the answer is yes. Profit-sharing makes it less risky for firms to take on workers, for they know that if times in the future turn out to be bad they will not need to pay less than as if times turn out to be good. But workers who agree to profit-sharing are likely to want a say in the *employment* decision. It will be in their interest to keep new entrants out so as to increase their own profit-share. Given this, non-inflationary employment will not necessarily rise as a result of profit-sharing. It may fall. It would be unwise to rely, as Weitzman does, on any major favourable employment effect from profit-sharing alone unless the proposals were modified and developed on the lines which Meade (1986) has indicated in a pamphlet published by the Centre for Public Policy.

In practical terms, all these measures should be presented as employment-promoting initiatives. 'Presentation' in the popular sense would indeed be important, for a set of policies which might just raise the spectre of 'the economist in Whitehall knows best', and be seen as a positive incentive for negotiators and accountants to exercise extreme degrees of creativity. All of them would be carried out within the framework of the target rate of increase of money incomes. That should be presented as the backstop deterrent against inflation.

3. The Co-ordination of Fiscal and Monetary Policy

A new policy-making framework also requires that the interconnections between fiscal and monetary policies be properly specified. This is clearly necessary, now that faith in simple monetarism has been abandoned. If fiscal policy is no longer to be subordinated to the task of achieving monetary targets, or to the Medium-Term Financial Strategy as we at present know it, then what exactly should be the rules for the conduct of fiscal and monetary policies? How can we ensure that fiscal policy plays its part in the overall macroeconomic policy, so that fiscal and monetary imbalance does not damage investment and cause wild exchange rate oscillations of the kind discussed above? In a book published three years ago (Vines, Maciejowski and Meade, 1983) my co-authors and I proposed the following assignment of responsibilities:

- (a) Fiscal policy should be used primarily to keep the growth of total money incomes along its desired target path. Such a policy would require quite rapid and frequent changes in taxation in response to new developments in the growth of money income. It would require perhaps

quarterly changes in the rate of value added tax, and in payroll taxes, of perhaps as much as 1 or 2 percentage points per quarter. The rule which specified how taxes respond to changes in money income would need to be carefully designed, using the methods discussed in the final section below. Such a rule for taxation would, for example, show how taxes should be increased, to curtail spending, when money incomes were growing too rapidly. This policy would require the rapid collection of information about developments in the growth of money incomes.¹⁰ One would also have to accept that total money incomes in the economy could not be controlled very accurately by the means of this policy. It would perhaps take a number of quarters for disturbances to be removed. But it would be important for control to be sufficiently rapid that confidence in the money income target was not shaken.

(b) Monetary policy (interest rate policy) should be used primarily to stabilise the exchange rate, with the purpose of stabilising the competitiveness of the economy at some desired level, so that it would be the *real* exchange rate which would be stabilised, rather than the *money* exchange rate. The stabilisation could not expect to be complete, because the foreign exchange market is always being buffeted about by changing sentiments: to neutralise completely the effects of this might require very large changes in interest rates (or very large, even if temporary, intervention in foreign exchange market). Membership of the European Monetary System, or of a wider international monetary system, would assist here. For our recommendations to be possible within the EMS, the rates fixed by the EMS would have to be either set in real terms or else planned as being automatically subject to frequent adjustment in the light of divergences of domestic money prices and cost levels.¹¹

(c) Gradually over time the level of competitiveness in the economy ought to be adjusted, through changes in the exchange rate, in turn induced by changes in monetary policy, so as to ensure a satisfactory outcome on the current account of the balance of payments, and more generally so as to ensure that sufficient of the economy's resources were devoted to investment.¹² These changes in competitiveness would have implications

10. Research is at present being undertaken by a PhD student at Cambridge University, Mr Andrew McKay, financed by the Economic and Social Research Council and in conjunction with the Central Statistical Office, into how timely, accurate, and free from revision or seasonal peculiarities such data could be made.

11. The case for membership of the EMS or of a New Bretton Woods is a wide issue, which I do not intend to discuss in detail here. But see the further brief remarks below.

12. A more competitive exchange rate, *ceteris paribus*, would not only improve the current account of the balance of payments, so enabling us to invest abroad, but also (by improving the profitability of domestic industry) encourage investment at home as well. By both of these means a more competitive exchange rate promotes investment.

for the growth of money incomes (a more competitive exchange rate would stimulate money income growth) and it would be important for fiscal policy to be intelligent enough to allow for this interaction of the monetary policy instrument onto a target of policy for which it was not *primarily* responsible. A rigid assignment of instruments to targets, of the kind criticised above, would need to be avoided.¹³

Notice four things about this proposal. First, observe that the rules for the conduct of monetary policy are very different from those described by the Governor of the Bank of England in a recent lecture (Leigh-Pemberton, 1984).¹⁴ Second, it is clear that this use of monetary policy to pursue a competitive exchange rate would not jeopardise the management of money incomes, since this would be pursued primarily by fiscal policy. Dornbusch has been an implacable opponent of such exchange rate targeting for the US,¹⁵ because he believes that exchange rate targeting would jeopardise control over money incomes in the US, where fiscal policy is much less flexible.

Third, observe that this use of monetary policy for an external objective (the competitive exchange rate) would dampen the oscillations in foreign competitiveness, compared with those which occur when monetary policy is assigned to the internal objective of stabilising the growth of money incomes (eg, in the UK from 1979 to the present and in the US from 1982 to 1985). It could lay the ground-work for a re-establishment of an orderly international monetary system, as advocated by Williamson (1983), and ultimately for a New Bretton Woods, as proposed by Meade (1984).

Finally, it is clear that this system of fiscal and monetary policy-making, potentially complex as it is, would need to be designed very carefully. Work which colleagues and I are undertaking at Cambridge goes into this issue in very great detail, using the technical methods to be mentioned in the coming section. A preliminary report on this is contained in a recent discussion paper of the Centre for Economic Policy Research (Christodoulakis, Vines and Weale, 1986).

13. A technical remark. The reader will notice that monetary policy (ie, a nominal variable) is being used to control competitiveness (ie, the real exchange rate, a *real* variable). This is possible only as a result of interactions with the rest of the macroeconomic policy. In particular the successful pursuit of the money income target would ensure that wage indexation would not neutralise the effects of devaluation in the *nominal* exchange rate upon the *real* exchange rate. If wage indexation attempted to do this, it would cause unemployment.

14. In that lecture the Governor gave the impression that it is the responsibility of the Bank to look after all the objectives of policy, seemingly almost without regard for what was done to fiscal policy.

15. See Dornbusch (1980).

4. Technical Methods for the Design of Activist Policy

What technical methods are available for the design of the policies mentioned in the previous sections? The policies are clearly somewhat complex, and they are certainly too complex even to try to apply by the methods of 'common sense', or by the methods of 'flying by the seat of one's pants'.

First, the rigid assignment of instruments to objectives (two unfortunate examples of which were mentioned in the early sections of the paper) will need to give way to the simultaneous use of policy instruments to achieve simultaneously the desired outcome for a number of policy objectives. For example, an unexpected shock in the form of capital outflow will, on the principles outlined above, require a rise in the rate of interest to prevent the exchange rate from collapsing too far and disturbing competitiveness too much. This will cause the growth of money incomes to slacken, and require a sympathetic loosening in taxation to stimulate expenditures somewhat. An intelligent fiscal policy would *anticipate* this requirement. Methods of 'optimal control theory' will be helpful in the use of econometric models to search for policies which would avoid these problems. These methods make use of a policy-maker's objective function, or 'welfare function'. Such a welfare function attaches weights to the various objectives of policy, which are supposed to represent the views of policy-makers, and then shows, conditional on this, how economic welfare would deteriorate as the targets and the instruments of policy deviate from their supposed desired values. The optimal control methods examine the trade-offs between more closely achieving the desired value for one target and less closely achieving the desired values for the instruments and for the other targets.

Second, 'classical control theory' will be important (see Vines, Maciejowski and Meade, 1983, Part 4 for a simple exposition) in allowing us to examine in detail the extent to which the policies are likely to be successful in dampening fluctuations. Control engineers have much of value to offer us here from their experience in feedback systems design, for example the design of automatic pilots for aeroplanes. These methods view the economy as a set of differential or difference equations, and feedback policies are designed to influence the solution of these equations, so that the fluctuations in them die out quickly. For example, it is important that increases in indirect taxes, designed to restrain an over-rapid growth of money incomes, are not so violent as to provoke a rise in wages, and thus in prices, which actually causes a further increase in the growth of money incomes. For that would require further increases in indirect taxes, etc, etc, and the policy would be unstably out of control.¹⁶

16. A technical remark. In continuous time this stability requirement means ensuring that the roots of the differential equations have negative real parts and large absolute value.

Third, economists need to recognise that economic agents are intelligent—in the way that aeroplanes are not—so that the design of policies will have to allow for the fact that participants in the economy change their behaviour as a result of the policies which are applied (Lucas, 1976). The ‘rational expectations’ revolution has so far shown us what to do about this if the policies are fully understood. Policies like those described previously can now be designed using an econometric model, on the assumption that people understand these policies very well; so well in fact that they base their actions exactly upon the predictions of the model about the effects of both present *and* future policies! But this is not really satisfactory. Finding ways to design policies which work well and are robust, when these policies are not fully comprehended and yet do cause changes in behaviour, is now the major technical challenge of policy design.¹⁷

Conclusion

This article has explained why there is now a void in the theory of macroeconomic policy. It has shown what we can learn from the Keynesian revolution, and from the monetarist counter-revolution. I have laid out a new framework which, it is my hope, will help to shed light upon our darkness.

It must be admitted that everything is at present very uncertain. At the very least this means that policy needs to be cautious, rather than confidently committed to a set of prescriptions, even when these are appearing to go wrong. That too—the need for humility—is something that we can learn from both the Keynesian and the monetarist eras of the recent past.

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17. See Currie (1985) for a very clear, non-technical, discussion of this challenge.

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