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INFLATION TARGETS AFTER 1998: SOME CONTRASTING VIEWS

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INTRODUCTION

The Bank of Canada and the Government of Canada are committed to price stability as the goal of monetary policy and the Bank currently tries to keep "core" inflation between 1% and 3% annually. Soon new inflation targets must be established, as the current ones expire at the end of 1998. The Bank and the government are expected to decide upon a more concrete definition of price stability and establish a path to get there.

In deciding upon a new set of inflation targets, the Bank and government will have to judge whether or not existing policy has served Canadians well; if it could be improved upon by moving more rapidly to price stability; or if the policy stance was a mistake and should be reversed. Such an assessment will undoubtedly be influenced by Canada's poor macro-economic performance in the 1990s: does this performance reflect bad monetary policy, the temporary costs of an essentially good policy, the unnecessary costs of a badly implemented policy, or something beyond the realm of monetary policy?

The answers to these important questions are not obvious, and monetary policy is still a matter of deep controversy. Some, such as the ex-Governor of the Bank of Canada, John Crow, urge the completion of the task of achieving true price stability. Others, such as Professor Pierre Fortin, say let's recognize that we have made a serious and costly mistake and allow inflation to grow slightly so as to reverse some of the job losses imposed on our economy by the Bank of Canada.

This paper provides an overview of the monetary policy debate now taking place in this country, and the implications for the future of the Bank's monetary policy.

OPPOSITION TO FURTHER TARGET REDUCTIONS

The following looks at the main arguments of critics of the Bank of Canada who oppose any further reduction in inflation targets. The first argument, after examining the benefits of low inflation and the costs of achieving it, concludes that targets should remain where they are. The second argument perceives the costs of low inflation as large and concludes that the targets, rather than being lowered, should be raised.

The discussion makes no mention of the previously popular notion that higher inflation can be traded off permanently for lower levels of unemployment. This "Phillips curve" view has now been virtually abandoned by serious analysts of monetary policy and does not play any significant part in the current debate on this issue.

A. Keep Present Targets

Some economists argue that the temporary costs associated with further disinflation will likely exceed any permanent benefits. It takes an enormous amount of monetary restraint to reduce inflation, especially when the rate is already low. While there may be some real benefits to lower inflation, they could be outweighed by the costs of getting there.

This is particularly true if some of the costs prove to be permanent. Under the phenomenon known as hysteresis, those who, because of monetary restraint, lose their jobs for a protracted period may also lose their job skills through attrition, hence becoming unemployable on a permanent basis. This outcome is more likely if we experience severe monetary restraint due to a high sacrifice ratio (i.e., the amount of restraint required to achieve a one percentage point drop in inflation), or if the authorities try to achieve a large reduction in inflation over a short period of time.

If the costs of further disinflation, whether temporary or permanent, would exceed the benefits, the Bank of Canada's targets should not be further reduced, according to this view. It does not follow, however, that these commentators believe that inflation targets should be raised. This analysis does not attribute any benefits to higher inflation and the costs of past disinflation are not recovered. One might conclude that the Bank of Canada should never have reduced inflation to 1.5% per year; however, once this target has been achieved, there is nothing to be gained by raising it again.

B. Raise Targets

The most persistent critic of the Bank of Canada's current monetary policy is Professor Pierre Fortin, as he showed in his recent presidential address to the Canadian Economics Association.(1) According to him, Canada is in the worst economic slump since the Great Depression, leaving the economy 850,000 jobs below our pre-recession level. His explanation for this is that the Bank of Canada's single-minded pursuit of price stability through tight monetary policy resulted in high interest rates that led to the fiscal crisis of the early 1990s and a subsequent fiscal contraction that has further exacerbated our economic problems.(2)

In this view, our poor labour market performance is not only destructive but completely unnecessary; the American approach to monetary policy (now yielding approximately 3% inflation per year) produces virtually all the benefits associated with low inflation while still allowing the economy to be a veritable job machine, producing full employment.

Professor Fortin believes that Canada's inflation targets should be raised slightly, to a 2% to 4% range, with monetary policy aiming to keep inflation at about 3% per year. He claims that this slight increase from the current inflation rate of 1.5% to 2% would produce significant benefits for the Canadian economy.

These monetary proposals are based primarily on different reasoning from that discussed in the previous section. Most important in this view are not so much the costs of reducing inflation, but the costs of maintaining a permanently low rate of inflation. These costs would be even higher with true price stability. This thesis suggests that the high costs of our current monetary policy could be reversed by slightly increasing the average rate of inflation.

According to this view, inflation can be a valuable tool of economic adjustment because it enables firms to reduce their real costs of production without having to take explicit measures to do so. This is the notion of "greasing the wheels of the economy," that was suggested by the American economist James Tobin in 1972, and is described below.(3)

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(1) Pierre Fortin, "The Great Canadian Slump," *Canadian Journal of Economics*, XXIX, No. 4, November 1996.

(2) Pierre Fortin, "Raise the Inflation Target and Let Canada Recover," *The Globe and Mail* (Toronto), 26 September 1996.

(3) J. Tobin, "Inflation and Unemployment," *American Economic Review*, Vol. 62, 1972.

In any economic environment, the circumstances of firms vary widely. Some are facing growing demand; for others, demand is contracting. Some are becoming more productive; others less so. Some are profitable; some are on the verge of bankruptcy. Consequently, the real wages of workers will change at different rates: some will grow while others will fall. The distribution of these changes generally exhibits a symmetrical pattern, like a bell curve.

Firms not competitive in the current environment need to cut costs and this usually means cutting labour costs. In a world of moderate inflation and productivity growth, this is not especially hard to do. If, for example, we have 5% inflation and 1% growth in labour productivity, a firm that freezes wages enjoys a 6% cut in real labour costs after one year. It would still enjoy a 5% reduction in real labour costs if it gave employees a 1% wage increase

Tobin, Fortin and others contend that nominal wages are “sticky” downwards. The most firms can do is freeze wages, so that the flexibility of labour markets is seriously constrained once inflation rates approach zero. This problem is compounded when labour productivity is growing only slowly. In this case the distribution of wage changes loses its symmetry; too few workers receive the necessary cuts to their real wages and the result is higher unemployment.

Institutional factors also add to nominal wage rigidity. Minimum wages are rarely, if ever, reduced. Where wage equity legislation comes into play, it also prohibits a reduction in wages, thereby in some circumstances possibly hindering labour adjustment.

As an example, consider the case of a firm that must cut its real labour costs by 5% to remain competitive and whose labour force becomes 1% more productive every year. With inflation of 5% per year, this firm could raise wages by 1% and still achieve the needed 5% reduction in real labour costs. If inflation is 3% per year, a wage freeze would reduce real labour costs by 4% per year, leaving the remaining 1% to be achieved through layoffs. If inflation is only 1% per year, a wage freeze would reduce real labour costs by only 2%, requiring 3% in savings to be achieved via layoffs. Clearly, this firm would have to lay off more workers in a world of 1% inflation than in a world of 3% inflation.

Moreover, the total number of firms in the economy that must resort to layoffs grows as the inflation rate falls towards zero. Similarly, as the growth in labour productivity declines, firms must resort more to layoffs to reduce labour costs.

This conclusion depends on the assumption that nominal wages are seldom cut. A recent Brookings Institution study(4) concludes just that. It presents historical data that show virtually no instances of wage decreases and cites surveys indicating that a large proportion of employees and employers consider wage cuts to be unfair, a hindrance to good employee morale, and justified only in exceptional circumstances such as a firm's imminent bankruptcy. This study also cites Professor Fortin's Canadian data for the early 1990s, collected from large contract settlements without cost-of-living adjustments, which show that very few contracts included wage rollbacks, though a large proportion contained freezes.

The implications of these data are not pleasant. According to Professor Fortin and the Brookings investigators, the downward rigidity of nominal wages is a permanent feature of labour markets, regardless of the economic environment. Workers and employers are as reluctant to cut wages in a world of low inflation as they are in a world of high inflation; both are as reluctant to cut wages in times of high unemployment as in times of low unemployment. An inflation rate close to zero raises unemployment permanently. In Professor Fortin's view, the Bank of Canada policy has cost our economy over 500,000 jobs.(5) Unless that policy is changed, this job loss will remain indefinitely. And the longer the policy remains unchanged, the greater is the possibility that the unemployment will become irreversible as laid off workers lose their job skills through attrition.

Fortin notes that prior to the last recession the Canadian and American economies each employed 62.5% of persons aged 15 years or over. As the recession progressed, this percentage fell faster and further in Canada than in the U.S. Today, the American labour market has fully recovered from the recession but the Canadian has not.

A variety of factors could explain our poor labour market performance. Professor Fortin examines globalization and free trade, technological change, political uncertainty regarding Quebec, minimum wages and unionization; however, he concludes that they fail to account for what has been happening. Increased payroll taxes do not contribute to higher permanent unemployment because they are eventually passed on to workers in the form of lower real wages (though they could have caused some observed increase in unemployment if low

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(4) George A. Akerlof, William T. Dickens and George L. Perry, "The Macroeconomics of Low Inflation," *Brookings Papers on Economic Activity*, No. 1, 1996.

(5) House of Commons Standing Committee on Finance, *Evidence*, 10 October 1996.

inflation rates were slowing down this adjustment). Fortin concluded that there is only one significant explanation for the difference in Canadian and American performance: American policy has kept U.S. inflation closer to 3% in the 1990s and as a result the American labour market has been fully flexible; the Bank of Canada's monetary policy has kept inflation close to 1.5%, thereby preventing flexibility in the Canadian labour market.

1. A Challenge to the Data

Various criticisms have been levelled at data put forward in support of the wage rigidity hypothesis. In the 1960s to 1980s, the North American economies were characterized by high inflation and/or high growth in labour productivity. The absence of wage cutbacks is not surprising; they would have been seen as unfair at a time when average wages were growing quite rapidly. Extrapolating from that period to one of low inflation should be done with great care. It might be assumed that when average wages are growing only slowly, cutbacks would not be so unusual. Studies of still earlier periods have concluded that wages are in fact very flexible.(6) For example, Robert Gordon, commenting upon the Brookings study notes that American wages fell 17% between 1929 and 1933.(7) Moreover, it is suggested that surveys provide only weak evidence on this issue; respondents are known to conceal sensitive personal information and would be far more likely to report that an acquaintance had had a wage cut than to admit that they themselves had had this experience.(8)

A study of the earnings of 5,000 American families since 1968 also provides little support for the wage rigidity hypothesis.(9) For most workers, the distribution of wage changes is not skewed away from wage cuts, in sharp contrast to the claims of the Brookings study. Observations of zero wage change represent only 7% of the sample; in contrast, 17% experienced nominal wage cuts in any year. Most important, there is no evidence of money illusion; that is, respondents recognized the impact of inflation on individual prices and wages.

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(6) A.L. Marty and D.L. Thornton, "Is There a Case for 'Moderate' Inflation?" Federal Reserve Bank of St. Louis, *Review*, Vol. 77, No. 4, July/August 1995.

(7) R.J. Gordon, "Comment," *Brookings Papers on Economic Activity*, No.1, 1996.

(8) N.G. Mankiw, "Comment," *Ibid*.

(9) K.J. McLaughlin, "Rigid Wages?' *Journal of Monetary Economics*, Vol. 34, No. 3, December 1994.

Professor Fortin's data appear to be on more solid ground as they pertain to the Canadian low-inflation environment; nevertheless, they are not as convincing as they seem at first glance. The main criticism is that public sector settlements make up a very large part of his sample (60%), far in excess of that sector's importance in the economy. More important, 90% of the wage freezes were public sector wage freezes.(10) Governments do not behave in the same way as private sector employers. In addition, these data are from the period of the "Rae days" in Ontario, when the Ontario government used unpaid days off as a means of reducing real labour costs. Professor Fortin also treats multi-year contracts with a wage freeze in the first year as examples of wage freezes, when they should have more properly been treated as examples of wage increases. His treatment overstates the incidence of wage freezes and gives more importance to the zero point than it deserves.

But even at that, one must treat this kind of data cautiously. While economic theory can speak of a wage rate, nominal or real, it is far more difficult to frame such a concept in practical terms. So we must rely upon imperfect proxies.

Most workers are not unionized, do not work for large employers and are not part of large settlements; thus labour contracts do not necessarily reflect what is happening in the labour market in general. In addition, these data tend to reflect only the wages of those who are paid hourly, rather than on a salary basis. For example, a firm with excessively high wage costs goes out of business or lays off some workers, who then take on jobs with lower-wage employers in the same or different industries, (ex-Eaton's employees going to work for WalMart, for example). Wage flexibility can manifest itself in a variety of ways. Studies indicate that those who change jobs or are paid on a salary basis experience greater wage flexibility than those who stay put or are paid hourly.(11) A recent study by Statistics Canada indicated that of the 19% of Canadian employees who worked overtime in the first quarter of 1997, 60% did so without compensation.(12) By itself this figure says nothing about wage flexibility; however, as the amount of unpaid overtime changes, so does the effective compensation of employees. To the

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(10) These figures are cited by David Laidler in: House of Commons Standing Committee on Finance, *Evidence*, 10 October 1996, p.36.

(11) D. Card and D. Hyslop, "Does Inflation 'Grease the Wheels of the Labour Market'?", in C.D. Romer and D.H. Romer eds., *Reducing Inflation: Motivation and Strategy*, National Bureau of Economic Research, Studies in Business Cycles, No. 30, The University of Chicago Press, Chicago, 1997.

(12) B. Little, "Canadians Work Overtime - For Free," *Globe and Mail* (Toronto), 15 July 1997.

extent that austerity measures and/or recession- induced downsizing have increased the incidence of unpaid overtime, they represent a cut in real wages. As well, fringe benefits could be reduced, work could be contracted out, etc. None of these effects is captured by contract settlements.

John Crow makes the further point that Canada is very much an open economy, with about 40% of GDP resulting from international trade. When coupled with a flexible exchange rate, even wages that are nominally inflexible in Canadian dollars could be highly flexible in real terms when measured against an international standard.(13)

2. Other Critiques

The arguments for slightly increasing the rate of inflation in Canada are probably made by a minority of Canadian economic analysts. Clearly, however, Canada's poor labour market performance needs to be explained and Professor Fortin has attempted to do this. His critics believe that his arguments are not sufficiently compelling to change the stance of monetary policy, yet they will have to be addressed when the post-1998 inflation targets are debated.

In addition to the problems mentioned above, there are also problems inherent in the data upon which we base comparisons between American and Canadian unemployment rates. The Centre for the Study of Living Standards concluded that only one-half of the difference between Canadian and American unemployment rates was due to cyclical factors and attributed the other half, in equal parts, to measurement differences and structural factors. Other analysts, such as Professor Herb Grubel, attribute a much greater importance to structural factors, noting for example that the recent changes to Employment Insurance in Canada will not alleviate unemployment rates for several years. Finally, a recent Statistics Canada study suggests that the drop in the participation rate of the population may reflect an increase in early retirement, rather than worker discouragement to the extent previously thought.(14)

On the surface, the idea of a little more inflation to grease the wheels of the economy seems acceptable. It alludes to an economy that is like a machine, needing a little

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(13) J. Crow, "A Comment," in D. Laidler, ed, *Where do We Go From Here: Inflation Targets in Canada's Monetary Policy Regime,* Policy Study 29, C.D. Howe Institute, 1997.

(14) E. Beauchesne, "Labor Force Dropouts Not Necessarily Discouraged Workers," *Ottawa Citizen,* 12 June 1997.

lubrication to work smoothly. The minor increase in inflation being proposed by Professor Fortin, from 1.5% or 2% per annum to 3%, does not appear to be particularly radical or contentious. The underlying premise, however, is that workers, fooled into thinking they were earning more than was really the case, would keep jobs that they would otherwise abandon.

This is why the wage rigidity thesis is hard to accept. It requires workers and employers to demonstrate irrationality and an unbelievable unwillingness to learn. It is one thing to say that workers would not accept a wage rollback when inflation is unexpectedly, and possibly temporarily, low. It is much harder to believe that workers would reject a rollback in an environment of clearly low inflation or persistently high unemployment. Wage rollbacks might be seen as a good alternative to unemployment at a time when jobs are scarce.

Paul Krugman, another noted American economist, argues in support of Professor Fortin's thesis by putting forward a moderate compromise to the price-stability advocates on the one side and the easy-money/growth advocates on the other. He dismisses the previously popular notion that longer-term unemployment can be reduced by raising inflation. He refers to the "reasonable proposition" that people aren't fooled by inflation and can calculate the real wage gain in a 10% inflation world as easily as in a 5% inflation world. In his opinion, "there is overwhelming evidence that this hypothesis is right."(15) In the next paragraph, however, he claims that it takes a "hyper-rational" worker to recognize that a wage gain that is less than the rate of inflation is the same thing as a nominal wage cut. Surely a worker who can subtract 10 from 8 to get -2 can also subtract 3 from 1 to get the same result.

Furthermore, given what is now known about the accuracy of our price measures, the difference between Canadian and American inflation rates is not large; yet it is credited with having a great impact on labour markets. It would be truly ironic if we found that our high unemployment problem is due, not to monetary policy, but to an inaccurate consumer price index.

Moreover, labour strife (measured by time lost to strikes) is substantially reduced in a low inflation environment. This may suggest that workers do not suffer from money illusion; rather, they are aware of the consequences of high inflation and the difference between nominal and real wage changes.

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(15) "Paul Krugman, "Stable Prices and Fast Growth: Just Say No," *The Economist*, 31 August 1996, p.20.

The issue is not whether workers willingly accept nominal wage cuts -- they clearly do not; when they accept cuts, they do so grudgingly. But are they any more willing to see their wages fall during times of higher inflation? Strike data suggest that this is not the case.

Moreover, if inflation "tricks" workers into staying in jobs with declining real wages, is this a good thing? Some industries are declining as others are flourishing. Real wages decline in the former and increase in the latter, sending a signal to workers that better opportunities exist elsewhere. If inflation blurs this message, labour will not migrate to more productive uses.

SUPPORT FOR PRICE STABILITY

Some economists claim we should go all the way to achieve true price stability. They believe that, while today's moderate inflation is much better than that we experienced in the 1970s and 1980s, it can still be improved upon. In their view, it is now becoming evident that even low or moderate inflation imposes large and long lasting costs on society and hence can do significant harm over a long period. Indeed, the more than two decades of high inflation that we experienced can be blamed for many of our current economic ills. By contrast, the costs of reducing inflation, according to these economists, are relatively small and short-lived.

First, it is useful to consider just what is meant by price stability. On the surface, it is a concept that seems relatively easy to define -- it is the absence of inflation over time, or the constancy of aggregate prices over many years. But the aggregate price level, and inflation are economic concepts that, in practice, are represented by imperfect measures, the best-known being the Consumer Price Index (CPI).

It is generally recognized that the Consumer Price Index overstates the degree of inflation. This happens for a variety of reasons. The CPI is slow in adjusting its market basket to reflect actual purchasing patterns so that the effect of consumers' switches to less costly products can be masked. Price indices also tend to take product improvements insufficiently into account, again overstating the rate of inflation. As well, indices may not take account of new products, thereby missing the dramatic declines in prices and improvements in quality that are found during the early part of the product cycle.

The Bank of Canada and most Canadian economists believe that the bias of the CPI is no more than 0.5% per year, although some, notably Pierre Fortin, believe it to be somewhat higher.(16) In the United States, the upward bias is generally thought to be greater than in Canada. The Boskin Commission recently concluded that the best estimate of the upward bias of the American CPI is 1.1% per year, with a plausible range of values from 0.8% to 1.6%.(17)

Price stability can also be viewed as a state of mind. It has been described as either as "a state of confidently held expectations about the absence of inflation," by John Crow,(18) or as a situation "when people do not consider inflation a factor in their decisions," a phrase attributed to both Paul Volcker and Alan Greenspan.(19) In other words, we have price stability when individuals and firms make consumption decisions based on the relative merits of the expenditure, not because they fear the price will be higher tomorrow; when families buy houses because it is what they want and can afford and not as a hedge against inflation; when individuals can confidently make long-term investment decisions without worrying about purchasing power in the future; when employees don't care whether or not their longer-term contracts contain COLA clauses; and when seniors aren't concerned about whether their pensions are indexed and taxpayers aren't affected by a tax system not indexed to inflation.

This approach has the advantage of not depending upon the accuracy of CPI statistics, in which our confidence is diminishing as the structure of our economy changes. Given the growing importance of services in the economy, it is becoming increasingly difficult to define a unit of output.(20) If, however, the Bank of Canada is going to continue to use a CPI-based measure of inflation, achieving price stability would probably demand a target below 1% per year. Thus the Bank of Canada today is aiming for a low rate of inflation, but not price stability.

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(16) As cited in Michael Parkin, "Monetary Policy and the Future of Inflation Control in Canada: An Overview of the Issues," in D. Laidler ed. (1997).

(17) Advisory Commission to Study the Consumer Price Index, Michael J. Boskin Chairman, *Toward a More Accurate Measure of the Cost of Living*, Final Report to the Senate Finance Committee, Washington D.C., 4 December 1996.

(18) John Crow, " A Comment," in Laidler ed. (1997).

(19) George A. Kahn, "Symposium Summary," *Achieving Price Stability*, Federal Reserve Bank of Kansas City, 1996.

(20) Alan Greenspan, "Opening Remarks," in *Achieving Price Stability* (1996).

A. The Benefits of Price Stability

Price stability generates benefits in that the economy avoids the costs to society associated with inflation. In the past, it was thought that significant costs resulted from only very high rates of inflation or unexpected inflation. Today, analysis and evidence suggest that even low and stable rates of inflation can be costly, as advocates of price stability emphasize.

A modern market economy is based upon specialization and exchange (in which money is the intermediate good that allows us to trade what we produce for what we want to consume). Anticipated inflation raises the cost of holding money and causes individuals to reduce their holdings of this intermediate good. In this way, inflation is like a tax, increasing transaction costs and leaving fewer resources to produce other things. Consumption, investment and work effort are all reduced as a result. It is a well recognized principle of public finance that intermediate goods should not be taxed, yet inflation does just that.

Our economy also relies heavily upon the signals given by the price system, which provide a great deal of information on what to produce, how to produce it, when to produce it, and where to produce it. Inflation (and deflation, for that matter) decreases the accuracy of the price signals we use in our roles as consumers, producers and investors. When individual prices change in a world of price stability, we know that some underlying condition has changed, either on the demand or supply side. When such an individual price changes in a world of inflation, however, we don't know the cause; it could be a delayed reaction to inflation, or an early reaction to anticipated inflation.

Probably the most pernicious effect of inflation is on capital formation. Capital formation has a profound and well-known impact on labour productivity, real incomes and economic growth. As taxes are applied to nominal, not real, returns from investment and as nominal returns tend to increase with inflation, even a moderate increase in inflation can cause a dramatic fall in the real after-tax returns from investment upon which capital investment is based. Reducing inflation from 3% to zero, for example, increases the expected after-tax real return by 35%.[(21)] Such an increase would have a significant impact on capital formation and economic growth, with the cumulative effects over time being quite substantial. This suggests

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(21) The calculation is based on a real return of 5%, a 30% tax rate and the assumption that nominal returns increase fully to reflect higher inflation. If nominal returns increase by only 80% of expected inflation, the reduction of inflation from 3% to zero increases expected after-tax real returns by 60%.

that we have indeed paid a heavy price for former inflation rates that were far greater than 3% per year. Peter Howitt estimates that the ultimate value of higher growth due to a reduction in inflation from 3% to zero could be equal to about 85% of current GDP.(22) An American study by Professor Martin Feldstein estimates that reducing inflation from 2% per year to zero would, over time, confer a benefit whose present value would equal about 35% of current American GDP.(23)

The Feldstein calculation concentrates on the harm inflation does to savings and investment, since "fictitious" returns at both the business and personal levels are taxed. Although some features of the tax code tend to reduce taxes in an inflationary environment, on balance real tax levels are increased. In the United States, inflation also tends to increase the demand for housing; not only does it reduce the returns from alternative forms of saving, but, because Americans can claim a tax deduction on nominal rather than real mortgage interest, inflation also reduces the after-tax cost of housing. (This tax deduction is not available in Canada).

In addition to lowering capital formation in general, inflation also shifts investment activity away from plant and machinery, which are growth-enhancing, and towards real estate, which is not. Inflation also affects labour force decisions and encourages individuals to enter financial fields, which (because of inflation) can be extremely lucrative, rather than technical and scientific fields, which are ultimately more beneficial to society and promote ore economic growth.(24)

Howitt's estimates are higher than Feldstein's primarily because they include price signals distorted by inflation, and the resulting reduced efficiency of investment. Even perfectly anticipated inflation affects reported profits and the real after-tax rate of return from investments, but the distortions vary from sector to sector and firm to firm. For example, inflation causes an overstatement of profits in firms with high inventory-to-sales ratios and large amounts of depreciable capital, but understates profits in firms with high levels of debt. As a

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(22) Peter Howitt, "Low Inflation and the Canadian Economy," in D. Laidler ed. *(*1997).

This estimate is equal to the present value of all increased future output due to price stability, assuming that growth is increased from 2% per year to 2.075% for a period of 30 years.

(23) M. Feldstein, "The Costs and Benefits of Going from Low Inflation to Price Stability," Working Paper 5469, National Bureau of Economic Research, Cambridge Mass., 1996.

(24) Howitt, in Laidler, ed. (1997), p. 38.

result, investors are less able to make informed decisions about the profitability of different firms and different sectors of the economy and may well invest in some areas with low rates of return while withholding capital from areas with high rates of return. Inflation variability further compounds these problems, as reported financial statements give investors mixed and inaccurate signals.

These costs of inflation are permanent. Some might be mitigated via an indexed tax system, but indexation of investment income would be difficult to put in place. Indeed, no jurisdiction has ever come close to implementing anything like a comprehensively indexed tax system, which in any case might just further distort economic behaviour. More important, not just the tax system is fooled by inflation, investors are as well and indexation of the tax system will not necessarily solve their problems.

Feldstein estimates these benefits of price stability to equal about 1% of GDP per year. The one-time costs of eliminating 2% inflation, amounting to about 5% of current GDP, could be exceeded by the benefits within six to nine years, depending upon their timing. After that, price stability would continue to generate annual benefits without the costs. Howitt estimates the annual benefits to be about 50% higher.

In this view, the costs of inflation are seen as diffused over the whole economy, showing up in a variety of ways that are not always apparent. This is in sharp contrast to the Fortin thesis that the costs of price stability take the form of higher unemployment and/or lower labour force participation rates. These statistics are reported monthly and followed closely by analysts, the media, politicians and voters.

Many factors have also affected growth and productivity since WWII, including demographic change, a more important service sector, an increasing role for the public sector, and technological development. As noted above, however, inflation reduces the efficiency of the economy and its rate of growth.

The following chart plots over four decades of inflation and productivity change in manufacturing. The erratic changes in productivity from year to year can mask longer term trends. To remove that volatility, the chart plots five-year rolling averages of these two variables. It shows low inflation and high rates of productivity growth in the 1950s and 1960s. Two decades of rising inflation also witnessed a long-term decline in productivity, until about 1982, after which, as inflation fell, productivity grew. A similar pattern exists for the 1990s.

While the business cycle also plays a role in this pattern, the data are consistent with the view that inflation is damaging to the economy. The cumulative effect over 20 years is undoubtedly large.

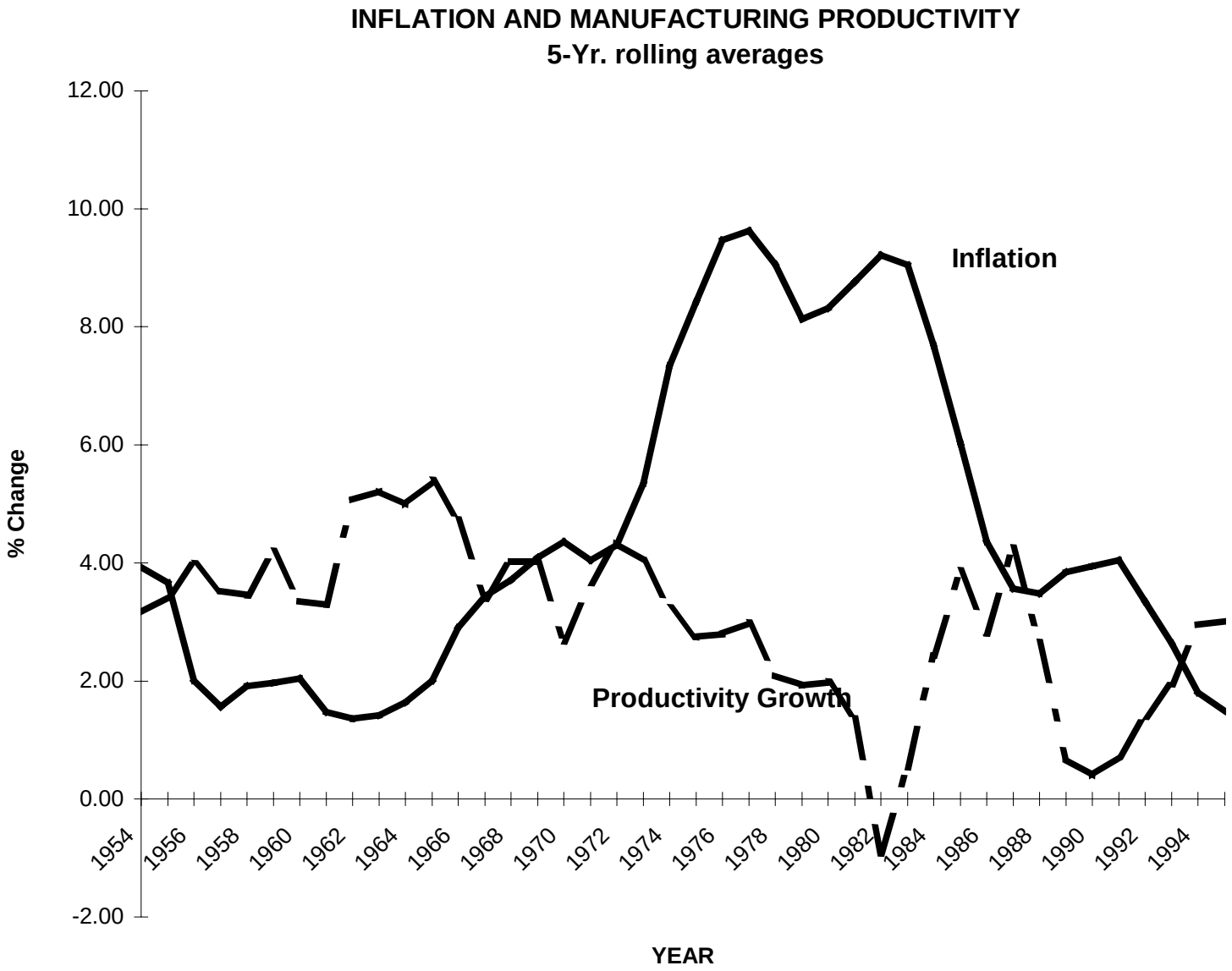
The data are also consistent with the fact that some of the costs of inflation show up as economic activity making up part of GDP, where, because we think of GDP as a proxy for overall economic welfare, they are incorrectly measured as benefits rather than costs. This is analogous to many of the costs of regulation. If, for example, a regulation increases the costs of producing cars, it might have the effect of somewhat lowering GDP. More important though, the additional labour and other input resources required to produce a car all count as economic activity. If the resulting car is no better than one produced without the regulation, and if regulation-induced features are substituted for those consumers would otherwise have chosen, these input resources are wasted. GDP accounting does not recognize this, however.

The same is true in a world of inflation; firms and households are forced to increase their use of financial, accounting and legal professionals, merely to cope with inflation, rather than to assist in the production of desired goods and services. The GDP, however, cannot distinguish between the purposes for which financial services are used. If, instead of spending $1,000 on a short vacation, a family spends it on ways to cope with inflation (financial advice, books on investment strategies, extra costs of shopping to find bargains, etc.) the level of GDP is not changed, but its composition is and clearly the family is worse off.

Inflation also imposes costs on society in the form of labour strife. In periods of high inflation, more days are lost to strikes than in periods of lower inflation. In the early 1980s, for example, three to eight times as many of days were lost to strikes as today, even though the unemployment rate was also high at that time.

B. The Costs of Achieving Price Stability

It is all well and good to cite the benefits of lower inflation or price stability; however, whether or not monetary policy should pursue such goals depends upon their costs. It might well be rational to forgo such benefits if the price would be too high or if benefits would


INFLATION AND MANUFACTURING PRODUCTIVITY
5-Yr. rolling averages
12.00
10.00
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Inflation
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1988
1990
1992
1994
YEAR

accrue too far in the future while costs were imposed today. The following considers these costs of disinflation.

The primary argument against "disinflationary" monetary policy (i.e., a policy that reduces the rate of inflation) is that it virtually always temporarily reduces the level of economic activity and raises unemployment. The magnitude of these costs can vary enormously. The costs of disinflation are temporary, however, while, according to Professor Fortin and others, the more controversial costs of maintaining a low rate of inflation are permanent.

There are two major reasons for the temporary costs of transition. The first is that prices tend to be set in nominal terms, based on the previous expectations of inflation. It is costly to reprice items and firms will not do so on a continuous basis. Thus if prices for 1997 had been established on the basis of 3% expected inflation and inflation was only 2%, prices will have been set too high. Although these excessive prices may be costly to firms, repricing items might be more so. Moreover, a wide variety of prices are set in longer-term contracts. If prices were set in anticipation of higher inflation than actually came about, firms and workers would be competitively disadvantaged. Breaking or renegotiating these contracts, however, entails substantial transaction costs.

Disinflation might also be costly because economic agents are slow to incorporate the central bank's disinflationary policy in their expectations and may expect 5% inflation at the same time that the central bank is pursuing a price stability goal; this will make the path to price stability slower and more painful. Even falling inflation might not alter expectations if it is viewed as an aberration from our long history of inflation rather than a reflection of a new monetary environment.

At issue is the amount and duration of the higher unemployment that would result from an attempt to reduce inflation permanently from, say 1.5% per year to 0.5% per year (which in Canada's case would imply price stability). Some analysts believe that because the costs of disinflation are high and rise more than proportionately with the speed of disinflation, a policy of gradualism would be less costly. It takes individuals time to learn about a new monetary regime; the longer they have lived with inflation, the longer it will take to persuade them that policy has changed.[25]

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(25) M. King, "How Should Central Banks Reduce Inflation? -- Conceptual Issues," in *Achieving Price Stability* (1996).

While the costs of the disinflation of the early 1980s cannot be dismissed, they proved to be far lower than the estimates of traditional Phillips Curve models. Michael Boskin argues that the American economy permanently reduced inflation by six percentage points in the early 1980s, at a cost of 12% of GDP spread over several years. This implies a sacrifice ratio of 2:1; traditional Keynesian models had predicted sacrifice ratios ranging from 4:1 to 10:1. [(26)] Canadian estimates range from about 2.3:1 to about 5:1.[(27)] Professor Fortin; however, suggests that Canada pays an enormous price for disinflation in the permanent unemployment caused by hysteresis (as described above). He claims that when central bank authorities try to reduce inflation quickly, this effect can be very pronounced and generate very high sacrifice ratios. Most other analysts, however, see little evidence of such an effect in Canada.[(28)]

Two characteristics of central bank monetary policy can help to reduce transition costs substantially. The first is transparency; that is, enabling observers to see and understand the central bank's goals and actions. The second is credibility; that is, the extent to which observers believe in the central bank's commitment to its stated goals. But neither of these two characteristics is necessarily present. The preamble to the *Bank of Canada Act*, for example, instructs the Bank to do a variety of things, some of which we recognize today to be contradictory; thus establishing transparency becomes more difficult. Credibility is even more elusive. While central bankers today have nothing good to say about inflation, for almost three decades they permitted and fostered rather high levels of it. The credibility of today's central bankers depends on a perception that they are distinctly different from those of yesterday, who may have talked a good line but failed in the end to deliver.

Central banks may not always be autonomous institutions, however. Thus while their officials may wish to promote price stability, their ultimate masters may have no such inclination. In Canada, the federal government is ultimately responsible for monetary policy. Though there is an attempt, through regular meetings between the Minister of Finance and the Governor of the Bank of Canada, to ensure that the Bank and the government are "singing from the same hymn book," the government has the ultimate power to issue a directive to the

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(26) M.J. Boskin, *Reagan and the Economy — The Successes, Failures and Unfinished Agenda*, Institute for Contemporary Studies, San Francisco, 1987, p. 88-89.

(27) Kevin Dowd, "The Costs of Inflation and Disinflation," *Cato Journal*, Vol. 14, No. 2, Fall 1994, p. 323.

(28) J. Selody, *The Goal of Price Stability: A Review of the Issues*, Technical Report No. 54, Bank of Canada, 1990.

Governor. Thus, in some instances, it is the appropriate level of government that must be credible, as well as the central bank.

In Canada, jointly set inflation targets help to establish transparency as they represent the only well defined and announced goal of the Bank's monetary policy. They also add to credibility, in the sense that they are set not just by the Bank but also by the Government of Canada, and can thus represent some commitment that fiscal policy will do its part to maintain price stability.

Our long history of inflation makes credibility a crucial element in the formation of inflation expectations. A whole generation has become accustomed to inflation and would be difficult to convince that price stability was now to be the norm. Any reversal of central bank policy would lead observers to question the credibility of the price stability commitment. This is precisely why so many are reluctant to support the Fortin prescription in the absence of conclusive evidence in its favour. If monetary policy was loosened, and this was found to be a mistake, the initial transition costs would have been in vain and the costs of re-establishing price stability would be even higher than they were originally.

Inflation is essentially a monetary phenomenon and any substantial change in it must be accompanied by a changing monetary stance; however, the government's budgetary constraint links fiscal policy to monetary policy, and could therefore affect it directly. At the very least, a change in fiscal policy could affect the credibility of a central bank's commitment to price stability.(29)

In simple terms, a deficit must be financed by selling interest-bearing bonds to the private sector or by printing money. If, as has been the case for much of the 1980s and 1990s, the interest rate exceeds the growth of the economy, government operating deficits lead to increasing debt-to-GDP ratios, an unsustainable policy for any government already burdened with a high debt load. The ability to run further deficits financed by bonds becomes compromised, increasing the likelihood that such fiscal policy would have to be financed by money creation. Fiscal policy characterized by large deficits is, then, inconsistent with monetary restraint.

This was precisely Canada's situation from the middle 1980s to the middle 1990s. Interest rates exceeded growth rates in the 1990s by a substantial margin. The operating balance

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(29) N. Wallace and T.J. Sargent, "Some Unpleasant Monetarist Arithmetic," in T.J. Sargent, *Rational Expectations and Inflation,* Harper & Row Publishers, 1986.

of the government was either in deficit or, if in surplus, was too small to constrain growth in the debt-to-GDP ratio. Consequently, markets saw fiscal policy as untenable. At the same time the Bank of Canada was talking about price stability; however, the government's fiscal policy was not consistent with the rate of monetary expansion required for price stability. Would the Bank's monetary policy put a brake on the unsustainable fiscal policy or would the fiscal policy make a mockery of the Bank's price stability goals? In the latter case, the Bank's anti-inflationary policy could lead to more inflation, because, by raising short run interest rates, it would exacerbate government deficits, in the absence of other offsetting fiscal measures, and aggravate the inconsistency in policy. If the central bank authorities were ultimately subservient to deficit fiscal policy, a more inflationary monetary stance would have to be adopted.

The two policies were inconsistent over the long term and there was some doubt as to which would prevail. Today, the sharp drop in the deficit and increase in the operating surplus have made fiscal policy clearly more consistent with the Bank of Canada price stability monetary policy. It did, however, take many years for this to become evident.

WHY THE TRANSITION TO LOW INFLATION WAS SO COSTLY

The poor performance of the Canadian economy in the 1990s requires an explanation. Professor Fortin argues that we are seeing the permanent cost associated with low inflation. His critics argue that there is no conclusive evidence to support that view. They stress the potential benefits of price stability and caution against abandoning the hard won gains associated with our present low inflation. Amongst other things, they claim that the current high unemployment rates still represent to some extent the temporary costs of disinflation. On the surface, this last claim is hard to accept. We have, after all, had low inflation in Canada since 1991. Surely this should be long enough to have accommodated the transition to a low inflation environment.

It must be remembered, however, that our history of low inflation followed more than two decades of high inflation. It is not so obvious that the Bank of Canada's policies were viewed as credible throughout most of the early 1990s. As Mr. Thiessen has recently remarked:

> Credibility takes a long time to establish and precious little time to undo once markets begin to doubt one's commitment to stated policy goals. While it is true that we now have four good years of inflation performance, we also have a legacy of some 20 years of high inflation. To put behind us. The only way to achieve this is by

> providing market participants ... with a strong sense of continuity in economic policy.(30)

With hindsight, we can pinpoint quite accurately the birthdate of the Bank's new-found interest in price stability. By the latter half of the 1980s, when monetary expansion was setting the stage for an increase in inflation, the new Governor of the Bank of Canada, Mr. John Crow, had begun to speak about the need for price stability. His most important such statement came in the Eric J. Hanson Memorial Lecture on 8 January 1988 in Edmonton, which is now viewed as a turning point in the conduct of Canadian monetary policy. It committed the Bank to a price stability goal over time, contrasting with previous Bank statements about the evils of inflation, which had proved to be more in the nature of platitudes than announcements of concerted action.

At the time, Mr. Crow's lecture did not seem to signal any obvious shift in monetary policy. Financial markets had heard the same tune before. The lack of time frames, targets and price measures also contributed to doubts about the Bank's new-found commitment to price stability. Moreover, projections in the federal budgets of 1988 to 1990 did not suggest that the federal government anticipated any significant change in the inflation performance. Indeed the higher inflation rates in the budgets were necessary to justify revenue projections.(31)

Three years later, in the 1991 federal budget, the Governor and the Minister of Finance jointly announced a set of inflation reduction targets: 3% by the end of 1992, 2.5% by the middle of 1994 and 2% by the end of 1995. A band of one percentage point above and below the targets was also established to allow some slight leeway in the conduct of monetary policy, in recognition of the temporary shocks that, from time to time, affect the financial system. While targets beyond 1995 were not established at that time, price stability, (the ultimate goal of this disinflationary policy) was said to mean a rate of price increase that was "clearly below two per

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(30) Bank of Canada, *Monetary Policy Report*, November 1996. This opening quotation comes from a speech the Governor gave to the London Chamber of Commerce in June 1996.

(31) G. Debrelle, "The Ends of Three Small Inflations: Australia, New Zealand, and Canada," *Canadian Public Policy*, XXII:1, 1996.

cent."[32] According to Deputy Governor Charles Freedman, it was obviously the intent to further reduce inflation after 1995.[33]

Moreover, early in this process, the federal government suggested, and the Bank recommended, amending the *Bank of Canada Act* to specify clearly that the goal of the central bank would be price stability and price stability only. This proposal was rejected by a parliamentary committee in February 1992, however, thereby somewhat undermining the Bank's commitment to that goal.

When Mr. Thiessen became Governor of the Bank of Canada in late 1993, he and Finance Minister Paul Martin extended the inflation targets to 1998, keeping the target band of 1% to 3% rather than reducing them, as had been originally suggested.

Market observers received confusing signals for several years about the future stance of monetary policy. Federal budgets did not predict lower inflation until 1991. Worse still, the actual conduct of fiscal policy was inconsistent with price stability. After Mr. Crow's 1988 address in Edmonton, the federal net debt-to-GDP ratio grew by more than one-third. It is only today that the ratio has been stabilized and we can be confident that it will fall significantly.

Fiscal policy fails to support monetary policy in another way. With inflation at less than 3%, the personal income tax system has effectively been de-indexed. A de-indexed system generates substantial revenues for the government in a world of inflation but is of no benefit in a world of price stability. By restoring full indexation to the tax system, the government would give up any fiscal gain from inflation,[34] thereby making any commitment to price stability more credible. That the government has not done so, leaves it with a strong fiscal incentive to maintain some inflation.

Finally, it is possible that the Bank of Canada has also contributed to excessively high costs of disinflation, not because of its policy but because of how that policy was implemented. A C.D. Howe Institute publication argues that the Bank's reliance upon interest

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(32) D.E.W. Laidler and W.B.P. Robson, *The Great Canadian Disinflation: The Economics and Politics of Monetary Policy in Canada, 1988-93*, C.D. Howe Institute, Policy Study, 1993.

(33) C. Freedman, "The Canadian Experience with Targets for Reducing and Controlling Inflation," in L. Leiderman and L.E.O. Svensson, *Inflation Targets*, Centre for Economic Policy Research, London, 1995.

(34) J.D. Konieczny,"The Optimal Rate of Inflation: Competing Theories and Their Relevance to Canada," in *Economic Behaviour and Policy Choice under Price Stability*, Proceedings of a Conference Held at the Bank of Canada, October 1993.

rates and the exchange rate as indicators of monetary conditions has several times caused it to tighten monetary policy needlessly when there was no threat of higher inflation. (35)

All these factors suggest that the costs of disinflation have been higher than necessary. Now that the Bank is seen as a credible inflation fighter and fiscal policy is finally supportive of price stability, further reductions in inflation targets might be less costly. Also important is the fact that that Canada can clearly pursue a lower inflation policy than the United States with correspondingly lower nominal interest rates.

CONCLUDING COMMENTS

The Bank of Canada and the Government of Canada are both committed to the goal of price stability. Though today we have inflation rates below any for decades, most would agree that price stability has not yet been achieved.

In deciding where to go with inflation targets after 1998, the government will undoubtedly take into account the performance of the economy in the 1990s. What does that performance tell us?

Three possibilities come to mind. The first, that the economy was affected largely by non-monetary policy factors, whose solution lies in other forms of government policy, is not dealt with here. The other possibilities are two views of monetary policy. One is the view of Pierre Fortin: monetary policy designed to maintain low inflation has imposed large and permanent costs on the economy. The second view is that the high unemployment of the 1990s came about because expectations of high inflation were slow to adjust to falling rates and the Bank of Canada commitment to low inflation originally lacked credibility. Unfortunately, these two views of monetary policy could have affected the economy in similar ways. A superficial glance at macro-economic indicators provides support for both.

The distinction between these two competing explanations will become clearer over time. Professor Fortin suggests that the costs of the present policy are permanent, whereas those in the opposite camp suggest that the costs are temporary. If the current strong economic expansion continues, it is the latter explanation that will receive more credence.

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(35) K.J. Boessenkool, D.E.W. Laidler and W.B.P. Robson, “Devils in the Details: Improving the Tactics of Recent Canadian Monetary Policy,” C.D. Howe Institute Commentary, No. 79, April 1996.