Canada's Exchange Rate Options

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The Idea of a Monetary Order

Canada has had a flexible exchange rate continuously in place for the better part of three decades. A great deal has changed in the interim, including our understanding of the economics of monetary policy; and a new debate about the relevant issues is surely welcome. The exchange rate regime, however, is but one element in a broader set of arrangements that we may call the *monetary order*, and policy toward it can only be discussed coherently in this broader context.

By the phrase *coherent and liberal* monetary order I mean a set of arrangements whereby (a) monetary policy has a well-defined goal; (b) the authorities charged with achieving that goal have the powers needed to achieve it; (c) too often overlooked, but of crucial importance, private sector agents, or at least a representative majority of them, understand that goal, expect it to be pursued, and base their own actions on that expectation;[1] and (d) the relevant policy-making authorities are accountable to the electorate both for their choice of policy goal and for their performance in pursuing it, while being insulated against temptations to indulge in politically opportunistic measures.

Canada's Current Monetary Order

Though Canada has had a flexible exchange rate since 1970, a coherent monetary order was not well established here until some time in the mid-1990s, when inflation expectations finally stabilized at a level compatible with the *inflation control targets* that had been introduced in 1991 to define the goals of monetary policy. A flexible exchange rate is a necessary component of the current monetary order, but it is quite inappropriate to generalize from evidence generated in the 1970s and 1980s in criticizing this arrangement, because deeper seated problems with the altogether less coherent monetary orders then ruling, rather than their flexible exchange rate component per se, created the economic difficulties of those decades.[2]

The means of maintaining political accountability within Canada's current monetary order are complex. The inflation targets themselves are jointly agreed between the minister of finance and the Bank of Canada, while the Bank's conduct of policy is subject to a variety of more or less formal mechanisms, which range from the regular publication of a semi-annual *Monetary Policy Report*, through public appearances by the governor and other members of the Bank's Governing Council before Parliamentary committees, and regular private discussions between the governor and the minister of finance, to the oversight exercised by the Bank's directors on behalf of the Government of Canada (the Bank's shareholder) over the competence of its management, not to mention the power of those directors to appoint the governor and his senior deputy, with both appointments being subject to Cabinet approval. And of course, the minister's Directive power is embodied in the *Bank of Canada Act*, though, under the Dual Responsibility doctrine which insulates monetary policy from undue political influence, his use of it would trigger the governor's resignation.

The Role of the Exchange Rate

Canada's trade is overwhelmingly with the United States and it is natural, therefore, to put the bilateral Canadian-US dollar exchange rate at the centre of any discussion of exchange rate issues. Here, it is important to recall that the composition of output differs significantly between Canada and the United States, with primary commodities, and other products heavily dependent on them, playing a much more important role in Canada. This fact in turn opens up the possibility, indeed the near certainty, that from time to time the *real* Canadian-US exchange rate — the relative value of a representative Canadian-produced bundle of goods and services in terms of its US counterpart — must change, regardless of the regime governing the behaviour of the nominal exchange rate.

Given Canada's current monetary order, these changes are naturally and properly accommodated by variations in the nominal exchange rate, because monetary policy is geared to holding domestic inflation on track. That basically is what happened during 1998, and it is a mystery that some commentators have argued that the exchange rate's decline in the face of a major terms-of-trade deterioration provides evidence of some serious systemic malfunction. On the contrary, a monetary order that combines domestically chosen inflation targets with a flexible exchange rate is supposed to deal with just this kind of shock in just this way. When an open economy is hit by an adverse external real shock such as a fall in the world price of some key export, its real exchange rate, not to mention its real income, must fall. If the currency is not permitted to depreciate, domestic money wages and prices must decline instead; if these are sticky, the adjustment process will be drawn out and difficult, involving losses in real output and employment which, even if formally speaking temporary, need be neither short-lived nor trivial. These problems can be ameliorated by allowing the nominal exchange rate to depreciate.[3]

The differences in flexibility between labour and goods prices on the one hand, and the exchange rate on the other, can, however, cut both ways, particularly for an economy such as Canada's which trades heavily with one, bigger partner. A stable-domestic-inflation monetary order, though viable, may be costly to maintain in the face of monetary instability in the United States. With sticky money wages and prices in both economies, the first round effects of such instability will be concentrated on the exchange rate, which will temporarily over-adjust to them.[4] The fact is that no exchange rate regime can insulate an economy from monetary instability in a major trading partner. A constant exchange rate will distribute its costs economy-wide as the domestic inflation rate varies with that of the partner, while a flexible rate will permit domestic inflation to be stabilized, but will concentrate costs on tradable goods sectors.

Even so, the observation per se that a flexible exchange rate moves, and sometimes by quite significant amounts, is not necessarily evidence that the movements in question are inappropriate.[5] The basic question to be asked is whether it can misbehave even when the rest of the monetary order of which it is a component is well configured. Canada's real exchange rate vis-à-vis the United States has been shown to be systematically related to certain important relative prices. Specifically, an equation that makes it a function of world commodity prices excluding energy, and of the price of energy, has proved remarkably stable over the last three decades, and the shorter-term performance of the equation is enhanced by allowing the interest rate differential between the two countries to also have an influence.

Questions about whether the foreign exchange market is itself the source of non-fundamental driven fluctuations in the real exchange rate have been investigated by Murray, van Norden and Vigfussen (1996), who studied the residuals from the predictions of this equation.[6] Their work suggests that apparently excessive exchange rate variations have

arisen from time to time, but that, crucially, market forces themselves seem to work systematically more strongly to eliminate them as they become large. Thus, widely held suspicions that Canada's flexible exchange rate has itself been the source of serious and potentially destabilizing fluctuations seem to be greatly exaggerated.

This evidence does not, however, come to grips with another criticism of Canada's flexible exchange rate which has attracted a good deal of public attention recently, namely John McCallum's (1998*a*) conjecture that its operations have had an adverse influence on the rate of labour productivity growth in Canadian manufacturing.

A number of factors cast doubt on this conjecture. First, the postulate of non-profit-maximizing behaviour that underlies it is theoretically odd.[7] Second, Andrew Sharpe's (1999, Table 6) results suggest that total-factor, as opposed to labour, productivity in Canadian manufacturing almost kept pace with that in the United States in the 1980s, and marginally outstripped it in the 1990s. Third, there are large differences among sectors: Sharpe shows that machinery and electronics manufacturers are doing particularly well in the US, while Baldwin (1995, 1996), shows that small manufacturers have performed particularly badly in Canada in terms of labour productivity. Finally, according to Peter Spiro (1999) there have been large differences in labour productivity growth rates in manufacturing among Canadian provinces over the 1987-97 period, with Alberta and Ontario performing as well as the United States, Quebec lagging a little, and British Columbia lagging far behind. All this suggests that the factors driving Canada's productivity performance are often industry- and province-specific, and it is hard to reconcile this evidence with a single macroeconomic factor, such as the exchange rate, having played a central role in undermining productivity growth.[8]

Those who favour a monetary order based on domestically chosen inflation targets and a flexible exchange rate are, therefore, entitled to an "if it isn't broken, don't fix it" defence of their preferred regime. But that regime does not always work to a textbook level of perfection, and they should therefore be willing to entertain the possibility that it would pay to trade it in on a newer model that might function better, a matter to which I now turn.

North American Monetary Union as a Monetary Order

The creation of the European monetary union (EMU) has attracted much attention recently, and some commentators, notably Courchene (1998) and Grubel (1999), have suggested that Canada might make the creation of a North American monetary union (NAMU) involving itself, the United States and perhaps Mexico, a policy goal for the long run. Such an arrangement would, of course, amount to a monetary order radically different from the one now in place, but from a technical economic point of view (and setting aside the question of how Mexico might fit into such an arrangement, which would require a paper in and of itself were it to be treated with the care it deserves), it would be coherent, provided that the assumption that the United States currently has and will maintain a stable monetary order of its own in place is accepted.

About a third of everything produced in Canada is sold in the United States, a higher proportion than that ruling with respect to trade between most individual members and the rest of the EMU, and capital already flows freely between the two countries. For them to adopt a single money, presumably by way of Canada joining the United States monetary system, would significantly reduce transactions costs for all concerned.[9] Furthermore, the costs to Canadian firms and households of adapting to a new domestic unit of account would be minimal, since they already have considerable familiarity with the United States dollar. As to the all important matter of the compatibility of private sector expectations with the outcome of the monetary authorities'

activities, the fact that such a monetary union would involve extending the geographic boundaries of an already existing monetary order, rather than establishing a new one, should make Canadian adaptation to it relatively straightforward.

The one major economic drawback to NAMU arises from two facts: first, within its boundaries, currently existing legal barriers to intercountry labour mobility would presumably remain; and, second, Canada is still relatively heavily concentrated in commodity-based exports. Therefore, real exchange rate changes coming from shocks to world prices for these products, acting in combination with wage and price stickiness, would continue to present a problem, and their effects on labour markets would have to be absorbed, as they are now, within Canada's borders.[10] These matters would be much easier to manage in the presence of a high degree of cross-border labour mobility. Issues about how large a fraction of the Canadian labour force has ready access to the United States, and about whether that fraction includes a significant number of Canadian workers who are vulnerable to terms-of-trade shocks, need to be addressed before we jump to the conclusion that the establishment of NAMU would complete the creation of a single North American economic space.[11]

The economic case for NAMU is anything but clear, then, and such an arrangement would also raise the difficult political problem of ensuring the accountability of the monetary authorities of such a union to the Canadian electorate. It is hard to see Canada being any more important in such an arrangement than a thirteenth district of a widened Federal Reserve System, represented by what had been the Bank of Canada; the governor of the Bank — presumably now a "president" — might even be given the privilege of a permanent vote on the Federal Open Market Committee. But even that, surely the very best that could be expected, and by no means to be taken for granted, would provide no mechanism whereby those in charge of monetary policy could be made specifically accountable to the Canadian electorate. One cannot imagine any president of the United States giving up his authority to appoint the governors of the Federal Reserve system who form a permanent majority in making monetary policy for the United States at present, or the United States Congress sharing its powers under the *Humphrey-Hawkins Act* with the Canadian Parliament.[12]

Furthermore, there is more to a monetary union than monetary policy, and to realize fully the savings in transactions costs, which are one of the chief attractions of such an arrangement, the Canadian financial system would have to be, to some degree, integrated into the American system. No doubt the common element in the regulatory framework needed to bring this about could be negotiated, but it is hard to believe that its features would not mainly reflect American political priorities.

NAMU would thus require a good deal of *de facto* political integration between Canada and the United States, as far as monetary policy and associated regulatory issues were concerned. In Western Europe, where political integration has been a serious item in its own right on the agenda from the very beginnings of the Common Market, there are questions about whether there has yet developed a sufficiently strong set of European Union-wide political institutions to support EMU. The North American Free Trade Agreement (NAFTA), on the other hand was, and remains, much more an economic than a political arrangement, and provides no supranational institutional base from which to launch a monetary union.

All this may change in due course, but the institutional developments necessary to support NAMU in the relevant future — Courchene (1998) has suggested a time horizon of a decade — would seem to require the Canadian electorate to delegate important decisions to the United States, without being granted any effective representation there. To raise this issue is not to embrace economic nationalism as a defence of Canada's current monetary order,

but simply to note that this order is compatible with basic liberal democratic principles in a way that NAMU would not be.

A Pegged Exchange Rate

Courchene (1998) has proposed NAMU only as a long-term possibility, and the rhetorical role played by this option among critics of Canada's current monetary order is sometimes to create "confidence by association" in the altogether less radical alternative system that they actually advocate for the immediate future, namely a traditional pegged — sometimes called "fixed" — exchange rate.[13] All that would be required to adopt this option would be for the minister of finance to instruct the Bank of Canada henceforth to exchange, on his behalf, Canadian for United States dollars in unlimited amounts, and within a fixed, narrow price range. No other formal changes to the monetary system would be needed.

Such action would replace the inflation targets that currently form the anchor of Canada's monetary order with a commitment to stabilize the exchange rate. Even though inflation targets in Canada, unlike New Zealand, rest only on an administrative agreement between the minister and the Bank of Canada, and have no legislative basis, they are subject to the Dual Responsibility doctrine that has, since 1961, underlain the formulation and implementation of monetary policy in Canada, and a dispute about them between the minister of finance and the Bank of Canada, could therefore, in the extreme case, trigger a directive and the resignation of the governor.[14] This arrangement imposes an important constraint on any minister's opportunistic exercise of discretion over the goals of monetary policy, contributes to their credibility, and hence underpins the coherence of the current monetary order.

In contrast to this, under the *Bank of Canada Act*, the Bank acts as the minister's agent in the foreign exchange market. It would not, therefore, have the same room to resist a decision about the exchange rate once a pegged rate regime was in place. The adoption of the latter would shift authority over monetary policy decisions toward the minister, and enhance the role of political discretion in the monetary order, at precisely the point where, given the proclivity of the *real* Canada-US exchange rate to shift, that order would be particularly vulnerable. Pressure on a pegged exchange rate to appreciate can always be resisted, of course, because Canadian dollars can be printed and sold to hold the rate down, but downward pressure is a different matter, given that foreign exchange reserves are necessarily finite.

To resist pressure originating in an adverse shock to the real exchange rate would, on the assumption that price inflation in the US remains negligible, require downward movements of the Canadian price level, and perhaps of the money wage level, too. These pressures would be exacerbated by higher interest rates needed to attract an extra capital inflow sufficient to offset the trade account deterioration that would persist until the real exchange rate was back in equilibrium, and, in the presence of nominal stickiness, higher unemployment and lower output would be integral components of this adjustment. Furthermore, and practically very important, any doubts about the authorities', more specifically the minister of finance's, ability to withstand the political pressures implicit in letting this adjustment mechanism take its course would lead to movements out of, rather than into, Canadian dollar assets, and to further upward pressure on interest rates, as the monetary authorities continued to offer one-way bets to speculators.

To put it simply, the kind of change in fundamentals that produces a depreciation under a flexible exchange rate while permitting the inflation-target anchor of the monetary order to remain firmly in place, can lead to a foreign exchange crisis under a pegged rate. And such crises are all too often resolved by devaluation, or the re-establishment of a floating rate.[15] In the specific case of Canada, this outcome would be all the more likely because the

legal framework places the power to devalue or float the currency firmly in political hands. In the light of all this, it is hard to see how a particular value for a pegged exchange rate could ever gain the same degree of credibility as a target inflation rate, and hence to see how a monetary order that put such an arrangement at its centre could ever be as coherent as the one that Canada now has in place. It is alarming that proponents of a pegged exchange rate are using discussions of NAMU as a cover for this altogether less radical, but dangerous, proposal

A Postscript on Dollarization

Finally, a few comments are in order on the suggestion that the demise of the Canadian dollar is inevitable, so that the only viable choice facing Canada is between negotiating the best NAMU arrangement that can be obtained or being integrated by market forces into the American monetary system. We have certainly seen the latter tendencies at work in a number of Latin American countries, not to mention Israel, over the years, but always in conditions of domestic monetary instability. To the best of my knowledge, however, a currency characterized by low and stable inflation, and underpinned by responsible fiscal policy, such as the Canadian dollar now is, has never been voluntarily abandoned as the collective outcome of individual choices.

This does not mean that Canadian companies producing a large part of their output for the United States market will not continue to borrow or issue equity denominated in US dollars, or that senior employees of multinational companies who expect to move among bases in Canada and the United States in the course of their careers will not continue to receive a fraction of their compensation in US dollars, or that savers who are entertaining the prospect of spending a substantial amount of their time during retirement in locations with less bracing winters than those offered by Canada will not continue to accumulate a fraction of their retirement savings in US dollars, etc.

But these agents will be hedging against the exchange rate risk to which economic life in an extremely open economy exposes them, not demonstrating a lack of confidence in Canadian monetary and fiscal policy under a flexible exchange rate; nor would any fixed exchange rate regime short of full monetary union render such hedging much less attractive. No doubt the widespread economic sophistication that underlies such behaviour will limit the Bank of Canada's future freedom of action, not to mention that of the fiscal authorities, but in the direction of reinforcing, rather than undermining, domestic monetary and fiscal stability.

Furthermore, there is no sign that the United States wishes to encourage any other country to adopt the US dollar as its own currency, whether through market forces or by political design. Shortly before his appointment as secretary of the treasury, Larry Summers remarked, in the context of Argentina's official and very public consideration of the dollarization option, that

> it would not ... be appropriate for United States authorities to adjust their bank supervisory responsibilities, access to the Federal Reserve discount window, or the procedures or orientation of U.S. monetary policy in the light of another country's decision to dollarize its monetary system (Summers 1999).

All in all, there seems to be no threat of "dollarization" that will force Canada to fix its exchange rate, or propose the creation of NAMU. These possibilities should be considered on their own merits in the firm expectation that the status quo remains a viable option. To suggest otherwise is to attempt to pre-empt discussion of those merits by a spurious appeal to historical inevitability.

Notes

The author is Professor of Economics at the University of Western Ontario and Adjunct Scholar at the C.D. Howe Institute. This note draws heavily on a longer paper "The

Exchange Rate Regime and Canada's Monetary Order" (Bank of Canada Working Paper 99-7), written while he was Special Adviser and Visiting Economist at the Bank of Canada. Helpful comments from Pierre Duguay, Chuck Freedman, Paul Jenkins, Clark Leith, John Murray, James Powell, Ted Requard, Larry Schembri, Peter Spiro, and Mark Zelmer are gratefully acknowledged. The views expressed herein are the author's, and do not necessarily reflect those of either the Bank of Canada or the C.D. Howe Institute.

[1]Heymann and Leijonhufvud (1994) stress the congruence of private agents' expectations with the conduct of policy as a key feature of a sustainable monetary order.

[2]Between 1970 and 1991, it is possible to identify three separate monetary orders in Canada. The first, from 1970 to 1975 seemed to have no well-defined anchor. The second, from 1975 until about 1981 tried to make good this deficiency with a target growth rate for M1, and the third from 1981 to 1991, when explicit inflation targets were introduced, was based on an eclectic approach to monetary policy which placed increasing emphasis on "price stability" with the passage of time.

[3]This brief statement of the argument ignores certain complications that ought not to be overlooked entirely. In particular, in response to, say, a fall in commodity prices, the structure of domestic relative prices must also change. An exchange rate depreciation alone will not bring these changes about in the required magnitudes; even so, by increasing the profitability of manufactured exports and import substitutes, it will help those sectors to absorb factors released from others, including the resource and import sectors, with less downward pressure being put on the nominal rewards of factors already employed there. These relative price changes would have to take place, regardless of the exchange rate regime. Thus, Courchene's recent (1998, pp. 21-22) argument that disturbances to commodity markets would leave Canadian manufacturers unaffected were it not for the nominal exchange rate changes that they induce under current arrangements is not correct.

[4]The *locus classicus* for this exchange rate overshooting argument in the modern literature is Dornbusch (1976).

[5]Perhaps it should be noted explicitly that the Purchasing Power Parity theory, which is widely deployed nowadays to calculate the "fundamental" value of the Canadian exchange rate (e.g., Harris 1993; and Courchene 1998) has long been known to be utterly inadequate for this purpose. The definitive critique of it remains that of Keynes (1923, pp. 70-86). Quite apart from anything else, this theory has, as a basic premise, the postulate that the equilibrium real exchange rate is a constant.

[6]I am referring here to an equation largely developed by Bank of Canada researchers. See Murray *et al.* (1996) for references to this work. Note that energy prices enter this equation with a negative sign, implying that, for example, a fall in the price of oil strengthens the Canadian dollar, and vice versa, a result that can be rationalized by noting that Canadian manufacturing exports are particularly energy intensive. Note also that McCallum (1998*b*) has suggested that the level of Canada's public debt may usefully be added to such an equation, and that Dale Orr (1999) also puts considerable emphasis on this variable. I do not wish to rule out the possibility that this variable is important, but its importance in the Bank of Canada's equation seems to be sensitive to the period over which it is estimated. This matter needs more research.

[7]Stephen J. Nickell (1996, pp. 726-28) gives a useful account of a number of models of firm behaviour in which productivity performance may be influenced by the extent of the competitive pressures to which the firm is exposed, and concludes that "Overall ... there is some theoretical basis for the belief that competition drives productivity improvements forward. But the basis is not, as yet, a strong one" (p. 728).

[8]Baldwin (1995) suggests that this force might have been at work in the mid-1980s, while Baldwin and Caves (1997) suggest that the balance of a rather thin body of available empirical evidence points to a positive effect of foreign competition on productivity growth.

[9]I do not believe that a common currency arrangement under which the United States would give up their dollar in exchange for a new currency such as Grubel's (1999) Amero is politically viable. Germany gave up the Mark for the Euro in exchange for crucial French support for reunification. I can think of no parallel inducement that might be available in the US case.

[10]It can be argued that agents, who cannot rely on exchange rate movements to help adjust relative prices for them, are likely to develop other means of accomplishing this. Under NAMU, therefore, perhaps the degree of wage-price stickiness in Canada might eventually

diminish. It is difficult to know how much credence to give to this argument. Many commentators on EMU agree that its success will depend crucially upon the extent to which its creation leads to a loosening of market rigidities in Europe. The outcome here will be worth monitoring.

[11]Nevertheless, it is worth noting that, as John Crow (1998) has pointed out, one important reason for the United States supporting the inclusion of Mexico in the North American Free Trade Agreement (NAFTA) was to reduce the incentives for Mexican workers to migrate illegally to the United States. Hence the foregoing arguments apply to Canada-US labour mobility, and not within NAFTA as a whole, and are more relevant to a Canada-US monetary union than to one involving the whole of North America.

[12]Courchene (1998) has suggested that the Bank of Canada would have a degree of influence within NAMU similar to that likely to be exercised by the Bank of France within the EMU. Since the Bank of France represents the second largest among 11 national economies within EMU, and the Bank of Canada would represent one very small economy out of two, or three were Mexico a member, within NAMU, I am unable to understand the basis of this argument. Perhaps it stems from a misapprehension that the presidents of the 12 district Banks, as opposed to the federally appointed governors of the Federal Reserve System, currently exercise a decisive influence on US monetary policy.

[13]Harris (1993) has long advocated such an arrangement, without the cover of a NAMU proposal. Space constraints prevent discussion of the more robust Currency Board or Legislatively Fixed exchange rate options here. I have dealt with them in the paper (Laidler 1999) on which this note is partly based.

[14]On this matter, see Thiessen (1998/1999).

[15]Osakwe and Schembri (1998) record no fewer than 21 foreign exchange crises under fixed exchange rates since 1990, of which 17 ended in devaluation and/or the adoption of a floating exchange rate.

References

Baldwin, J. R. (1995), *Productivity Growth, Plant Turnover and Restructuring in the Canadian Manufacturing Sector*, Research Paper No. 87 (Ottawa: Statistics Canada).

____ (1996), *Were Small Producers the Engines of Growth in the Canadian Manufacturing Sector in the 1980s?* Research Paper No. 88 (Ottawa: Statistics Canada).

Baldwin, J.R. and R.E. Caves (1997), *International Competition and Industrial Performance: Allocative Efficiency, Productive Efficiency, and Turbulence*, Research Paper No. 108 (Ottawa: Statistics Canada).

Crow, J. (1998), "Any Sense in a Canadian Dollar?" (Toronto: unpublished paper).

Courchene, T.J. (1998), "Towards a North American Common Currency: An Optimal Currency Area Analysis," (Kingston: Queen's University, unpublished paper).

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

Grubel, H. (1999), "The Case for the Amero: The Merit of Creating a North American Monetary Union," (Vancouver: The Fraser Institute, unpublished paper).

Harris, R. G. (1993), *Trade, Money and Wealth in the Canadian Economy*, 1993 Benefactor's Lecture (Toronto: C. D. Howe Institute).

Heymann, D. and A. Leijonhufvud (1994), *High Inflation* (London: Oxford University Press).

Keynes, J.M. (1923), *A Tract on Monetary Reform* (London: Macmillan).

Laidler, D. (1999), "The Exchange Rate Regime and Canada's Monetary Order," Working Paper No. 99-7 (Ottawa: Bank of Canada).

McCallum, J. (1998*a*), "Drivers of the Canadian Dollar and Policy Implications," *Current Analysis*, 2(9) (Toronto: Bank of Canada).

____ (1998*b*), "Government Debt and the Canadian Dollar," *Current Analysis*, 2(10) (Toronto: Bank of Canada).

Murray, J., S. van Norden and R. Vigfusson (1996), *Excess Volatility and Speculative Bubbles in the Canadian Dollar: Real or Imagined?* Bank of Canada Technical Report No. 76 (Ottawa: Bank of Canada).

Nickell, S. J. (1996), "Competition and Corporate Performance," *Journal of Political Economy* 104 (Oct.):724-46.

Orr, D. (1999), "The Canadian Dollar: Why Do Such Bad Things Happen in Such a Good Economy?" (Ottawa: WEFA).

Osakwe, P. and L. Schembri (1998), "Currency Crises and Fixed Exchange Rates in the 1990s: A Review," *Bank of Canada Review* (Autumn):23-38.

Sharpe, A. (1999), "New Estimates of Manufacturing Productivity Growth for Canada and the United States,"

(Ottawa: Centre for the Study of Living Standards, unpublished paper).

Spiro, P. (1999), "Provincial Breakdown of Manufacturing Productivity Growth" (Toronto: Macroeconomic Analysis and Policy Branch, Government of Ontario, unpublished paper).

Summers, L. (1999), "Overcoming Volatility: Latin America and the IBD," remarks to the Inter-American Development Bank Annual Meetings Paris, France, 15 March, unpublished paper.

Thiessen, G. (1998/1999), "The Experience with Targets for Inflation Control in Canada," The 1998 Gibson Lecture, *Bank of Canada Review* (Winter):89-107.