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ON THE CASE FOR GRADUALISM

David Laidler

This paper contains preliminary findings from research work still in progress and should not be quoted without prior approval of the author.

DEPARTMENT OF ECONOMICS
THE UNIVERSITY OF WESTERN ONTARIO
LONDON, CANADA
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ON THE CASE FOR GRADUALISM*

by

David Laidler

- * This paper builds upon and incorporates material from my essay "An Alternative to Wage and Price Controls" which was published in M. Walker (Ed.), The Illusion of Wage and Price Control, Vancouver, The Fraser Institute, 1976. I am grateful to Dr. Walker and The Fraser Institute for granting me permission to use the material here, and to Franco Spinelli for helpful comments on this version of the paper.

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I

INTRODUCTION

For more than a decade now, governments throughout the Western world have been struggling with the problem of combating inflation. With the passage of time, the view that inflation is essentially a monetary phenomenon, to be coped with by means of monetary policy has gained wider and wider acceptance, not least among those responsible for the conduct of policy. In the public perception of these things, there exists a body of doctrine, usually known as "Monetarism", which seems to say that, if only the money supply is brought under control, so will inflation. The proponents of this doctrine are often portrayed as suggesting that the cure for inflation is really rather a "simple" matter, or "simplistic" in the vocabulary of their critics. To put matters this way is misleading, and always has been.

The economic theory that underlies advocacy of a monetary cure for inflation is relatively straightforward. However, monetary policy affects variables other than the inflation rate, and, if monetary policy is nevertheless devoted to achieving price level targets, it cannot be used for other ends. Also, and quite obviously, there exists a whole host of policy problems that are not monetary in nature, but which nevertheless might reasonably require the attention of those same governments that attempt to cope with inflation. All of these matters make the actual conduct of a monetarist anti-inflation policy a politically complicated matter.

This essay seeks to clarify the issues involved in the use of monetary policy, conceived of as control of the rate of growth of the money supply, to bring inflation under control, in the hope that proponents and opponents alike of such policy will come to have a better appreciation of the complexities that must inevitably arise if it is to be implemented successfully.

II

PRICE STABILITY AND A MONETARY RULE

The first step in designing policy to produce a non-inflationary economy is to set a reasonable and attainable goal. It is clearly impossible to achieve a state of affairs in which the cost of living for each and every member of the community remains constant on a day by day or even a year by year basis. Even if some overall measure of the general price level were to be held absolutely constant over time, and as we shall see in a moment that is hardly an attainable goal, different members of the community would find their own personal cost of living varying, perhaps up and perhaps down, at any particular moment. For example, the relatively poor spend a larger proportion of their incomes on food than do the relatively rich. A bad harvest would cause the price of food to rise, and even if prices in general were stable, that would cause the cost of living to rise for the poor. On the other hand, the rich spend a greater proportion of their incomes on travel. A growing scarcity of energy makes travel costs rise relative to most other prices, and hence faces the rich with an increase in their cost of living.

There is no way of preventing things like bad harvests happening, or of completely suspending the depletion of energy resources, and it is therefore idle to pretend that everyone can be guaranteed a constant cost of living. The best that can possibly be done is to follow policies that will ensure that, overall, taking one year with another, the rate of change of some reasonably representative price index will vary about a constant rate close enough to zero that the community finds any remaining tendency for prices to drift up (or down) tolerable. This is a modest goal, to be sure, but it has the great virtue of being attainable, and once attained, it ought to be sustainable as well.

In any country, long run stability in the inflation rate at a low level once achieved, would be sustained if its Central Bank, or whatever other agency might be in control of such matters, maintained a policy of making the supply of money grow at an appropriately chosen rate, year in and year out. The basis for this proposition is, in broad outline at least, the same now as it was when Milton Friedman set it out in (1960) Such a policy would work in any country where there existed a reasonable degree of price flexibility and a stable aggregate demand for money function. That seems to include just about every country that has ever been studied and certainly advanced economies such as the United Kingdom, the United States, and Canada. Let us consider the demand for money first of all. The firms, households, and other institutions that make up any economy use money - currency and bank deposits - to carry on their everyday business, and each one of them, on average, might be expected to keep by him an amount of cash that is related to the volume

of market transactions he is involved in and to the average price level at which those transactions take place. Moreover, the typical agent might be expected to keep on hand a certain amount of cash to meet unforeseen contingencies, while some may also hold money to facilitate speculative activities in bond, stock, and commodity markets.

The reader will here recognise Keynes's familiar triad of motives for holding money, and there is nothing inconsistent about invoking his analysis as a basis for the monetarist policy propositions which this essay is devoted to arguing. The key point is that, although there is no logical reason why it has to be so, these motives, and perhaps others as well, in fact prompt people to act vis a vis their money holding in a way that is predictable. Moreover, though any individual's desired money holding might and does fluctuate over time, such fluctuations tend to cancel out as we aggregate over individual agents, so that, for the economy as a whole there does in fact exist a stable relationship between the level of real national income and the general price level on the one hand, and the amount of money that the economy requires to carry on its business on the other. Though there is nothing intrinsic in Keynes's theory of the demand for money, or in any other theory either, that requires that we should observe a stable aggregate demand for money function, there is nothing there to rule it out either, and the existence of such a relationship for a wide variety of times and places is, as I have already noted, one of the best established facts of applied economics.

Even so, I have referred to this relationship as stable and not constant. The relationship between money holding on the one hand, and

real income and prices on the other, is not one that can readily be observed on a day by day, or even on a quarter by quarter basis. It does begin to become apparent when we take our data year by year, though even here it is rather rough and ready. The relationship in question seems to involve the economy's demand for nominal money rising in proportion to the general price level (as basic economic theory would predict), and perhaps a little more slowly than real income. Even so, this relationship leaves ample room for year by year fluctuations in the economy's demand for money relative to real income and prices. Money typically bears interest at zero or at least low and rather inflexible rates, so when market interest rates are high, agents economise on money holding and devote more of their wealth to holding income earning assets instead. Also, empirical evidence seems to show that short term fluctuations in real income do not have so pronounced an effect on the quantity of money demanded as do longer term changes: that is, it is permanent, rather than current income that affects the demand for money. And none of this is to mention the fact that sudden shocks to the money supply, or to variables on the demand side, can lead to the economy being temporarily pushed "off" its demand for money function altogether. (On all this see Laidler (1976) (1980).)

However, all of the factors I have just discussed are inherently temporary in nature and so therefore is their influence on the demand for money, which on average, taking one year with another, does grow steadily with real income and prices. It follows from this that, if the monetary authorities provide only enough money to accommodate the growth in the

public's demand for cash that stems from real income growth (perhaps adjusted for any long term changes in interest rates if there are any) there can be no room for prices to rise. A money supply that grows at a rate a little below the trend rate of growth of real income, the precise figure here being one that could only be settled after detailed quantitative work had been carried out on a specific economy, will serve automatically to stabilise prices at a roughly constant level. To see why, let us now consider what would happen if the price level did not remain constant, bearing in mind what has already been said about the importance of a degree of price flexibility.

Suppose in some economy or other, for some reason, perhaps the autonomous activities of trade unions, or of a few large corporations, the price level began to rise; what would then happen? At first there would be very little in the way of an observable response. Agents would find themselves becoming short of cash as they tried to carry on the same volume of business at a higher and rising price level, but one would not expect them to take immediate action in response to this. A cash shortage is inconvenient, but not something that requires instantaneous attention. However, if that shortage persisted, as it would in the case envisaged here, we might expect to see agents begin to take action to build their cash holdings up to a more comfortable level. How they would do so would almost certainly vary from agent to agent. Some would temporarily cut back expenditures on currently produced goods and services in order to let their cash build up; some would try to dispose of other assets that they were holding, such as bonds or equities; while others would attempt to

extend their credit at banks and other financial institutions.

All this activity would, among its other effects, put upward pressure on interest rates, and therefore have two further effects. First, because the demand for money varies with interest rates, agents would become more willing to live with less cash relative to their volume of business, and this effect would tend to slow down the process of restoring the economy to a zero inflation rate. Indeed, in principle it could be strong enough to short circuit the whole stabilisation process I am describing here, but empirical evidence tells us that such forces are not strong enough to do this in practise. Thus, it is the second effect that is of crucial importance: higher interest rates would begin to impinge upon spending decisions, particularly perhaps the investment decisions of firms, and households' decisions to purchase durable goods such as housing, and automobiles. These effects would supplement the direct effects on the demand for output of the activities of those seeking to restore their cash positions by immediately reducing their expenditure on goods and services. Overall, there would be created a downward pressure of demand that would work against whatever forces they were that were tending to push up prices in the first place. Since that downward pressure of demand would continue to grow so long as prices continued to rise, it must ultimately cancel them out.

Conversely, any tendency for prices, or real income for that matter, to fall would, if the supply of money were held on a constant growth path, be met by excess liquidity on the part of agents, a tendency for interest

rates to fall and for the demand for goods to expand, thus putting upward pressure on prices and output. In short, if the money supply grows at a constant rate, real balance effects (where the term is broadly conceived) for that is what we have been describing here, will act as a powerful built in stabiliser for the economy, tending to maintain price stability without any direct action on the part of the authorities. Such a policy will not guarantee complete price level stability as I have already remarked, but on average, taking one year with another, the inflation rate ought not to deviate too far from zero if such a policy is maintained.

The question must immediately arise as to whether we cannot do better than that. When prices begin to rise, why should not the authorities act to slow down the rate of growth of the money supply in order to speed up the economy's return to price stability? In principle there can be no doubt that this is possible, but problems arise in practise. If the authorities are to intervene in a helpful way, they must have a great deal of knowledge about what is happening in the economy, about what is going to happen, and about how the economy will react to their actions. They must ensure that their countervailing policy does not end up putting on too much pressure in the opposite direction or in putting on such pressure at the wrong time, because if it does either of these things, an active policy, however well intentioned, would make prices less stable over time than they would be were a simple rule adhered to. There is considerable doubt about whether we have enough knowledge of the structure of the economies we live in, or of the factors underlying the autonomous shocks to which they are subject to be able actively to use the money

supply as a stabilising device without thereby running a severe risk of doing more harm than good.

Moreover, when we say "structure of the economy" here, we are not referring to something like the structure of a machine, but to a set of relationships that describe the actions of economic agents, of human beings. It is extremely unlikely, as such advocates of the "rational expectations" notion as Lucas (1976) and Sargent and Wallace (1975) have warned us, that such a structure will remain stable in the face of different types of policy actions on the part of the authorities, so that the problems to which I have referred will not easily be solved by the growth of quantitative knowledge. Human beings, in order better to plan their own lives, take account of what it is that policy makers are doing and are always therefore likely to surprise the policy makers with their reactions. The difficulties here are not, that is to say, merely the product of the current imperfect state of knowledge, but are inherent in the nature of human society and will always be with us.

All in all then, it is a matter of elementary prudence to suggest that policy makers should settle for a simple rule to govern their behaviour, and then stick with it. To implement such a rule will not ensure anything like perfection, but it is likely to lead to the perpetuation of a reasonable degree of price stability, if that is once achieved. However, to opt for a rule is not to opt for rendering monetary policy makers redundant ever afterwards.

I have already noted above that the choice of a particular growth rate for the money supply would have to be based upon quantitative considerations. Assuming that one knew what the economy's underlying growth rate was, one would need to know the real income elasticity of demand for money in order to choose a non-inflationary rate of monetary expansion. Furthermore, it might also reasonably be added that one would have to know what he meant by the word "money". Currency plus deposits at banks is not a precise enough definition for practical application in a world in which the lines between deposits at banks, and their other liabilities, not to mention those between banks and other financial intermediaries, are, to say the least, unclear. In fact these two issues are closely inter-related, because empirical evidence tells us that, on the whole, the more broadly is money defined, the greater is its real income elasticity of demand. In a world in which the structure of financial institutions never changed it might be sufficient to argue that it doesn't much matter which concept of money is to be controlled, so long as the relevant growth rate is consistently selected. After all, a world without institutional change, if one monetary aggregate has its growth tied down on a non-inflationary path, then all the other aggregates might be expected to fall into line in due course.

The problem with all this is that institutional change does take place, and is notoriously difficult to predict before the event. In the financial system, one of its effects is to change the relationship between the theoretical concept of "money" and any particular collection of assets which, at any particular time, might be selected to stand for "money" for

the purposes of conducting policy. For example, a change that permits deposit accounts - time deposits in North American usage - to become subject to transfer by cheque clearly changes the meaning of any monetary aggregate that excludes such accounts, and indeed of one that includes them for that matter. Such a change would thus cause the demand for a particularly defined aggregate to shift, and perhaps its income elasticity of demand to change as well.

Though one should not overstress the importance of such changes, they have nevertheless occurred in the past in many countries, and their effects on the demand for money function have been observed to be significant (see Bordo and Jonung 1978). Moreover, monetary institutions, and the people who operate them, are not immune to the general tendency of economic agents to react to the observed conduct of policy in ways that might surprise the policy maker. Thus, when it is said that it is important to tie down the growth rate of the money supply if a zero (or low and stable) inflation rate is to be sustained in any economy, this does not mean that the policy can be implemented simply by choosing a particular aggregate at a particular moment, calculating its income elasticity of demand from past data, and then legislating that in the future, it grow for ever more at a particular rate. The monetary system must be constantly monitored for institutional change to ensure that the chosen monetary aggregate and the growth rate targets set for it remain compatible with attaining the goal of price stability, and the relevant targets must, if necessary, be adapted to changed circumstances.

If all this seems suspiciously like a form of fine tuning to the reader, that is because this is exactly what it is. To adopt a monetary rule is not to abandon "fine tuning", but to ensure that the money supply, rather than the levels of real income, employment and prices, becomes the proximate object of fine tuning. The case for adopting a monetary growth rule is that, by fine tuning the money supply, one is more likely to achieve stability in the ultimate target variables of monetary policy than if one attempts to fine tune them directly. It should not be confused with arguments to the effect that economic policy should in general be subjected to quasi-constitutional restrictions, for it exists quite independently of the ideological considerations that underpin these latter proposals. (The reader who is interested in these ideological matters will find Yeager (1962) well worth consulting.)

III

GOVERNMENT BORROWING AND THE EXCHANGE RATE

Monetary policy is not carried on in a vacuum. It is but one of the macro-policy tools available to government, and cannot be implemented independently of the others. If a government undertakes a particular policy towards the growth rate of the money supply, then that will put constraints upon the conduct of fiscal policy, and upon policy towards the exchange rate as well, constraints which we will now discuss.

Let us begin with fiscal policy. Any government, national or local, federal or provincial, must balance its books. It must cover its current expenditures either from taxes or borrowing, or in the case of local and

provincial governments in most countries, from grants from senior governments as well. In the present context, it is the central government that is of prime importance, because, in most countries, it is the central government, and the central government alone, that has the power automatically to borrow from the Central Bank if it deems it desirable. Indeed, in many countries, the Central Bank is to all intents and purposes a branch of the central government, and therefore completely subservient to its political decisions. Though that is how it should be in a democracy, one can understand the nostalgia of some economists for the days of truly independent Central Banks, for they did, (and in the case of Germany and Switzerland still do) resist what they perceived to be political pressures towards inflationary policies more effectively than do those institutions which, like the Bank of England, for example, are just another branch of government.

The problem arises here because, when a government borrows from its Central Bank, it is, to all intents and purposes printing money. As the Bank lends to the government it adds a treasury liability to its own assets, and creates a brand new liability of its own, a deposit, which it hands over to the government. The government then spends this deposit, thus putting newly created money into circulation, and money of a special type at that, because in most banking systems, Central Bank liabilities may be, and are, held by the Commercial Banks as reserves. Thus any increase in their quantity enables the banking system as a whole to expand its liabilities, and hence the money supply, by a multiple of that original increase.

The implication of the last paragraph is quite straightforward. If a Central Bank is to be told to ensure that the money supply grows at a constant rate, year in and year out, then the volume of central government activity (and public sector activity where the central government is an important source of funds for the rest of the public sector) that can be financed by borrowing from the Bank must be consistent with the pursuit of that policy. It must not fluctuate too much from year to year, and in the long run can grow only at about the same proportional rate at which it is intended that the money supply grow.

Now, of course, the government of any country has many policy goals to pursue other than the control of inflation. National defence must be provided for, health and welfare programmes must be financed, relatively depressed regions of the country, or particular depressed industries, might be thought worthy of subsidies, and so on. One could argue at length about the merits of any particular government programme, or indeed, on a more fundamental level, one could engage in debate about the principles that should govern any form of government intervention in economic life. However, none of these matters is relevant as far as the current discussion is concerned. The implementation of a rule for money supply growth in order to ensure reasonable price stability is neutral as far as questions concerning the degree of government intervention in the economy is concerned. Its importance for fiscal policy arises because it puts constraints upon the way in which government expenditures are paid for, not because it constrains their overall level and structure.

The implementation of a monetary growth rule implies that the vast majority of government programmes must be tax financed, or paid for out of the proceeds of bond sales to the public. Taxes depress private spending, as do bond sales because they put upward pressure on interest rates, but that is exactly what is required if government expenditure is to be expanded without putting undue inflationary pressure on the economy. If government spending is to be expanded in an economy operating in the region of capacity output, then private spending has to be reduced to make way for it. It is usually politically easier for governments to increase their expenditure than to raise taxes or drive up interest rates by bond sales. Thus, they always face a strong temptation to finance their spending by borrowing from the Central Bank in what amounts to an attempt to hide from the population the true costs of their expenditure programmes. However, in such circumstances the private sector still has to release resources to the government. Inflation is simply the means by which this is accomplished when the government spending is financed by borrowing from the Central Bank.

A commitment to a rule for the rate of growth of some monetary aggregate forces the government to act in such a way that the costs of its expenditure plans are made readily apparent to the public which, in any event, must bear them. For a government to commit itself to a monetary growth rule involves it in being self disciplined about the way in which it finances its programs. To say this is to recognise yet another aspect of the role of such a rule in the maintenance of price stability. However, to repeat a point already made, there is no reason to suppose that the

implementation of a money supply growth rule puts any limits on the scope of government economic activity over any range that is politically relevant in contemporary Western economies. In this respect the rule is politically neutral and is not an adjunct of a generally non-interventionist policy stance, except in the sense that the non-interventionist politician is likely to find the financial constraints implied by the rule less onerous to meet than his interventionist counterpart.

So far the discussion has proceeded as if we were dealing with a closed economy, an economy that is not involved in trade with the rest of the world, or in the workings of world-wide financial markets. However, all Western economies are deeply involved with the world economy, and even the largest of them, the United States, is nowadays sufficiently "small" in relation to that world economy to be potentially vulnerable to external shocks. If one asks what constraints the implementation of a monetary rule would place upon a country's choice of policies towards the foreign sector, he will soon discover that it is left with no choice but to allow exchange rate flexibility if it is to be able to adhere to that rule in the presence of shocks coming from outside.

To see why, consider what would happen if a particular country was attempting to pursue a monetary rule calculated to generate domestic price stability at a time when there were strong inflationary pressures at work in the rest of the world. Suppose that under such circumstances that country tried to maintain a constant exchange rate between its currency and some representative "rest of world" currency, or basket of currencies. Then the prices of imported goods would begin to rise at home.

At the same time, exporters would find it getting progressively easier to sell their products in world markets, and would therefore be tempted to raise their prices abroad and at home as well. As a direct result of these effects there would develop simultaneously a balance of payments surplus and a tendency towards domestic inflation. A constant rate of monetary expansion, if it was maintained, would, of course, offset the tendency towards inflation, but the growth rate of the money supply could not in fact be maintained on target in the face of a fixed exchange rate and a balance of payments surplus.

A balance of payments surplus involves the inhabitants of the home economy receiving a net inflow of foreign currency. There is no reason to suppose that they will wish to accumulate and hold stocks of foreign exchange; instead they will present them to their Commercial Banks in exchange for domestic currency, and those banks in turn will present the foreign exchange to the Central Bank for redemption. The maintenance of a fixed exchange rate requires the Central Bank to be willing to buy foreign exchange presented to it in unlimited amounts and at fixed prices. Moreover, it must buy the foreign exchange with newly created liabilities of its own: that is to say with newly created money. Thus, under a fixed exchange rate, a balance of payments surplus leads automatically to a step up in the rate of money creation in much the same way as does a step up in the rate at which the government borrows from the Bank.

It is sometimes argued that these consequences can be avoided by so called "sterilisation" operations, whereby, after purchasing foreign exchange, the Central Bank then sells government bonds on the open market in order to reduce the money supply again, leaving the overall quantity of money in circulation unaffected by the balance of payments surplus. The problem here is that such bond sales put upward pressure on domestic interest rates, and such pressure leads to an inflow of capital. This in turn increases the balance of payments surplus and hence puts further upward pressure on the rate of monetary expansion. In the contemporary world, with its extremely efficient international capital markets, these effects would come through very quickly, in days or even hours, rather than weeks, so that sterilisation policies, which in the 1950s might at least have been capable of delaying the monetary consequences of balance of payments surpluses for a few months, are no longer likely to be effective even for a short period. The maintenance of a fixed exchange rate therefore makes it impossible for a country to maintain a constant growth rate for the money supply. The two are alternative rules for the conduct of policy, and are incompatible with one another. A flexible exchange rate is a necessary prerequisite for a money supply growth rule.

It should be noted explicitly that the arguments just advanced do not claim very much on behalf of a flexible exchange rate as far as its ability to insulate the economy from foreign disturbances is concerned, nor should they, for strong claims in this regard cannot be defended. To begin with, it is now widely understood that there is a whole class of foreign disturbances, which will influence the real terms of trade that

face any particular country, and will make their effects felt domestically regardless of the exchange rate regime. For example, if the world price of oil goes up relative to the prices of other goods, then that will make the inhabitants of an oil importing country worse off, and those of an oil exporting country better off, regardless of the exchange rate regime. Moreover, the effects of such a change on the profitability of oil using industries, or of industries which must compete domestically for inputs with oil production will also be the same under fixed or flexible rates. Moreover, if the rest of the world is subjected to monetary instability as a result of other countries' authorities not adopting monetary growth rate targets, then as Dornbusch (1976) has argued, that instability can, in the short run, be transmitted through the foreign exchange market even, and indeed particularly, to the economy of a flexible exchange rate country. The only advantage that is being claimed for a flexible exchange rate here is that, in permitting a country to adopt a money supply rule, it permits it to choose its own long run average inflation rate. In my view then, the case for a flexible exchange rate is identical to the case for adopting such a rule, rather than raising a separate and distinct set of issues.

IV

UNEMPLOYMENT AS A POLICY PROBLEM

The previous section of this essay was concerned with the effect of the adoption of a rule for the monetary expansion rate on policy towards the exchange rate, and on the means available for financing government expenditures. I have not yet said a word about policy towards unemployment,

and yet in the quarter century after the Second World War "full-employment" was widely regarded as a more important policy goal than price level stability. I must now, therefore, say something about what the implementation of a monetary rule might do to a government's ability to pursue a "full employment" policy. The first, and most obvious thing to be said here is that, if monetary policy is to be geared towards the control of inflation, then it cannot also be actively deployed to pursue an employment targets. However, the government of a modern economy has many tools other than monetary policy available to it. Therefore, to say that monetary policy cannot be used directly to influence the unemployment rate is not to say that a government should not have a policy towards that variable or that it is lacking in means to carry out such a policy. Nor, as we shall see in a moment, is it to say that the pursuit of price stability by way of a monetary rule will not, in and of itself, have effects which are likely, in the long run, to be beneficial on that variable.

As with the pursuit of "price level stability", so with that of "full employment", it is important to have a goal that is in fact attainable. A state of affairs in which every member of the labour force has a job at all times is obviously not attainable (or perhaps even desirable), so just what is a reasonable target to pursue on the employment front? A growing economy is inevitably in a state of flux. New products and processes are continually being introduced, and the structure of output best suited to meet the desires of the population is always changing. At any time, some sectors of the economy will be shrinking while others expand, and labour will have to move between them. One cannot expect such

movement to take place instantaneously. Even when to change employment does not require him to gain new skills, it still takes time for a worker displaced in one industry to find a job elsewhere, and when the market for a particular type of skill shrinks with the industry in which the workers who possess it are employed, the process of moving between jobs is likely to take even longer. Moreover, it is not just the movement of existing members of the labour force between jobs that generates such frictional unemployment. When the young enter the labour force for the first time, they too take time to find suitable employment, and again, this is likely to take time, time during which they are unemployed.

When we talk, therefore, of trying to achieve "full employment" in the economy, we must allow for the consequences of structural change and frictions in the economy in setting our goal. We must recognise that there is a "natural", or (more neutrally) a minimum feasible, unemployment rate. Setting aside for the moment the difficult question of how one might go about estimating that unemployment rate, its very existence raises an important caveat for "full employment" policies, namely that, no matter what arguments might be raised in their favour, the conventional tools of fiscal "demand management" are not suitable devices for driving down the natural unemployment rate should it be judged to be unacceptably high. At best, such policies are appropriate to dealing with unemployment that arises from an overall shortfall in the level of aggregate demand below the economy's productive potential. However, this does not mean that a modern government is powerless to affect the natural unemployment rate's level if it does find it too high.

The appropriate policies for dealing with such unemployment as arises from labour market frictions and structural change in the economy, involve reducing those frictions, and hence making it easier for workers made redundant by technical change to acquire new skills, making it easier for people to move from labour surplus areas to labour shortage areas, or for firms to move in the opposite direction. There is no space in this essay to set out and debate the merits of particular policies to deal with these problems. Which policy mix it is best to pursue in any time and place is likely to depend upon the particular characteristics of the problem as it manifests itself there.

Sometimes extensive job retraining schemes might be appropriate, and sometimes regional subsidies, but policies to reduce the natural unemployment rate need not always involve an increase in government intervention in the economy. In some cases, already existing policies contribute to keeping the unemployment rate up, and their removal would help matters. For example, in the United Kingdom, rent controls on private sector housing, and the heavy subsidies given to council tenants and owner occupiers, taken together greatly inhibit the geographical mobility of labour; so does the institution of redundancy payments. In the United States and Canada minimum wage laws have a damaging effect on the employment prospects of the young and the unskilled. In all of these cases a reduction, rather than an increase, in government intervention in the markets would help the unemployment rate.

Now quite obviously such policies for dealing with the natural unemployment rate as I have mentioned above will not find universal

support anywhere. The interventionalist politician will be attracted by job-retraining schemes and regional subsidies and repelled by the abolition of housing subsidies, redundancy benefits, and minimum wages. Anyone with an ideological attachment to market mechanisms will take just the opposite view. However, to argue for a monetary rule for the control of the price level does not imply that one should take one side or the other in such debates. If the growth rate of the money supply is to be kept on track, that does have implications for the way in which government expenditures are financed. However, as I have already stressed, it has no implications for the scale of such expenditures, or for the structure of government intervention in the economy. In particular there is nothing about a commitment to a monetary rule that inhibits the pursuit of high employment by other means if that is deemed desirable.

One can, albeit tentatively, go a step beyond this, and suggest that the climate of price level stability that a monetary rule would create might itself have beneficial effects on the unemployment rate. To the extent that inflation itself is a source of confusion, uncertainty and friction in economic life, and to the extent that the protection against such uncertainty that can be afforded by indexation schemes of one sort or another is incomplete, then the absence of inflation will in and of itself promote the smooth workings of markets, not least the labour market, and to that extent reduce the natural unemployment rate. How important such a side effect of price level stability might be is, in the current state of knowledge, a debatable point, but qualitatively at least, the effect is there, and ought not to be ignored.

The last few paragraphs have dealt with the "natural" unemployment rate, or what a "Keynesian" economist might call the "irreducible" minimum unemployment rate, by which he would mean "irreducible by demand management policies". Now I must say something about the effects of the adoption of a money supply growth rate rule on our ability to counter increases in the unemployment rate above this irreducible minimum. As I have already argued at considerable length elsewhere, there is every reason to suppose that unemployment which results from a failure of the labour market to clear is, from time to time at least, a fact of life, rather than a figment of the Keynesian economist's imagination. In this context again, the adoption of a money supply growth rate rule will have beneficial side effects, for reasons that have, in effect, already been discussed.

If, for some reason, the level of real income and employment were to begin to fall below their "natural" levels, this would also tend to be associated with a reduction in the inflation rate and hence in an economy in which a rule was being pursued, would automatically generate excess liquidity in the private sector. This, in turn, would stimulate spending and hence help to restore full employment. In short, a monetary rule acts as a built in stabiliser for output and employment as well as for the inflation rate, and this is not to mention the possibility that its adoption would actually remove a source of instability from the economy, namely those destabilising shocks that actually originate in fluctuations, either intentionally induced or otherwise, in the rate of growth of the money supply.

Even so, there is no reason to suppose that the stabilising effects

of a constantly growing money supply would, by themselves, be sufficient to ensure the maintenance of a comfortable level of employment at all times. They might be, but there can be no guarantee of this, and in any event, monetary weapons are not the only ones that might be deployed in an attempt at managing the level of aggregate demand. Fiscal policies involving variations in the scale of taxation and government expenditure are also available to be used to this end. Indeed, because they impinge directly upon the flows of income and expenditure in the economy, they are particularly well adapted to having a rapid impact upon the level of employment, an impact moreover that might be expected to die down over time as private expenditure is "crowded out" by government spending, so that any mistakes made either in the scale or timing of fiscal policy are unlikely to have long lived adverse macro effects. There is no reason to argue that the implementation of a rule for the rate of growth of the money supply should be accompanied by the abandonment of such policies. One can easily conceive of them having a role to play in ironing out those fluctuations in income and employment that would remain even when a monetary rule was providing a background of long term built in stability to the economy.

However, there are a number of provisos to the foregoing conclusion that merit explicit note. To begin with, and quite obviously, any government budget deficits that arise from the use of activist fiscal policy as a stabilisation device must be covered by borrowing from the public, and not by borrowing from the Central Bank, because only in this way can the conduct of fiscal policy be made consistent with the maintenance of a constant

rate of monetary expansion. Second, fiscal policy's major roles in the economy are to influence the allocation of resources and distribution of income. To the extent that its use for stabilisation purposes interferes with the pursuit of other policy targets, there might be important policy trade-offs to be taken into account in deciding how freely to use it for those purposes. Third, I have suggested that fiscal policies act quickly, and so they do once they are in place. However, the political process may be such that the process of implementation is slow and uncertain. This seems to be more of a problem in the United States with its Congressional system of government than in two party Parliamentary systems, but it remains a problem worth considering nevertheless.

Finally, I began this section of the paper by noting that there existed a "natural" unemployment rate, and that it was only appropriate to use traditional demand management tools to increase employment if the economy was operating above this rate. We must, therefore, be able to measure the natural unemployment rate with some confidence if we are ever to be in a position to deploy fiscal weapons to influence employment and output in a useful fashion. The amount of disagreement that there has been in recent years about just what is the value of the natural unemployment rate in the United Kingdom, or in the United States or Canada for that matter, suggests that in the current state of knowledge, we are in no position to estimate that rate with any degree of confidence at all.

The issues that I have just raised should make one rather cautious about how much to expect from fiscal policy as an employment stabilisation device. However, only the first of them has anything to do with the

adoption of a monetary rule. The others are quite independent of this and would have to be addressed by any advocate of fiscal policy, no matter what his views on the proper mode of behaviour for the Central Bank. Thus, to adopt a monetary growth rate rule to control the price level does very little to constrain the use of fiscal policies to combat unemployment. The adoption of such a rule does not therefore require a downgrading of unemployment as a target for policy. It leaves policy-makers with ample scope to choose other means for achieving such goals should they wish to do so.

V

ANTI-INFLATION POLICY

The preceding sections of this paper have argued that the adoption of a constant rate of growth for the money supply, adjusted from time to time if institutional change in the financial sector seems to warrant it, will confer upon an economy, not perfect price stability or perpetual full employment, but at least a good prospect of achieving low and reasonably stable inflation and a level of employment that will fluctuate around its "natural" rate. It has also been argued that such a monetary policy need not inhibit the authorities from attempting to reduce that natural unemployment rate by way of policies towards the labour market if they wish to do so, nor from attempting to iron out remaining fluctuations in employment about that natural rate with fiscal policy; although in the latter case I have expressed skepticism about how much could in fact be accomplished by such means. On the other hand, it has been noted that the

adoption of such a package does place certain constraints upon some aspects of policy. In particular the implementation of a monetary rule implies acceptance that the great bulk of government expenditure be tax and bond financed, and that interest rates and the exchange rate be left to be determined by market forces at whatever level they might dictate.

The proposal to use the money supply to provide a background of price level stability stops far short of guaranteeing perfection in economic life then. At best it provides an environment in which the many other economic and social problems with which modern governments are expected to deal can be tackled. Which problems will be taken up, and the means used to cope with them, will undoubtedly vary from country to country, and from time to time as well, as power shifts among various political parties. The analysis underlying this essay tells us nothing about what ought to be done here, and certainly does not support the position often attributed to advocates of monetary policy by their opponents, though seldom with any justification, that the adoption of appropriate monetary policies will in and of itself do all that is needed to solve these other problems. Monetary stability merely creates an environment in which it is easier to tackle a whole array of social and economic problems. It does not constitute a solution to them.

The situation in which just about every economy in the Western world now finds itself is far from being one of monetary stability. Inflation, at rates that even fifteen years ago would have been regarded as unthinkable, is now endemic in the system, and it is not enough for the

economist to point out that price level stability would be preferable to inflation, and that, once achieved, it can be maintained by keeping the money supply on an appropriately chosen constant growth path. He must say something about how it can be achieved, about how to get there from here. The answer that I would give to the question implicit here can be expressed in the single adverb "gradually". It is commonly agreed that the current world wide inflation began in earnest in the mid-1960s, largely as a result of the key currency country of the Bretton Woods system, the United States, attempting to finance the Vietnam War by way of money creation. It took till the mid-1970s for the increase of the trend rate of inflation in most countries to come to an end, and since then, they have at best held the line against further increases in the long run inflation rate. We have, that is to say, taken fifteen years to get into our current situation, and I can see no reason why we should not expect to have to take close to a decade to get back to where we were in the mid-1960s as far as inflation is concerned.

It is my judgment that inflation must be tackled by way of a programme of slowly but surely reducing the rate of monetary expansion until a rate compatible with long run price stability is reached, indeed that this is the only policy that is likely to be found tolerable. By this I do not mean that the policy will be a pleasant one, but only that the alternatives would be worse. The key factor underlying this judgment lies in the role played by expectations in economic life, and in particular the role that they play in the inflationary process. It is commonplace, but an important one, that economic activity takes place over time.

Decisions taken today are decisions taken for the future, and that future is an uncertain one. A firm deciding upon its production plans and its pricing policies must take a view about how much output it can sell, and at what prices, over the horizon for which it is planning. In negotiating a wage contract, both sides must base their bargaining positions, and the ultimate settlement, upon what they think are the prospects over the period of the contract for the particular industry they are involved in, and for the economy as a whole. Indeed the very planning period over which expectations must be formed is itself something which must be chosen, and not the least of the advantages of a climate of monetary stability is that it permits the horizon to be lengthened, and hence makes the planning problems of firms and households alike less onerous and time (not to mention resource) consuming to solve.

Wages and prices are set in terms of money, so that expectations about the time path of the purchasing power of money must become pervasive elements in economic decisions. Currently held expectations about the future inflation rate influence currently made decisions, not least those that are made about the future time path of particular wages and prices, so that there is a strong element of self-fulfilling prophesy about the behaviour of the price level. If all agents expect the price level to remain stable, each firm will set the money price of its own output on that expectation, and each wage bargain that is struck will also be based upon that expectation. The result of all these individual decisions will be that the general price will in fact tend to be stable. If, on the other hand, everyone expects the inflation rate to run at shall we say ten

percent per annum into the relevant future, then that expectation will be built into the behaviour of wages and prices, and the inflation rate will indeed tend towards ten percent.

Now when we use the word "expectation" here, we must be careful not to think of it as necessarily being a consciously constructed forecast of the time path of the inflation rate. For some economic agents, for example large firms or trade unions with specialised economic research departments, it will indeed be just that, but for many agents an "expectation" about inflation amounts to little more than an uneasy feeling that prices are rising faster than they did. Moreover, it is not the state of anyone's psychology, or the quality of their explicit forecast (if they make one) that matters for the inflationary process, but the way in which expectations get translated into action. The large corporation or trade union might use its latest inflation forecast as an input into a carefully calculated pricing or wage bargaining strategy, but for less sophisticated agents, the "feeling" that prices are rising faster than they used to might translate into what amounts to a change in their habitual behaviour vis-a-vis price and wage setting. This is a point of some importance in the context of the current inflation, because it has now been going on for fifteen years or so. That in turn means that there now exists a whole generation of adults who, never having experienced anything different, take rates of price and money wage increases in double digits quite for granted. No doubt, as inflation is brought down, they will learn not to do so, and will develop new expectations and habits, but there is no reason to believe that they will do so quickly.

The arguments presented in the last few paragraphs imply that, once inflation is well under way, as it surely is in just about every Western economy by now, that complex of factors that we label with the deceptively simple word "expectations" imparts a good deal of inertia to the behaviour of prices. Prices continue to rise in large measure because they have been rising. However, if the inflationary process is going to proceed smoothly, it needs to be validated by the behaviour of the money supply. If a ten percent per annum inflation rate is actually going to continue unchecked, the money supply must grow at a rate fast enough to accommodate whatever growth in the demand for money might emanate from real income growth and such, and then at a further ten-percent to keep pace with rising prices. The policy strategy called "gradualism" amounts to doing no more than slowly reducing the rate of monetary expansion over time until it will accommodate no inflation, and the reason for bringing about this reduction in the rate of monetary expansion slowly lies in the consequences for real income and employment of reducing the rate of monetary expansion.

The main short run - but not necessarily short-lived - effects of reducing the monetary expansion rate in an economy where inflation is well entrenched is not a reduction in inflation at all, but a downturn in real activity and an increase in unemployment. When the monetary expansion rate is reduced, economic agents begin to run into the very type of cash shortage we discussed earlier, and their reaction to it will result in a fall-off in the level of aggregate demand for goods and services. However, when the individual firm experiences a decline in its sales, it has to decide whether the decline is a temporary aberration that can safely be ignored, or whether it portends a longer term shift in market conditions.

It takes time and resources to gather the kind of information needed to make such a decision, so that the initial reaction to falling sales across the economy is a build-up of unwanted inventories of goods and not much else.

It is only when it becomes apparent to firms that the fall in demand is not a localised or transitory phenomenon that they will take action. Such action will involve cutting prices (which includes raising them by less than otherwise would have been the case) to boost sales, or cutting output, or a combination of such policies. The general presumption must be that their initial response will be more heavily weighted to the side of cutting output. In part this is simply because cutting current output is complementary to increasing sales as a means of reducing unwanted inventories, and partly because it is sometimes cheaper for firms to adjust output than go to the expense of revamping their price-lists and informing their customers about this. More important however is the simple fact that wage contracts already entered into put a limit on the extent to which prices can be lowered without involving firms in losses. It is easier to cut output, put workers on short time, or indeed lay them off altogether, than to renegotiate an existing wage contract in a downward direction, not least because lay-offs only affect a part of the labour force, while wage cuts have to be negotiated with everyone.

Inflation expectations, the long-term contracts that embody those expectations, and the difficulty that firms, and indeed other agents too, must inevitably experience in distinguishing random fluctuations in demand

from longer term changes in its time path, all interact to cause a reduction in the monetary expansion rate to have its first major impact on output and employment. However, inflationary expectations are only one ingredient of wage and price setting behaviour. The appearance of excess capacity in the economy will lead firms to revise down their prices relative to their initial plans, and the associated unemployment will lead to a similar effect on the time path of wages as contracts come up for renegotiation. In time therefore the inflation rate will indeed begin to slow down. As it does so, expectations will begin to be revised downwards, habits will change, and the fall off in inflation will tend to become cumulative.

In due course, the falling inflation rate will catch up with the rate of monetary expansion, but it does not follow from this that the process we are describing would be then at an end. The inflation rate might not simply "catch up" with the monetary expansion rate, but is likely instead to overtake it. If it did, agents would begin to find themselves with surplus cash, demand would begin to increase, and the process we have just described would reverse itself. Although monetary contraction would eventually lead to a permanently lower inflation rate, the approach to this long run solution would be in a series of cyclical swings around the long term trend, rather than along a smoothly converging path. There would be similar swings in income and employment about their natural rates, and, in the current state of our quantitative knowledge, there is no reason to suppose that these swings might not be of several years duration each. (A more formal analysis of these cyclical swings

is given in Laidler and Parkin (1975)).

The probability that, under a gradualist policy, the inflation rate is likely to follow a cyclical path is important for a number of reasons. First, it implies that there is no reason to expect any close correlation between the rate of monetary expansion and the price level during the, perhaps long drawn out, approach to a lower long run average inflation rate, and that therefore the absence of any such correlation should not be read as evidence of the failure of such policy. Second, and closely related, the fact that, at some time after the implementation of policy, a satisfactory inflation rate has been achieved, does not mean that this inflation rate will be sustained. A temporary trough in the inflation rate is not the same thing as a lower long run value for the variable, nor is an upswing in the inflation rate a sign that a gradualist policy is failing. However, these considerations undoubtedly make the problem of sustaining the political consensus necessary to maintain such a policy in place a difficult one, and must naturally lead to the question of whether or not one cannot do better than "gradualism".

Could one not, for example, so manipulate the money supply as to keep the inflation rate coming down smoothly, so that the success of the policy in question was obvious to the average observer? The answer here is straightforward, for the question implicitly asserts that a fine tuning policy towards the inflation rate would be preferable to a simple contraction of the rate of monetary growth. So it would, if such a policy could be designed, but it is vulnerable to all the objections already raised in

this essay to fine tuning, I would argue that, if those objections are taken seriously, as they should be, we are forced to conclude that though desirable in principle, the policy here envisaged is unlikely to be feasible in practise.

As a matter of fact, a policy of fine tuning inflation out of the system is not often proposed, but it is frequently argued that gradualism is so likely to be slow and uncertain in its progress that a quick cure for inflation, involving a rapid - within a quarter or two say - reduction in the monetary expansion rate, is preferable. Such a proposal is often defended by pointing out that because so much of the inertia of the inflationary process comes from expectations, and because the expectations in question are held by rational agents who are well capable of observing the stance of monetary policy, an announced and clearcut change in policy might affect those expectations instantaneously. If it did, then it is argued that this would have a marked effect on inflation directly, without the intervention of real income and employment fluctuations.

There is nothing the matter with the logic of the above argument, but it does take the truth of certain empirical propositions for granted. First, it is one thing to change people's expectations with an announcement, and another to change their behaviour. Anyone tied into a long term contract before the policy change is announced will have to live by it, or attempt to renegotiate it, and a change in his expectations will not have any immediate effect on his behaviour. Also, before it can change

expectations, an announcement about a policy change must be believed, and there are two problems which suggest we cannot take it for granted that it will be. First, governments do change their minds, and because a policy is announced does not mean that it will be persevered with: consider for example the almost continuous speculation in the United Kingdom during the first two years of Mrs. Thatcher's government about the possibility of a "U turn". Furthermore, even if an agent believes that the government will stick to its policies, that will only affect his expectations if he believes that the policy will in fact work. Though Monetarists believe that a slowdown in the rate of monetary expansion will reduce inflation, they must recognise that that belief is controversial. Indeed, it is a minority belief in some countries. If they do recognise this fact, they will also recognise the inconsistency of arguing that the main transmission mechanism for such a policy can be through changes in the expectations of people who do not believe in it, and the absurdity of concluding on such a basis that the policy will work relatively quickly and painlessly.

Not all advocates of a quick cure for inflation rest their case on rational expectations. Lipsey (1980) for example agrees that a quick monetary contraction is likely to be more painful than a slow one while its effects last, but that the painful side effects will be over relatively quickly. This, however, is not obviously true. It may be that the cycles which a quick contraction might generate will be of a shorter duration than those brought on by a slow contraction, but that does not necessarily follow. In many dynamic economic models, the factors determining the period of any inherent cycle are not dependent on the size of the shocks to which the model is subjected, and it would be a bold economist who

speculated whether or not this was true of the dynamic processes underlying the interaction of monetary expansion, unemployment, and inflation, in the real world. The fact is that we know next to nothing about these things. And this is not to mention that a "short sharp shock" to unemployment might have unpleasant political consequences of its own.

VI

SUPPLEMENTS TO MONETARY POLICY

I have argued above that the case for gradualism is not that it is painless, or politically easier to implement than other policies, but that, in the present state of knowledge, its unpleasant effects are easier to foresee, and therefore assess, than those of alternatives. A quick cure for inflation might be less costly than a gradual one, but if it were, that would be the result of expectation effects, and of certain dynamic properties of market processes, on which, ex ante, we have no right to rely, for we have no evidence of their empirical relevance. Thus, a quick cure is also a risky one, and it is on what amounts to a declaration of ignorance that the case for the gradualist alternative rests. But the fact remains that the gradualist cure for inflation is likely to be painful, to involve unemployment and lost output over a number of years. Though economists nowadays would advocate wage and price controls as an alternative to monetary contraction in the fight against inflation, there is still a substantial number of economists (e.g., Lipsey 1980, Tobin 1980, Bodkin 1981, Wirick 1981) who would advocate controls as a supplementary device likely to ease the real effects of monetary contraction.

Needless to say the advocates of controls are in favour of "effective" arrangements for reducing the rate of change of money wages and prices, but to stop at this point in making the case for controls is to stop too soon. Of course "effective" controls would reduce inflation: that much is tautological, and the only opposition to "effective" controls would be ideological. The place where there is room for serious economic debate is on the matter of whether or not any particular control scheme is likely to work in the first place, and this is undoubtedly an area where reasonable people can disagree. The advocates of controls seem to rest at least some of their case on the likely effects of the introduction of such measures on expectations about inflation. The arguments for and against this possibility are, in essence, the same as those that I have already discussed in the context of the likely effects of the announcement of a tight monetary policy on expectations. If the announcement was believed, if a significant number of agents expected the announced policy to be effective, and if they were in a position to act upon that expectation, then the introduction of wage price controls might indeed lower the actual inflation rate by this mechanism. It is one of the curiosities of recent debates about how to control inflation that those who seem to put the most faith in the benevolent effects of the announcement of monetary contraction on the inflation rate put the least faith in the announcements effects of controls, and vice versa.

Lipsey (1980) who advocates both quick monetary contraction and controls as interlinked parts of an anti-inflation package is one of the very few who have at least displayed consistency in their attitude

towards announcement effects and perhaps my own views on this issue will already be apparent to the reader. They are the very opposite of Lipsey's, and start from an attitude of acute skepticism about announcement effects as a reliable basis for the design of economic policy. I have no more faith in the power of an announcement of controls to influence expectations in a significant way, and more important to influence behavior, than I do in the power of an announced monetary contraction. However, at the same time, I cannot deny the possibility of such effects proving important in practice, although in the case of wage and price controls I do have a deeper objection than mere skepticism. If announcement effects are to be of any more than passing importance, the change in expectations that they engender must, with the passage of time, be confirmed by experience. In the case of controls, this is unlikely to happen because no set of controls can be comprehensive; in particular, in an open economy, prices originating in the foreign sector cannot be controlled, or at least not without the erection of an apparatus for direct quantitative controls on overseas transactions that most advocates of price controls would shy away from.

Under a fixed exchange rate regime, it is well established that the long run trend of domestic prices is determined in the world economy, and it is for just that reason that the advocate of monetary gradualism must also be an advocate of exchange rate flexibility. The issue to be faced here thus concerns the way in which wage and price controls would work against the background of a flexible exchange rate. Suppose for the sake of argument that controls were effective, either by way of influencing expectations or by some other means, in reducing the rate of

wage inflation and the rate of change of the "domestic component" of some relevant price index, below the values that they would otherwise take, given the stance of monetary policy. This would mean that there would be, at a given exchange rate and given world prices for those goods entering into the "foreign" component of the price index, more real cash balances for the population to hold than would otherwise be the case. The advocate of controls hopes that the presence of such excess money balances in the economy would serve to keep up the level of real aggregate demand, and hence lead to a higher than otherwise level of real income and employment. The sceptic, such as myself, notes that their effect might well be felt mainly in the foreign exchange market, driving up the value of foreign currency, hence ensuring that the foreign component of the price index would be higher than otherwise.

If this latter effect was predominant, then, overall the price inflation rate would be pretty much what it would have been in the absence of controls, although the structure of relative prices would be different. In particular, real wages would be lowered, and any expectations about price inflation engendered by the introduction of controls would be disappointed. Something very much like this seems to have happened during the 1973-74 experiment with wage and price controls in the United Kingdom (see Laidler 1976 for a fuller discussion), while Canada had a similar experience with controls, albeit in a much less dramatic and socially divisive way in 1975-77. (On the Canadian evidence see Fortin and Newton 1981.) In both cases controls seem to have amounted to policies to control real wages rather than inflation.

There is always the possibility that, next time around, it would be domestic output that would absorb excess cash balances. One cannot argue that an "effective" wage and price control programme is out of the question. Currently fashionable proposals for one form or another of tax-based incomes policies do nothing to meet this issue though, for the innovative element in such proposals concerns the way in which controls will be made to affect wages and domestic prices in the first place. I am suggesting here that the main case against controls does not lie in the difficulty of enforcing them in those areas where it is conceivable that they might work, but in the impossibility of controlling the behaviour of the overall price index in an open economy with a flexible exchange rate. Only if output and employment react more rapidly to variations in the quantity of money balances in the economy than does the foreign exchange market would there seem to be any hope of avoiding this problem. It is because I find such a possibility inconceivable that I remain sceptical about the desirability of using wage and price controls to bolster monetary contraction in the control of inflation.

Now it should be clear that the main burden of my objection to using wage and price controls is not an ideological one, but rests instead on a judgment that they would not in fact achieve the end for which they might be used, namely reducing the unemployment that one would expect to accompany a gradualist approach to the control of inflation. However, there are other measures that might be used to ease the difficulties of the transition to a lower inflation rate. To begin with, if unemployment on a larger than usual scale is going to be the consequence of monetary

contraction, then there is must to be said in favour of policies designed to ease the lot of the unemployed. If the authorities are going to undertake a policy that will have its adverse effects concentrated on a relatively small proportion of the population, and that is what undertaking a policy, one of whose predictable consequences is unemployment, amounts to, then it would seem only just to ensure that those who bear the brunt of the policy suffer as little as possible.

There is a strong case to be made along these lines, but there is a problem with it too that must be faced. The frictional and structural factors that underly the economy's natural unemployment rate arise, in part at least, from workers taking time to acquire new skills and to find new jobs when they become unemployed. The higher is their living standard while not working, the more careful would one expect them to be about selecting a new job, and hence the longer they will take about it. This is not to say that the unemployed are shiftless, nor is it to argue for making unemployment an unpleasant situation. However, it is to say that the higher the level of unemployment benefits, the higher is likely to be the level of unemployment. This is not just a matter of a priori speculation. We do in fact have a fair amount of empirical evidence about the effects of unemployment benefit variations on the unemployment rate. (See, for example, Grubel and Walker 1978.) However, this evidence is not cited here in order to make a case that unemployment benefits ought, after all, be fixed at low levels when an anti-inflation programme is being designed. It would be foolhardy, in the current state of knowledge, to

speculate as to whether we currently have too much or too little frictional unemployment. However, the effect of generous unemployment benefits on the natural unemployment rate is nevertheless a factor that the policy maker must take account of in deciding upon their appropriate level and structure. The reader should note, though, that policies designed to increase labour mobility which I have discussed earlier, are available to offset these effects. The authorities do not have to await the arrival of price stability to implement such policies.

Of course, one way of keeping the unemployment rate down during the transition to a lower inflation rate is to proceed slowly. That is what gradualism is about in the first place. However, inflation, as we know, also does social damage. This suggests that a useful accompaniment to a gradualist monetary policy might be measures designed to make it easier to live with inflation while the policy is working out. It is sometimes argued that such policies ought not to be introduced lest this in some way reduce the political will to come to grips with inflation. That would be all well and good if all it would take to defeat inflation was political will, with no unpleasant side effects, and if there was a feasible way of solving the problem quickly if only sufficient willpower was exerted. However, neither of these conditions hold, and it seems to me, therefore, that to eschew the use of policies for cutting down the adverse effects of inflation when they are available is quite pointless.

Some of the unpleasant effects of gradualism would be mitigated by

the spread of indexation. Where one of the contracting parties to an agreement is the government, as in matters of taxation and pension obligations, there is much to be said for enacting indexation as a matter of law. When it comes to private contracts, this perhaps is not necessary. The very operation of capital markets ensures that expectations about inflation come to be reflected in nominal interest rates, and so there is no need for any active policy in this regard. As to wage contracts, that surely must be left to the parties involved to decide. To the extent that the inclusion of cost of living adjustment clauses in wage bargains makes money wage inflation less rigid in the face of subsequent reductions in price inflation, it is to be encouraged, since this effect would tend to increase the speed at which inflation would be brought down by a given gradualist policy, and decrease the amount of unemployment that might accompany it. This consideration suggests that the authorities might encourage the use of such clauses, but hardly amounts to a case for making them in any way mandatory.

Moreover, it is important not to confuse indexation with a policy of guaranteeing that real wages never fall, and in practise there is a real danger of this happening, as the experience of the United Kingdom in 1975 or Australia over the 1975 - 1980 period shows. Wage indexation is a device for ensuring that, once a wage bargain is struck, its real consequences will be what the parties to it intended, not a device to prevent the parties to a bargain agreeing to a cut in real wages should the conditions prevailing in whatever industry they are involved in seem to require such a change. What form of indexation is appropriate in any

particular instance is not something that the outside observer can pronounce upon, and that is why the role of policy here should usually be the passive one of not preventing indexation, rather than the active one of attempting to enforce it.

VII

THE PROBLEM OF MONETARY CONTROL

The process of reducing the rate of monetary expansion slowly over time in order to bring inflation under control is every bit as much a proposal to fine tune the money supply as is the proposal to keep money on a non-inflationary growth path once the inflation rate is at a satisfactory level. Thus, the advocate of gradualism must say something about the means whereby such fine tuning is to be implemented. Broadly speaking, two methods of monetary control are available. The first involves the Central Bank in manipulating interest rates, and the second the reserve base of the banking system.

The rationale for interest rate control can be put as follows. As a practical matter, it is possible to estimate a "demand for money" function for the economy, using, shall we say, quarterly or even monthly data. Over such a short time period, the values of such arguments of that function as real income and the price level are in effect predetermined. The same may be said of the lagged values of any variables that might appear in the relationship. Some representative interest rate is also an argument in the demand for money function. Thus, in order to hit a given target for the money supply within a quarter, the Central Bank needs only

to calculate, given the values of the predetermined variables, the value of the interest rate which is compatible with its money supply target being demanded, set the rate at that level, and then leave it to the economy to move along its demand for money function. The econometric relationship underlying such an exercise are of course subject to error, but within reasonable limits, or so it is claimed, the rate of monetary expansion can be controlled by these means.

There are a number of problems with the procedures I have just outlined. First of all, as I have argued elsewhere, the relationship upon which such a method of monetary control is based is not really a structural demand for money function at all, but a peculiar and ill understood mixture of a long run demand for money function and the reduced form of whatever model describes the portfolio behaviour of the private sector and banking system. (See Laidler 1980.) Because it is so ill understood, such a relationship might prove less reliable in practice as a basis for gradualist policy than the results of empirical studies, carried out on data generated when the Central Bank was not implementing such a policy, might lead one to believe.

An absolutely crucial component of the case for using interest rate control methods is the existence of a well determined, and relatively elastic demand relationship between the behaviour of the monetary aggregate chosen for control and the rate of interest. However, it is an elementary result for macroeconomics that, the more interest elastic is the demand for money, the less built in stability does one get from

adopting a monetary rule. The choice of interest rate control methods naturally then leads to the choice as the centrepiece of policy, of a narrow money aggregate whose velocity varies relatively much with interest rates. Furthermore the choice of such a narrow aggregate maximises the chances of institutional change in the Banking System undermining the effects of monetary policy. When a broad aggregate is to be controlled, there is a good chance that such change will alter the composition of the "money supply" leaving the significance of the aggregate unchanged. In the case of a narrow aggregate, such change is more likely to result in the evolution of monetary assets outside the scope of the chosen aggregate that will, therefore, change its economic meaning. (On these issues see Courchene 1976, Howitt and Laidler 1979, and Laidler 1981.)

A Central Bank that was determined to pursue a monetary target single-mindedly, and was in a position to resist any political pressure that might be brought upon it to do otherwise, might nevertheless be able to get away with interest rate control methods. For example, after a shaky start, the Bank of Canada while using these methods has managed to keep within its money supply growth targets for over three years now. However, it is vulnerable to the criticism that the aggregate it has sought to manipulate has been sufficiently narrow as to be only a mildly efficient stabiliser of the inflation rate. Even so, the Bank of Canada has, from time to time, found itself under acute political pressure as a result the behaviour of interest rates and the exchange rate.

Other Central Banks which have attempted to use interest control

methods have shown themselves less willing or, perhaps because of political pressures, less able to see those variables fluctuate enough to keep the money supply on track. (See Summer 1980.) In practise they have not delivered a slow but steady contraction of the rate of growth of whatever monetary aggregate they have set targets for. The behaviour of the Federal Reserve System, at least until late 1979, illustrates this proposition well enough, as does that of the Bank of England. The latter institution's problems have been compounded by the fact that it has tried to control the growth rate of a broad monetary aggregate, many of whose components bear interest at competitive market rates, by manipulating interest rates on assets that are highly substitutable for "money". It is pointless here to speculate on how it managed to get itself involved in attempting this impossible task.

A key political problem with interest rate control is that when it is used the interest rate itself tends to take on the attributes of a policy target in its own right. That has happened in the United States and particularly in Britain. When this happens, and if the rate of money creation nevertheless retains some importance for the authorities along side the interest rate, they are left with little option but to try to control the rate of money creation by way of manipulating public sector borrowing. Given the value of the interest rate, there is a certain amount of public debt that the private sector will absorb over any time period. The difference between this amount and the overall borrowing requirement of the public sector determines how much the authorities must then borrow from the Central Bank, and therefore determines the size of public sector borrowing's contribution to monetary expansion. Hence if public sector

borrowing can be controlled, then so can the money supply. This line of reasoning explains why, in Britain in particular, the government has come to lay heavy emphasis on the control the public sector borrowing requirement as a key component of monetary policy. A reluctance on the authorities' part to tolerate interest rates fluctuations has led to the government budget constraint imposing a much stronger linkage between fiscal and monetary policy than is strictly necessary. The fact that public sector borrowing is hard to predict, let alone control, when much government expenditure and revenue fluctuates according to statutory obligations that cannot quickly be changed, explains why, when such a linkage is imposed, it is inevitably the conduct of monetary policy that suffers.

For all the above reasons, then, interest rate control, whatever may be its merits in principle, is unlikely to be an effective means of carrying out a "gradualist" monetary policy in practise. That is why the case for gradualism is so closely related to advocacy of "base control" methods for the implementation of monetary policy. The phrase "base control" is in some measure ambiguous. Some people use it to refer to a policy regime under which rules are set for the rate of growth of the monetary base instead of some broader monetary aggregate, and others use it to refer to a regime under which the monetary authorities manipulate the base, over which they can if they wish have direct control, in order to bring about a particular growth rate for some broader aggregate. Here I am using the phrase in the second sense.

There is nothing mysterious about the techniques of base control. They exploit the fact that there can exist a stable "multiplier" relationship between the monetary base - the cash liabilities of the Central Bank - and a more broadly defined money supply concept. How stable such a multiplier will be does of course depend upon some factors beyond the monetary authorities' direct control, for example the preferences of the non-bank public vis-a-vis holding money in currency as opposed to Commercial Bank deposits, as well as the banking system's demand for excess (that is greater than required, or conventionally held) reserves. Also, the tightness of the Central Bank's degree of control over the base will depend upon the conventions it adopts to govern the granting of rediscount facilities to Commercial Banks that find themselves short of cash. However, it is within the discretion of the Central Bank to alter these conventions and it should be obvious that the less automatic is the Commercial Banks' access to the discount window, the easier is it for the Central Bank to control the size of the monetary base.

Other factors that might influence the multiplier relationship are also susceptible to the control of the monetary authorities. Differential reserve requirements between different types of deposits, such as exist in Canada and the United States, or between different types of Banks, such as exist in the United States, or a basic cash ratio that is so small that variations in the Commercial Banks' desired excess reserves come to dominate the multiplier, as is the case in Britain, can all lead to undue slippage between the monetary base and the money supply. However, these factors can be dealt with by way of administrative changes. There

is no reason why there cannot be a uniform reserve requirement against all types of deposits that make up the monetary aggregate that the authorities wish to control. If the Central Bank were to pay interest to Commercial Banks on their reserve holdings, the main grounds on which the latter might object to such reserve requirements, namely that reserve requirements are a form of differential taxation on banks, would be removed.

Of course, I am not suggesting that changes such as I am advocating here would be politically easy to implement in all times and places. Nor, if a Central Bank switched to a system of base control over a monetary aggregate after a history of stabilising interest rates, would agents in private markets find the transition a straightforward matter. When a Central Bank ceases to step in to iron out day by day interest rate fluctuations, it takes private agents a while to learn to operate in the changed environment. Interest rates are volatile until private sector institutions learn how to take profitable advantage of such volatility and thereby compete it out of the system. The history of the United States in the wake of the Federal Reserves System's attempt to move to base control in the autumn of 1979 bears witness to the potential seriousness of such problems.

Now all this is to say that, if the authorities of a particular country opt for a gradualist policy, they should not take it for granted that they can implement such a policy without overhauling their monetary institutions to a greater or lesser extent. Under the Bretton Woods

system, and before that under the gold standard, interest rates were the key variables in the conduct of domestic monetary policy. It was by manipulating interest rates that Central Banks induced the kind of international capital market responses that enabled them to maintain their exchange rates fixed. Furthermore, under a Keynesian policy regime, monetary policy is subordinated to fiscal policy, and the main job of the Central Bank is seen as ensuring that the interest rate effects of financing fiscal deficits do not offset whatever influence fiscal policy is intended to have. Here again it is the interest rate rather than some monetary aggregate that is the important policy variable. The fact is that the monetarist proposal to put control of a monetary aggregate at the centre of policy is a radically new one as far as the behaviour of Central Banks is concerned. It should not therefore surprise anyone that the adoption of such a policy requires that monetary institutions be overhauled. The policy failures that have been experienced in so many countries over the last few years, not least in Britain and the United States where monetary targets have been more honoured in the breach than in the attainment, bear eloquent witness to the troubles that can be encountered if attempts are made to implement a monetarist policy in a Keynesian policy environment. Hence the overhaul is well worth carrying out.

VIII

CONCLUDING COMMENT

This essay has been a long one, but its basic theme is easily summed up: the use of monetary policy to establish and maintain control over the inflation rate is a complex matter, not because the economics that underlies such a policy regime is particularly difficult to grasp, but because of the way in which such a use of monetary policy impinges upon governments' ability to attain other policy goals, and to use other policy tools. A government that sets targets for the rate of growth of the money supply cannot also set targets for the exchange rate and interest rates, and it cannot also use monetary policy to manipulate the unemployment rate. Moreover, though it is still left with a good deal of freedom as far as fiscal policy is concerned, once money growth rate targets are set, its decisions about the financing of government expenditure are in large measure pre-empted. Also, in order to create a situation in which monetary growth targets are attainable in practise, institutional reforms in the financial sector of the economy may have to be undertaken. And none of this is to mention what is perhaps the most important of all problems with using monetary policy to cope with inflation, namely the fact that it undoubtedly creates unemployment as part of the transmission mechanism whereby it has its effects.

The above list of problems is formidable, and perhaps goes a long way towards explaining why the use of monetary policy to combat inflation has in practise been erratic and half-hearted in so many countries in recent years. Nevertheless, I find it inconceivable that inflation is

going to be brought under control anywhere without monetary policy being deployed. Thus, the purpose of this essay has been, not to advance arguments against its use, but to state in a clearcut fashion just what difficulties are likely to be encountered when it is used, in the hope that the old adage "forewarned is forearmed" might be of some relevance to the design of successful anti-inflation policies.

REFERENCES

- Bodkin, R. (1981) "The Challenge of Inflation and Unemployment in Canada during the 1980s: Would a Tax Based Incomes Policy Help".
Canadian Public Policy (forthcoming).
- Bordo, M. and Jonung, L. (1978) "The Long Run Behaviour of Income Velocity of Causation: A Cross Country Composition of Five Advanced Countries 1870-1975". Paper Presented at European Econometric Society Meetings (mimeo).
- Courchene, T. J. (1977) "The Strategy of Gradualism". Montreal, C. D. Howe Research Institute.
- Dornbusch, R. (1976) "Expectational and Exchange Rate Dynamics". Journal of Political Economy, 84, 1161-1176.
- Fortin, P. and Newton, K. (1980) "Labour Market Tightness and Wage Inflation in Canada". University of Laval (mimeo).
- Friedman, M. (1960) A Program for Monetary Stability. New York, Fordham University Press.
- Grubel, H. and Walker, M. (eds.) (1978) Unemployment Insurance. Vancouver, B.C., The Fraser Institute.
- Howitt, P. W., and Laidler, D. (1979) "Recent Canadian Monetary Policy, A Critique" in Purvis, D. and Wirick R. Proceedings of Queen's University Conference on Economic Policy, Queen's University (mimeo).
- Laidler, D. (1976) The Demand for Money-Theories and Evidence (2nd ed.) T. Y. Crowell, New York.
- _____ (1976) "Inflation in Britain, a Monetarist Perspective".
American Economic Review, (66), September, 485-500.

- Laidler, D. (1980) "The Demand for Money in the United States Yet Again" in Brunner, K., and Meltzer, A. H. (Eds.), The State of Macroeconomics Carnegie-Rochester Conference Series, Vol. XII, Amsterdam, North Holland.
- _____ (1981) "Monetarism - An Interpretation and an Assessment". Economic Journal (81) March.
- _____ and Parkin, J. M. (1975) "Inflation - A Survey". Economic Journal, 75, December, 741-809.
- Lipsey, R. G. (1979) "World Inflation". Economic Record, December, 283-296.
- Lucas, R. E. Jrn. (1976) "Econometric Policy Evaluation" in Brunner, K., and Meltzer, A. (Eds.), The Phillips Curve and the Labour Market Carnegie-Rochester Conference Series, Vol. I, Amsterdam, North Holland.
- Sargent, T., and Wallace, N. (1975) "Rational Expectations, the Optimal Monetary Instrument and the Optimal Money Supply Rule". Journal of Political Economy, 83, April, 241-254.
- Sumner, M. (1980) "The Operation of Monetary Targets" in Brunner, K., and Meltzer, A. (Eds.), Monetary Institutions and the Policy Process, Carnegie-Rochester Conference Series, Vol. 13, Amsterdam, North Holland.
- Tobin, J. (1980) "Stabilization Policy Ten Years After". Brookings Papers on Economic Activity (1), 19-71.
- Wirick, R. (1981) "The Battle Against Inflation - Gradualism and Its Critics". Canadian Public Policy, forthcoming.
- Yeager, L. (Ed.) (1962) In Search of Monetary Constitution, Cambridge, Mass., Harvard University Press.

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