1980

Inflation and Unemployment in an Open Economy - A Monetarist View

David Laidler

CENTRE FOR THE STUDY OF INTERNATIONAL ECONOMIC RELATIONS

WORKING PAPER NO. 8014

INFLATION AND UNEMPLOYMENT IN AN OPEN ECONOMY - A MONETARIST VIEW

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
UNIVERSITY OF WESTERN ONTARIO
LONDON, CANADA
N6A 5C2

20016

INFLATION AND UNEMPLOYMENT IN AN OPEN ECONOMY - A MONETARIST VIEW

by

David Laidler

A paper delivered at the University of Calgary, on April 24, 1980 in that institution's Lecture Series "The Challenge of Inflation and Unemployment". It draws heavily on research carried out over the last three years with the aid of a grant from the SSHRC whose assistance is therefore gratefully acknowledged.

I INTRODUCTION

The notion of an inverse relationship between inflation and unemployment was a commonplace of macroeconomic policy discussions even before Brown (1955), Phillips (1958) and Lipsey (1960) presented evidence of the existence of an apparently empirically stable functional relationship between the two variables, and provided us with theoretical arguments about why we should expect it to exist. Even today, when it is universally agreed that the original "Phillips curve" has been discredited both by empirical evidence and by advances in macroeconomic theory, the idea persists in policy debates that the nature of the interaction of inflation and unemployment rates in the real world is such as to present policy makers with a dilemma. It is argued that if, in order to control inflation, resort is had to restrictive fiscal and monetary policy, the benefits that such policies might bring on the inflation front must be weighed against the adverse effects that they are likely to have on rates of real output and unemployment. Such "orthodox" anti-inflation policies are frequently characterised as attempts to control inflation by increasing unemployment, and it is understandable therefore that "unorthodox" policies of one sort or another, that might enable inflation to be reduced without having adverse effects on unemployment, find many advocates.

In this essay I shall first of all discuss the nature of inflation-unemployment interaction in order to establish the extent to which it is true to say that attempts to reduce inflation by aggregate demand management policies involve using unemployment to control inflation and I will conclude that there is an important element of truth to this contention. I will then consider what policy implications might follow from this conclusion for the conduct of policy in an open economy such as Canada.

II INFLATION-UNEMPLOYMENT INTERACTION - AN OVERVIEW OF THE PROBLEM

Although I shall have a good deal to say later about matters related to the openness of the economy, initially it will be helpful to set these aside while we focus on the nature of inflation-unemployment interaction per se. The theory underlying the original Phillips relationship, as set out by Lipsey (1960), was extremely simple. It amounted to the observation that, in conditions of excess demand for labour, the price of labour might be expected to rise, and in conditions of excess supply, to fall. The relevant price was identified as some index or other of money wages, while the unemployment rate was treated as an inverse proxy for the excess demand for labour. This theory of the interaction of wage inflation and unemployment was transformed into one dealing with price inflation by the simple expedient of postulating that prices were closely related to money wages, either by way of some form or other of a mark-up pricing, or by mechanisms associated with the pricing behaviour of profit maximising competitive firms.

As I have already noted, this model of inflation-unemployment interaction has long been discredited, not just by empirical evidence but also by theoretical arguments: instead of the Phillips curve as depicted in figure 1a, we now have the "expectations augmented" Phillips curve as depicted in figure 1b. There are a number of not always mutually compatible ways of deriving the latter relationship, but for present purposes differences of opinion on the underlying microeconomics of the function are of secondary importance, and those who find the following line of reasoning unpalatable should not reject the arguments that come later for that reason.[1]

Lipsey and Phillips treated the money wage rate as the price that adjusted to clear the market for labour. Although wage contracts are normally set in money terms, it is reasonable to suppose that both suppliers and demanders are trying to achieve real wage goals when they bargain about money wages. What seems an appropriate money wage to suppliers of labour will depend upon what they expect to happen to the money prices of the goods they intend to buy over the period during which they receive that money wage. On the other hand, expectations about the money prices that output is expected to fetch will influence firms' views about the money wages that they are willing to pay out. As is well known, the upshot of such arguments is that instead of predicting money wage inflation to be zero in a "fully employed" economy, with prices therefore falling at the rate of growth of labour productivity, as did Phillips and Lipsey, we now predict that real wages will grow at the rate of productivity change, but profess ourselves unable to say anything about the absolute rates of money wage and price inflation that will rule in such a circumstance; we go on to predict that a condition of excess supply in the economy is to be associated, not with falling money wages and prices, but with rates of wage and price inflation that are low relative to expectations, and that a condition of excess demand will lead not necessarily to positive inflation, but to rates of wage and price inflation that are high relative to expectations. Moreover, according to this theory, only in a situation of zero excess demand, where actual and expected inflation rates are equal, will the inflation rate remain constant over time; in any other situation, even with no change in the pressure of demand, the inflation rate will change over time as expectations come to be revised in the light of experience.[2]

Now the arguments sketched out in the last couple of paragraphs present the essential characteristics of what is now close to being a consensus position among macroeconomists about the basic nature of inflation-unemployment interaction, and they enable us to say quite a lot about the extent to which policy makers who are concerned about both variables do in fact face a dilemma in choosing among unpalatable alternatives. Consider first of all a situation in which there is zero excess demand in the economy, and the actual and expected inflation rates are equal to one another. In this state of affairs no one would expect the unemployment rate to be zero. A "monetarist" would refer to a "natural" unemployment rate, and a "Keynesian" to a "minimum feasible" unemployment rate that would exist even in the absence of excess supply in the economy as a whole, and each would mean that unemployment which results from the whole array of causes that used to be called "frictional" and "structural". The natural unemployment rate is often thought of as being some sort of irreducable minimum, but it should not be. Although some of the factors that might be thought to influence it, such as for example the age structure of the labour force, or that complex of social habits that determine the extent to which married women are or are not members of the labour force, are only remotely related to economic policy, many are directly amenable to policy measures, and some quite quickly at that. Thus, one effect of minimum wage legislation is to reduce the employment prospects of the unskilled and inexperienced, while the influence on measured unemployment of both the levels of unemployment benefits and the terms on which they are available is well documented.[3]

I cite these two factors because they enable us to illustrate a number of points that are often overlooked in discussions of policies towards unemployment. First, their existence draws attention to the fact that

restrictive monetary and fiscal measures undertaken to combat inflation are not the only policies that can induce higher unemployment. The argument that such orthodox anti-inflation policies might cause unemployment to rise is no more or less an argument against their implementation than it is against minimum wage legislation or the payment of generous unemployment benefits. One may legitimately favour the latter for other reasons despite any influence they might have on the unemployment rate and the same may be said for restrictive monetary and fiscal policy.

Moreover, it is not always the case that an increase in measured unemployment involves an increase in social distress. An increase in unemployment benefits improves the lot of the unemployed, and enables them to be a little more careful and patient while searching for a new job. This is why increases in unemployment benefits increase measured unemployment; but note that the welfare of the unemployed increases at the same time. Furthermore, it would be a bold economist who was willing, in the current state of knowledge, to hazard a guess as to what level and structure of unemployment benefit rates would promote a rate of labour turnover and intensity of job search that was socially "optimal", and there can therefore be no presumption that an increase in measured unemployment as a result of increasing unemployment benefits is undesirable. It is all too often taken for granted in policy discussions that the measured unemployment rate is an unambiguous index of social distress, and yet the foregoing arguments show that it is nothing of the sort. On the contrary, it is an ill understood indicator that is extremely difficult to interpret.

Although the analysis underlying the expectations augmented Phillips curve tells us that the economy will operate at the "natural" unemployment rate at any fully anticipated rate of inflation, this does <u>not</u> mean that the natural unemployment rate is independent of the inflation rate. The natural

unemployment rate is often assumed to be constant in analyses of inflation-unemployment interaction, but there is no logical necessity for this to be the case. To see why, consider first the extreme case of an economy in which there are no costs of price adjustment, perfect foresight about the time paths of all prices, and no friction involved in transferring resources from one use to another. In such an economy inflation would always be fully anticipated, and unemployment would always be at a natural rate of zero. However, as the once fashionable "money and growth models" literature clearly established, variations in the inflation rate could still influence real variables such as the capital labour ratio and the level of real output in such a perfectly smoothly operating competitive economy. Thus, there should be no general presumption that variations in a fully anticipated rate of inflation are a matter of indifference even in such an extreme special case as this one.[4]

It is precisely because the price mechanism does not work in the frictionless manner just postulated that we would expect to find positive measured unemployment coexisting with zero excess demand even in an economy characterised by overall anticipated stability of the general price level. The price level is after all an index number: relative prices do change and at discrete intervals rather than continuously; agents do take time to learn about such changes and to respond to them; some do make erroneous decisions about how to allocate the resources at their disposal, either because they are misinformed about the actual structure of relative prices, or because they misread the longer run significance of current prices; and so on. It is because of factors such as these, the microeconomic analysis of which is far from fully developed, that we expect there to exist a positive natural unemployment rate; but it is far from obvious that the degree of difficulty that agents have in interpreting relative price signals, and the speed and appropriateness of their response to them, will be independent of the overall

rate of change of the price index even if the latter aggregate variable can accurately be measured and predicted over whatever time horizon is relevant. On the contrary, I would conjecture that, within the range that is relevant to the inflationary problems of countries such as Canada, variability of relative prices probably increases with inflation. If that is the case, one might expect higher anticipated rates of inflation to be associated with more relative price uncertainty, and hence more market frictions, not least labour-market frictions.

The foregoing arguments amount to a conjecture that the natural unemployment rate is positively correlated with the inflation rate. If that conjecture is true, then in the long run, the trade-off between inflation and unemployment is a positive one such as I have depicted in figure 2, and reducing the inflation rate might be a means of also reducing the unemployment rate.[5] However, even if this conjecture is true, it by no means tells the whole story about inflation-unemployment interaction, nor even what most people would regard as the most relevant part of the story. That arises not in the context of long run considerations discussed so far, but when we turn to short run analysis. We have seen that any rate of inflation is compatible with zero excess demand in the economy as a whole provided that the rate of inflation in question is anticipated. If a currently prevailing rate of inflation is thought to be too high by those responsible for policy, then it can be reduced either by policies designed to create excess supply, or by policies designed to reduce the anticipated rate of inflation, or by some combination of the two. Inasmuch as contractionary monetary and fiscal policies affect the rate of inflation by creating excess supply in the economy, they will certainly create extra unemployment while reducing inflation. However two points need to be made about this way of putting things.

First, the creation of excess supply in the economy involves unemployment

rising above its natural rate, but this is only the same thing as the generation of an increase in the unemployment rate if policy measures to decrease the natural unemployment rate are not simultaneously undertaken, and if a reduction in the anticipated inflation rate does not itself cause unemployment to fall. For this reason it is somewhat misleading to refer to orthodox anti-inflation policies as if they amounted to no more than using high unemployment to fight inflation. Second, and more important, the effect of generating excess supply in the economy is to reduce inflation below its anticipated level. If anticipations respond to experience, then once a lower inflation rate has been achieved, progressively less and less excess supply will be required to maintain it over time. In the limit, when a new lower inflation rate has become completely anticipated, excess supply can return to zero and unemployment to its natural rate. Thus the price that must be paid in terms of unemployment in order to achieve and sustain a lower inflation rate is at worst a temporary one. One should not take too much comfort from this proposition however, because, as a practical matter, "temporary" undoubtedly refers to a time period better measured in years that in months, but it is worth explicitly noting that just how long is the period in question is open to policy choice. An economy that is willing to take "a long time" about getting its inflation rate down can expect to do so with a lower level of excess supply than one which seeks to get things done "quickly". The nature of the inflation-unemployment trade-off is, as Phelps noted in what was probably the first published paper to deal with the expectations augmented Phillips curve (Phelps 1967), essentially intertemporal.

Words like "temporary", "a long time" and "quickly" are infuriatingly vague, and enough has been said already for the reader to see why they are so

difficult to quantify: how long it will take for a given degree of excess supply in the economy to reduce the inflation rate by a given amount depends not just upon the speed with which money wages and prices respond to the disequilibrium in question, but also upon the speed with which expectations about inflation respond to experience of inflation, and also to other stimuli, including information about the kind of policies being utilised to bring the inflation rate under control. It is precisely because it is so difficult to make quantitative predictions about the way in which expectations evolve over time that we find it equally difficult to give quantitative content to the notion of a "temporary" trade-off between inflation and the deviation of unemployment from its natural level. There is more that we can say about these matters, but it is at this point that factors associated with the openness of the economy come into the picture. We now turn, therefore, to an explicit discussion of these issues.

III ASPECTS OF ANTI-INFLATION POLICY IN AN OPEN ECONOMY

The Phillips curve, even in its expectations augmented form, is in no sense a theory of inflation in and of itself. Rather it is a component that can be used in a variety of models of the inflationary process, and depending upon one's view of the source of fluctuations in excess demand in the economy, and on the origins of inflation expectations, these models can encompass a broad range of opinion. The analysis that follows is based on what might loosely be called a "monetarist" view of these matters, to the extent that it places particular emphasis on the role of the rate of nominal monetary expansion in the generation of inflation. I make no apology for taking this stance, but readers who do not find it palatable will, I hope, not give up at

this point, because I believe that they will find much in what follows to be independent of one's precise outlook on this issue.

If the rate of monetary expansion is the key variable in controlling inflation, then it follows immediately there is little point talking about how to conduct an anti-inflation policy if those in charge of that policy are unable to have their way with the behaviour of the nominal money supply. For an economy as open to foreign trade and as fully integrated into international capital markets as is Canada, this is a point of vital importance, because it means that the choice of exchange rate regime determines whether or not inflation can be treated as a domestic policy problem at all. A commitment to maintain a fixed exchange rate on any currency, or group of currencies amounts to an undertaking to buy or sell these assets in unlimited amounts at a given price in exchange for domestic money. Such a commitment just as surely puts the money supply beyond the control of the domestic authorities as does a commitment to buy and sell domestic bonds at a fixed price in the closed economy case. Moreover, although one can conceive of situations under which the authorities can operate in domestic bond markets to "sterilise" the effects of balance of payments flows on the domestic money supply, their capacity to do this must rest on some degree of capital immobility in international markets. Under a fixed exchange rate, the more closely integrated the domestic capital market is into the world market, the less scope is there for variations in the interest differential between domestic and foreign markets and the less room is there for sterilisation operations to have even a short term effect.

For a country such as Canada to adopt a fixed exchange rate involves making its money supply just as much an endogenous variable as is the money

supply of Alberta or of any other province. The "monetarist" approach to the explanation of inflation under fixed exchange rates is to argue that the price level of an open economy is best thought of as being determined at the level of the larger currency union of which it forms a part, just as the behaviour of the Alberta price level is largely determined at the level of the Canadian economy as a whole. This does not rule out the possibility of local factors occasionally making their effects felt on local prices, but it is to argue that these effects will be essentially transitory in nature. One can readily state this view in terms of the expectations augmented Phillips curve by arguing that, under a fixed exchange rate the expected rate of inflation is dominated by the behaviour of prices abroad and is therefore exogenous to the domestic economy. Figure 3 depicts what is involved here. One can also tell what amounts to the same story along "Scandinavian" lines if one wishes, arguing that the prices of tradable goods will in such circumstances be taken from world markets, and that the behaviour of money wages in response to changes in the prices of the tradables that are both produced and consumed domestically provides the channel whereby outside effects are transmitted to the "sheltered" sector which produces goods and services not traded on world markets.

The analysis outlined in the last few paragraphs is of more than purely academic interest to a Canadian audience at the moment, because although we are currently operating a flexible exchange rate, some economists (see e.g. Barber and McCallum (1980)), being impatient with the persistence of high inflation and high unemployment, are proposing a radically different policy package to the one currently in place, and a prominent component of that package is the establishment of a pegged exchange rate on the United States dollar at a level lower than that currently prevailing. There is nothing

particularly new about such a proposal--those who remember British policy debates of the 1950s and 1960s about the desirability of using an undervalued currency to generate "export-led growth" will recognise it readily enough, but it is even more dangerous in the context of contemporary Canada than it was in Britain twenty years ago.

It should go without saying that pegging an exchange rate in and of itself is not inflationary. Whether it is or not depends in the first instance upon what is happening to the purchasing power of the currency against which the exchange rate is fixed. However, in the present instance, the purchasing power of the United States dollar is depreciating at a rate that is well into double digits. Unless there has been a remarkable shortening of the time lags that seem to be inherent in the inflationary process in that economy, it is hard to see how we could expect to see any substantial fall in the American inflation rate in the next eighteen months even if current policies are persevered with, which can hardly be taken for granted. Thus, I do not see how Canada could maintain a fixed exchange rate on the United States at present without ultimately importing a renewed bout of inflationary pressure. That would be my judgement even if it was proposed to peg the exchange rate at its current level, but if it is deliberately set lower, then we have another source of inflationary pressure--albeit shorter term in nature--to contend with.

If a devaluation is to give a country a "competitive edge" and hence help produce a sustained cut in unemployment, then domestic costs, including money wages, must not rise in its wake so as to cancel it out. Since the prices of imports and exportables undoubtedly will rise in such circumstances, this amounts to saying that the policy can only succeed if the labour force accepts a cut in real wages. If it is not willing to do so, then devaluation brings with it a "catch-up" in domestic money costs and prices, which while it wipes

out any "competitive edge" that might initially have been gained will also give an extra twist to inflation, over and above the effects already coming from the existence of a higher inflation rate abroad. This is not to argue that there are no circumstances under which the Canadian labour force might accept a cut in real wages, but it is to argue that an attempt to impose an otherwise unacceptable cut on them by way of a devaluation will be effective only temporarily unless they suffer from money illusion, a most unlikely possibility after a decade of high and fluctuating inflation.[6]

Of course, at this point in the argument wage and price controls may be invoked, and no one could deny that if an "effective" control scheme were devised and introduced, the sequence of events that I have just outlined would not happen: a tautology is after all necessarily true, and to say that a wage-price control scheme that was "effective" in holding down real wages in the circumstances I have outlined would succeed in holding down real wages is beyond doubt to state a tautology. Thus, to advocate devaluation, and the subsequent pegging of the exchange rate as a means of generating extra income and employment while relying on "effective" controls to hold down wages and prices domestically is not to propose a coherent policy package at all. It is to propose that concrete steps be taken to influence output and employment, while relying on wishful thinking to deal with inflation. Though historical parallels are never perfect, anyone advocating such a set of policies for Canada in 1980 should be asked to examine the history of the British economy between 1967 and 1969, to explain why just such a package failed then, and to set out arguments as to why that earlier experience is not relevant to the current case. In particular, he should be asked to explain how he intends to make wage and price controls "effective" in reducing real

wages, and in maintaining them at a lower level than market forces would in the long run dictate.

The implication of the last few paragraphs is straightforward. A *sine qua non* for Canada to be able to control her own inflation rate is the adoption of exchange rate flexibility, and this means much more than simply adopting a set of institutional arrangements whereby the rate is not automatically supported by Central Bank intervention in the foreign exchange market on a continuing basis. Canada had a flexible exchange rate in the latter sense in the 1950s and again in the early 1970s, but in each case the authorities made the exchange rate a target of policy. In doing so, they surrendered the ability to use monetary policy to pursue domestic targets just as surely as if the exchange rate had been formally pegged.[7] To adopt a flexible exchange rate means to devote monetary policy to domestic targets, and to be willing to permit the exchange rate to behave in any way that market forces might dictate in order to reconcile developments in the domestic economy with what might be happening abroad. There is nothing in exchange rate flexibility *per se* that will make inflation, or unemployment, or anything else for that matter, better or worse. Its adoption simply permits domestic monetary and fiscal policy to be deployed in order to influence domestic targets, and the freedom of action with which the authorities are thus endowed may be used or misused.

The proposition that exchange rate flexibility shelters the domestic economy from shocks that originate abroad is only partly true. It is worth noting explicitly--well known though it is already--that if the relative price of some widely consumed commodity, such as oil, rises on world markets, or if there is an important harvest failure somewhere in the world, to give but two examples, then a flexible exchange rate regime can do nothing one way or another to modify the impact of such changes on the domestic economy. Such events as these will affect both the level and distribution of real

income in the world economy, as well as within the domestic economy, and in doing so will create genuine and difficult problems for policy makers regardless of the exchange rate regime. The only degree of freedom that domestic policy makers get from adopting a flexible exchange rate is the ability to choose the long run value of domestic inflation rate. That is an important freedom, to be sure, but it still leaves a host of other important policy problems to be coped with by other means. Only to the extent that the achievement and maintenance of price level stability makes it easier to devise policies towards income distribution, resource allocation and such, does the adoption of exchange rate flexibility and the devotion of domestic monetary and fiscal policies to the pursuit of price stability help in getting to grips with them.

To say that a flexible exchange rate allows domestic policies towards the level of aggregate demand to be used to counter inflation suggests that in this respect a flexible exchange rate open economy might act "as if" it were closed and that the analysis of price output interaction to whose exposition the first substantive section of this paper was devoted becomes immediately relevant. As a first approximation that is true. Closed economy analysis does indeed give us some rough guide as to what could be accomplished here and at what cost, but, as we shall see, even under a flexible exchange rate, the openness of the economy does create important complications.

In a closed economy suffering from inflation: if that inflation was caused by monetary expansion; if everyone believed that to be the case; if the authorities announced that they were going to reduce the monetary expansion rate to a level compatible with price stability and maintain it there ever after; and if everyone believed the announcement and was free to act upon

that belief; then the expectations augmented Phillips curve would tell us that the expected and actual inflation rates would drop at once to zero with no side effects. Of course, to expect the foregoing list of conditions to hold in any actual economy would be absurd, but the list in question is nevertheless worth contemplating because it highlights just why it is that inflation is hard to bring under control without adverse side effects on unemployment. Though I would be prepared to defend the first condition as approximately correct, it would be hard to believe that any of the others are anywhere close to being met in the Canadian economy. The general public does not, on the whole, either understand or believe in a monetary theory of inflation, nor does it in general understand, or if it does understand it does not put implicit faith in, the policy announcements of the authorities. Even if the general public did do all these things, economic life would be impossible if all market arrangements had to be renewed every day, or month, or even year. People find it convenient to be bound at any time by a whole array of contractual arrangements that one way or another put severe limits on their ability to respond to new information as it becomes available. For all these reasons, monetary contraction impinges first upon real income and employment in any actual economy, and only later on inflation.

The reader will recognise here the essence of the case for "gradualism" in the pursuit of lower inflation rates.[8] The more slowly is policy applied, the longer is the public given to adapt its expectations to new experience, and to adapt its behaviour to the new information. Now such a gradualist policy was adopted in Canada five years ago, and it was explicitly adopted for very much the kind of reasons set out here. It is worth asking whether the policy in question has worked, and the first step in providing an answer here is surely to set out how the policy ought, in theory, to have worked.

I suspect that it is commonly thought that gradually to wind down the monetary expansion rate will cause persistent sluggishness on the real side of the economy, and a slow but steady reduction in the inflation rate over time, but even neglecting open economy complications, this is not the case. The correct prediction is that, in the wake of the adoption of such a policy, the economy will on average experience excess supply, and the inflation rate will on average fall, but "on average" is not the same as "persistently" or "steadily".

The fact is that when we attempt to model formally the case for "gradualism", based as it is on lags in agents' reaction to new information--whether out of slowness to learn from experience or out of slowness to adapt behaviour in the light of such learning is immaterial--we find that the resulting system is prone to generate cyclical behaviour on the part of its endogenous variables. In terms of figure 4, the economy follows a downward spiral, rather than a smooth loop. Thus, periods of falling unemployment and rising inflation are quite compatible, according to such a model with a general long run lowering of the inflation rate.[9] Of course it is, in principle, possible to manipulate monetary and fiscal policy so as to maintain a perpetual state of mild excess supply in the economy and thus cause a steady reduction in the inflation rate, but in order to design such a policy, precise knowledge of the lag structure of the economy would be needed. It would in fact amount to a sophisticated form of fine tuning, and would hardly therefore appeal to an advocate of gradualism, whose views about the proper conduct of policy are based on the belief that our knowledge of the structure of the economy, and the way in which it might evolve over time, is inherently too fragile to make any but the crudest policy programmes feasible. Thus, even in a closed economy, a gradualist policy ought not to be expected to result in a steady

reduction in the inflation rate, but rather in its following a cyclical path about a slowly declining average rate.

Even if we set aside the practically important effects of real shocks originating abroad, open economy considerations complicate the foregoing analysis in other ways. It is true that the same "law of one price", which under a fixed exchange rate regime ensures that the domestic inflation rate is determined abroad, implies that as domestic prices adjust in response to domestic policies, so the exchange rate will move in order to offset any influence that this might otherwise have on the real terms of trade. However this prediction, which would tend to make one think that a flexible rate economy would behave "as if" it were closed, is of limited relevance. It is about the interrelationship between domestic prices, world prices and the exchange rate in conditions of long run equilibrium, while the whole point of undertaking a gradualist policy is to move the economy slowly from one long run equilibrium to another. Moreover, and even more important, there is no reason to suppose that, while a particular small open economy is experimenting with gradualism, the rest of the world will obligingly remain in long run equilibrium. A glance at the behaviour of the United States economy over the last few years will provide ample evidence of the relevance of this observation.

If the rest of the world did remain in equilibrium there is some reason to believe that anti-inflation policy might work more speedily in a flexible rate open economy than in a closed economy. This is because the fundamental impulse for the transmission of conventional policy is a condition of excess demand for money. In a closed economy this excess demand impinges heavily on the labour market, where pricing behaviour is notoriously sluggish, with

the result that its initial effect is to create unemployment rather than alter the course of money wages. In an open economy, this effect is still present, of course, but in this case an excess demand for money also impinges on the foreign exchange market. Here there is a great deal of price flexibility, and to the extent that exchange rate changes are rapidly reflected in the domestic prices of tradable goods, we require less unemployment to generate a given fall off in the inflation rate.[10] The precondition that the rest of the world be in equilibrium is an important one here, and to consider what might happen if this assumption were dropped could lead us into a lengthy taxonomy were we to consider the wide range of possible disequilibria that might exist. However, it will suffice to consider the type of disequilibrium now emerging in the United States, and the way in which it seems to be impinging on Canada, to illustrate the important complications involved.

The last few years have seen a steady acceleration of inflation in the United States. Indeed, since 1976, the inflation rate there has more than doubled. However, the United States monetary authorities have now instituted an anti-inflation policy of their own, generating in the process a considerable excess demand for money in the United States. This naturally puts upward pressure on United States exchange rates against all currencies, including the Canadian dollar, an effect which helps the United States authorities, but creates problems in Canada. Monetary disequilibrium abroad of the type we are describing has real side effects which a flexible exchange rate regime cannot offset, and which have been all too evident recently.

Although the underlying pattern of inflation rates between the two countries, if it is sustained, would require the Canadian dollar to appreciate, the shorter run effect of contractionary United States policy has been to put downward pressure on the value of the Canadian dollar. An exchange depreciation

against a currency that is already inflating more rapidly than the Canadian dollar, and at a time when domestic policy is already mildly contractionary, creates genuine difficulties. If the authorities choose to ignore it, and continue to keep domestic monetary expansion on track, then they invite the possibility of "imported cost push" (to put it in conventional terms) or an "upward shift in inflation expectations originating abroad" (to adopt a more monetarist vocabulary). For a given rate of monetary expansion this would involve an increase in unemployment. On the other hand, any attempt to support the exchange rate in order to short circuit this series of events must involve tightening up domestic policy by more than purely domestic factors would dictate, and hence accepting more unemployment by that route. The only way to avoid some unemployment increase would be to accommodate whatever exchange rate depreciation and acceleration of domestic inflation the foreign shocks are generating with domestic monetary expansion, and that of course would involve giving up the attempt to control domestic inflation by monetary means.

The monetary authorities have chosen the second of these three alternatives, at some risk of creating more unemployment than would have been yielded by the first of them had the general public recognised the associated exchange depreciation to be temporary. Although it is easy for an academic to criticise them for this, he must also recognise that, if the first course had been adopted, and if the exchange depreciation in question had been taken to be permanent by the general public and hence allowed to influence their inflation expectations, then the benefits that might have been achieved on the unemployment front would have been at best short lived, and purchased at the cost of a resurgence in inflation and a subsequent re-emergence of high

unemployment. Thus it is hard to blame the Bank of Canada for being averse to taking such a risk, while it should surely be praised for avoiding any temptation to adopt the third "line of least resistance" alternative.

The implications of the last couple of paragraphs are straightforward. Even with a flexible exchange rate between the two countries, United States economic disturbances, even those originating in monetary policy, are transmitted to Canada, and do make it difficult to judge the extent to which the gradualist policies of the Bank of Canada are succeeding. Their effect would appear to be to force Canada to accept more unemployment in order to achieve a given cut in the inflation rate than might otherwise be required, and the fact that this effect is a temporary one is only marginally comforting.[11] As has been remarked on more than one occasion already in this essay, "temporary" effects need not be short lived. Once again, the temptation to look to wage and price controls of some sort as a way out of this problem is strong, but they are no more likely to be effective under flexible exchange rates than fixed. To the extent that what is sometimes called the "domestic component" of the price index is effectively controlled, excess money balances will be generated whose effects must be felt elsewhere, not least on the exchange rate which one would expect to depreciate more (or appreciate less) than it otherwise would in the presence of "effective" controls, thus ensuring that their principle effect is on the structure of relative prices rather than the general price level. Since the real wage is one of the relative prices one might expect them to influence, the advocates of controls must answer exactly the same questions about how they propose to make their scheme work under flexible rates as they must in the context of fixed rates.[12]

Now none of this is very encouraging. For once, though, a few facts put things into perspective and, in my view give certain grounds for optimism.

Gradualist policies of an extremely mild form, accompanied by exchange rate flexibility, have been in place in this country for close to five years now. Over that time we have seen the foreign exchange value of the initially badly overvalued Canadian dollar fall by a little under twenty percent against the United States dollar, and by much more against most other currencies. Over the same period, the United States inflation rate has more than doubled. Despite this, the domestic inflation rate is lower than it was five years ago (though not by much to be sure), the spread between United States and Canadian short term interest rates has moved sharply in Canada's favour and unemployment is, after the abrupt increase of 1976-78, now back at its 1975 level. Surely these facts give some grounds for believing that the policies are slowly but surely working, and are worth persevering with.

IV CONCLUDING COMMENT

The arguments presented in this paper seem to me to lead to mildly optimistic conclusions. It does seem to be the case that even so open an economy as Canada can control the long run path of its own inflation rate provided that it does not simultaneously seek to maintain a fixed exchange rate. However, exchange rate flexibility is not a panacea as far as anti-inflation policy is concerned, or as far as the pursuit of any other policy goal is concerned either. It is a purely permissive factor, albeit a vital one, and even the insulation that it provides against foreign shocks is at best partial. It can provide no protection against real shocks--any more than can any other institutional arrangement--and in the short run it does not insulate against monetary instability originating abroad either.

However the case for attempting to get to grips with inflation by monetary gradualism against a background of exchange rate flexibility is not by any means that it is the best of a menu of available policies, but that, in the current state of knowledge it is the only one available; the fact that it is a blunt and slow-moving instrument should not obscure this simple fact.

Not the least of such a policy's unfortunate side effects is its short run--but not necessarily short lived--influence on the unemployment rate. However, if the inevitable existence of such an effect is recognised, and the considerations outlined in the first substantive section of this paper are borne in mind, the implication that follows is not that "high" unemployment is unavoidable and is something that must be stoically faced. Rather the implication is that if macroeconomic weapons have been deployed against inflation, they cannot simultaneously be used to fight unemployment. Since there are a host of microeconomic measures that could influence the unemployment rate, the conclusion is not that we should resign ourselves to high unemployment, but that we begin to think of it as a problem that is amenable to microeconomic policies and set about implementing them, rather than continually arguing that macroeconomic policies be diverted from the single minded pursuit of the reduction of inflation.

FOOTNOTES

1 I have given an account of the alternatives involved here in Laidler (1978).

2 Underlying this argument is the view that past experience of inflation is an important determinant of expectations about the future for a significant segment of the population. I make no apology for stating this view but the reader should note that it is not necessarily consistent with the currently fashionable "rational expectations" hypothesis, particularly when the latter is formulated so as to make the public's expectations of inflation depend solely upon the current conduct of monetary policy. See for example Sargent and Wallace (1976).

3 A useful source of material on these and related issues is H. Grubel and M. Walker (eds.).

4 The simplest account of these matters, and an essentially complete one as well, is given by Johnson (1968).

5 The debt that the arguments presented here owe to Friedman (1977) should be explicitly acknowledged.

6 The role of assumptions about money illusion in distinguishing Keynesian and Monetarist analyses of inflation in open economies is explored by Laidler and Nobay (1975).

7 In the circumstances of the 1950s, this was of course a reasonable policy to pursue. The purchasing power of the United States dollar was stable over time, so that any tendency of the Canadian dollar to depreciate against it was likely to be an "early warning" that Canadian monetary policy was becoming over-expansionary.

8 I developed this case at some length in Laidler (1976).

9 For simple versions of such models, see Laidler (1975).

10 I have provided a formal, though I trust simple, analysis of some of these issues in Laidler (1977). Burton (1979) provides a substantial and important extension of the analysis in question.

11 The reader will note that what we have been dealing with above is very much akin to effects of the "overshooting" phenomenon analysed by Dornbusch (1976), not on the "domestic" economy in which the stance of monetary policy is changed, but on the "foreign" economy.

12 I do not believe that proposals to make wage and price controls effective by the use of tax-incentives, such as for example Donner and Peters (1979) have proposed, meet such an objection. The problem with controls is not how to punish violators and reward those who comply, but to devise a set of regulations and monitoring procedures that enable one to distinguish between these two groups in the first place.

BIBLIOGRAPHY

Barber, C.L. and McCallum, C.P. (1980), Unemployment and Inflation: The Canadian Experience, Ottawa, Canadian Institute for Public Policy.

Brown, A.J. (1955), The Great Inflation, 1939-1951, London, Oxford University Press.

Burton, D. (1980), "Expectations and Small Open Economy With a Flexible Exchange Rate", Canadian Journal of Economics, 13 February 1-15.

Donner, A.W. and Peters D.D. (1979), The Monetarist Counterrevolution: A Critique of Canadian Monetary Policy, 1975-1979, Ottawa, Canadian Institute for Economic Policy.

Dornbusch, R. (1976), "Expectations and Exchange Rate Dynamics", Journal of Political Economy, 84 1161-76.

Friedman, M. (1977), Inflation and Unemployment: The New Dimension of Politics, 1976 Alfred Nobel Memorial Lecture, Institute of Economic Affairs Occasional Paper 51, London.

Grubel, H.G. and Walker, M.A. (eds.) (1978), Unemployment Insurance, Global Evidence of its Affects on Unemployment, Vancouver, The Fraser Institute.

Johnson, H.G. (1967), "Money in a Neoclassical One Sector Growth Model" in Essays in Monetary Economics, London, Allen and Unwin.

Laidler, D. (1975), Essays on Money and Inflation, Manchester and Chicago, Manchester University Press and University of Chicago Press.

Laidler, D. (1976), "Anti-Inflation Policy--An Alternative to Wage and Price Controls" in M. Walker (ed.) The Illusion of Wage and Price Control, Vancouver, The Fraser Institute.

Laidler, D. (1977), "Expectations and the Behaviour of Prices and Output Under Flexible Exchange Rates", Economica NS 44 327-36.

Laidler, D. (1978), "Money and Money Income, An Essay on the Transmission Mechanism", Journal of Monetary Economics 4 151-191.

Laidler, D. and Nobay, A.R. (1975), "Some Current Issues Concerning the International Aspects of Inflation", in Laidler (1975).

Lipsey, R.G. (1960), "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957", Economica NS 27 1-31.

Phelps, E.S. (1967), "Phillips Curves, Expectations of Inflation and Optimal Unemployment Over Time", Economica NS 34 254-81.

Phillips, A.W. (1958), "The Relationship Between Unemployment and the Rate of Change of Money Wage Rates in the U.K., 1861-1957", Economica NS 25 283-99.

Sargent T.J. and Wallace N. (1975), "Rational Expectations and the Theory of Economic Policy", FRB of Minneapolis Studies in Monetary Economics 2.

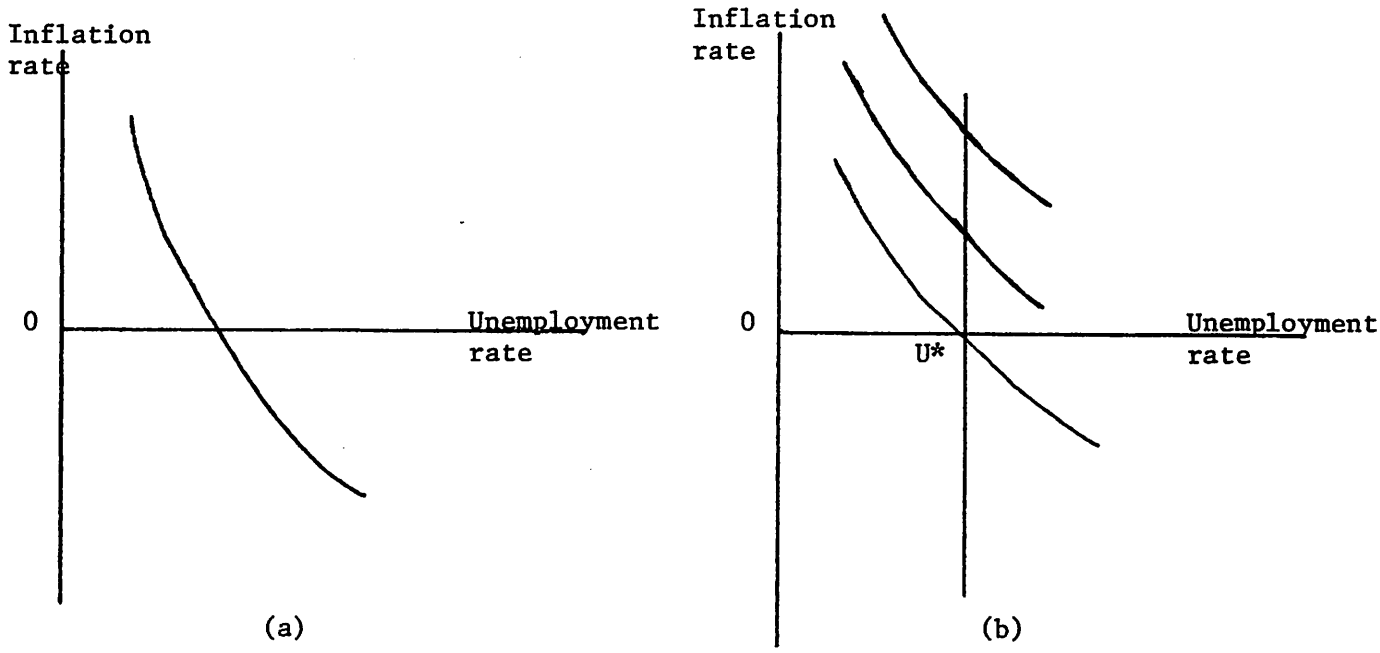

Figure 1

(a) The traditional Phillips curve

(b) A family of expectations-augmented Phillips curves; U* is a constant natural unemployment rate.

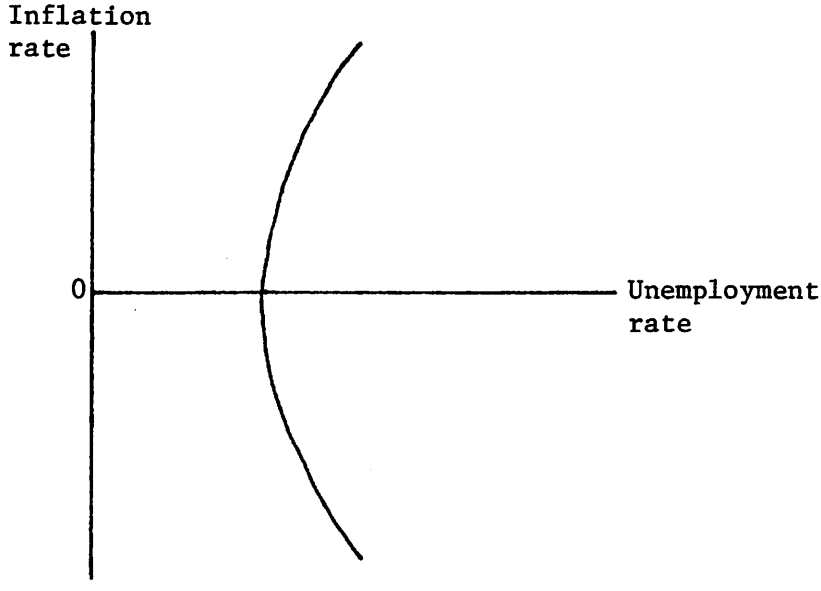

Figure 2

The long run inflation-unemployment trade-off if the natural unemployment rate varies positively with the deviation of anticipated inflation from zero.

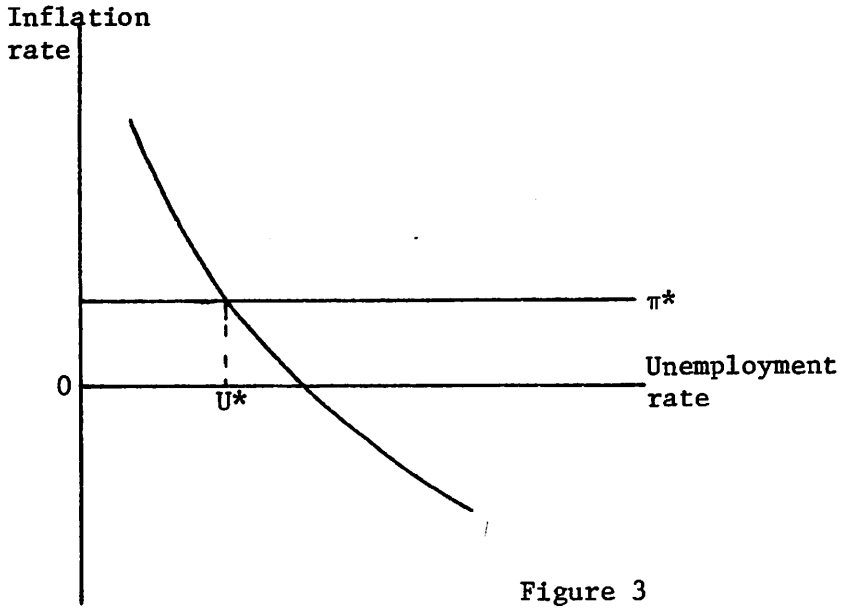

Figure 3

The Phillips curve in a fixed exchange rate open economy where π* is an exogenous expected inflation rate and U* is the natural unemployment rate.

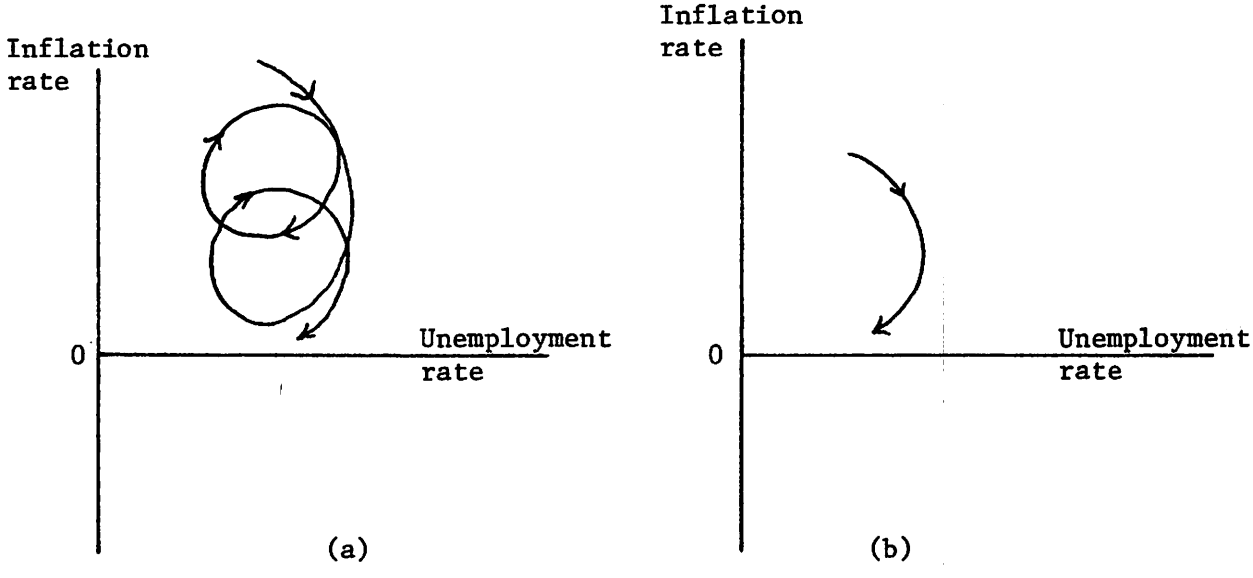

Figure 4

A gradual contraction of the monetary expansion rate is more likely to generate a spiral pattern of inflation and unemployment (panel a) than the smooth path described in panel (b).

CENTRE FOR THE STUDY OF INTERNATIONAL ECONOMIC RELATIONS

University of Western Ontario

Working Papers

8001. Robson, Arthur J. OPEC VERSUS THE WEST: A ROBUST DUOPOLY SITUATION

8002. McMillan, John and Ewen McCann. WELFARE EFFECTS IN CUSTOMS UNIONS

8003. Leith, J. Clark. MONEY, THE BALANCE OF PAYMENTS, AND GOVERNMENT DEBT IN A SMALL OPEN LDC: HAITI

8004. Mansur, Ashan and John Whalley. A DECOMPOSITION ALGORITHM FOR GENERAL EQUILIBRIUM COMPUTATION WITH APPLICATION TO INTERNATIONAL TRADE MODELS

8005. Schmid, Michael. OIL, EMPLOYMENT AND THE PRICE LEVEL: A MONETARY APPROACH TO THE MACROECONOMICS OF IMPORTED INTERMEDIATE GOODS UNDER FIXED AND FLEXIBLE RATES

8006. Markusen, James R. THE DISTRIBUTION OF GAINS FROM BILATERAL TARIFF REDUCTION

8007. Markusen, James R. TRADE AND THE GAINS FROM TRADE WITH IMPERFECT COMPETITION

8008. Markusen, James R. and James R. Melvin. TRADE, FACTOR PRICES, AND THE GAINS FROM TRADE WITH INCREASING RETURNS TO SCALE

8009. Whalley, John. AN EVALUATION OF THE RECENT TOKYO ROUND TRADE AGREEMENT THROUGH A GENERAL EQUILIBRIUM MODEL OF TRADE INVOLVING MAJOR TRADING AREAS.

8010. Laidler, David. MONETARISM: AN INTERPRETATION AND AN ASSESSMENT.

8011. Wonnacott. Paul and Ronald J. Wonnacott. FREE TRADE BETWEEN THE UNITED STATES AND CAN ADA: FIFTEEN YEARS LATER

8012. Hamilton, Bob and John Whalley. OPTIMAL TARIFF CALCULATIONS IN ALTERNATIVE TRADE MODELS AND SOME POSSIBLE IMPLICATIONS FOR CURRENT WORLD TRADING ARRANGEMENTS.

8013. Wonnacott, Paul and Ronald J. Wonnacott. THE TARIFF-FOREIGN OWNERSHIP-TECHNOLOGY NEXUS: TOWARDS A LESS TRUNCATED THEORY OF CANADIAN INDUSTRIAL TRUNCATION

8014. Laidler, David. INFLATION AND UNEMPLOYMENT IN AN OPEN ECONOMY - A MONETARIST VIEW.