

**Monetary Cooperation in the North
American Economy**

by

David Laidler

Working Paper # 2006-4

September 2006



***RBC Financial Group
Economic Policy Research Institute
EPRI Working Paper Series***

Department of Economics
Department of Political Science
Social Science Centre
The University of Western Ontario
London, Ontario, N6A 5C2
Canada

This working paper is available as a downloadable pdf file on our website
<http://economics.uwo.ca/centres/epri/>

MONETARY COOPERATION IN THE NORTH AMERICAN ECONOMY*

by

DAVID LAIDLER

Abstract: The economic integration of North America, unlike that of Europe, has no parallels on the political front, and U.S. economic and political interests are world-wide, while those of Canada and Mexico are predominantly regional. These facts have important implications for the degree of policy integration, not least in monetary matters, that is feasible within NAFTA. Each member has an interest in the monetary stability of the others, but a common currency - even a pegged exchange rate system - is not desirable without a significantly greater degree of labour market integration than currently exists, and without a willingness on the part of the U.S. authorities to subordinate national to regional interests in their policy making. Absent these pre-conditions, monetary stability within NAFTA is best achieved by each country pursuing its own domestic stability, while maintaining the current high degree of formal and informal communications about economic conditions and policy intentions implicit in current arrangements.

Keywords: NAFTA, economic integration, currency unions, exchange rate regimes, monetary policy, inflation targets.

JEL Classifications: E41, E 58, E61, F15, F33, F42.

*This paper, completed in 2005, has been recently published in John M. Curtis and Aaron Sydor (eds) *NAFTA @ 10*, Ottawa, Minister of Public Works and Government Services Canada, 2006, and is reprinted in this *Research Report* series by kind permission of the editors of that volume. It draws on previous work that the author has carried out at the C. D. Howe Institute with Shay Aba, Finn Poschmann and Bill Robson, who are not to be held accountable for any errors and omissions among its contents; nor are John Murray, John Curtis, Aaron Sydor, an anonymous referee, and once again Bill Robson, who provided invaluable comments on earlier drafts.

I Asymmetries in North America's Monetary Order

Canadians are sometimes tempted to treat North American economic integration as a project to be pushed forward or resisted, depending on their economic and political preferences, but that is not quite right. Rather, North American economic integration is an already well established fact of life, which has to be managed. Clearly, the way in which it is managed will affect its prospects of deepening or unwinding, but there is no way of avoiding the day by day task of coping with it. It is in this context that Canada's monetary arrangements must be discussed. Even though the Canadian dollar's use is largely confined to Canada, to analyse the country's choice of monetary order from a purely domestic viewpoint is to miss a vital element in the constraints subject to which that choice must be made.

Other facts require attention here too, involving fundamental asymmetries that mark economic relations between Canada and the United States, not to mention Mexico.¹ Among these, the most immediately obvious, namely the relative economic sizes of the three countries, is the least important. Of much greater significance is the matter of their very different economic places in the world economy. To begin with, when it comes to Canada's trade in goods and services, and Mexico's too, the US is, to all intents and purposes, the "rest of the world". In round numbers, a little more than four fifths of the smaller countries' exports, (amounting to about a quarter of GDP in the Canadian case) go to the US. Canada is, to be sure, the US's largest single trading partner, but Asia and Europe are close runners up here, and there is no Canadian, let alone Mexican, dominance in US trade, to match that of the US in Canada and Mexico.

This fact alone implies that, though North American economic relations provide an appropriate context for the analysis of Canada's monetary choices, and of Mexico's too, the relevant background for the US is the international economy taken as a whole. The matter goes much deeper, however. Not only is the US a leading player in the world trading system, but, as McKinnon (2002) has stressed, its currency is dominant as a means of payment, unit of account and store of value for the international economy.

¹The place of Mexico within North America is an under-discussed topic in the Canadian literature on North American monetary issues. The reader is warned that this paper probably pays too little attention to the issues involved here, which surely require a major study in their own right to bring them into focus..

The US dollar is the international economy's money of choice, as well as being a domestic currency, and Benjamin Cohen (2003) has recently pointed out that this fact creates an important set of opportunities and incentives for the US that it is dangerous to ignore. First of all, the US is able to extract seigniorage, not just from its own citizens, but from users of the US dollar world-wide, and has no incentive to share this revenue with any other North American country. More importantly, US firms, including financial institutions, gain a competitive advantage in international markets from the latter's reliance on the US dollar. The US government too derives considerable international political influence - soft power - from its ability to affect the international financial climate, and the way in which it impinges on particular countries; and in some rare cases it derives a useful degree of hard power too - Cohen reminds his readers of the case of Panama in the final days of the Noriega regime.

It is also worth recalling that, as with those of any other country, US monetary institutions are the product of a specific history.² In this case, a strong strain of monetary populism, that has sometimes taken on nationalist and even isolationist overtones, runs through the history in question. That a nation's monetary system should be organised and run for the benefit of its inhabitants is a difficult idea to object to, and it is deeply embedded in the US political psyche. The importance of this idea helps to explain why the Federal Reserve system, which styles itself as "independent *within* the government" (my italics), routinely operates with one eye firmly fixed on the White House and the Congress.³ But more important in the current context, it also explains why the United States has long been particularly jealous of its sovereignty in international monetary affairs. This fact was reflected in such important matters as US reluctance to live by the rules of the gold-standard game in the 1920s, and in the design of the White plan that formed the basis for the reconstruction of the international monetary system after the Second World War.

Of less historical importance, but of more immediate relevance, the same quintessential US concern with monetary sovereignty that was at play in these earlier episodes also underlay the sharp and much quoted rebuff administered by Assistant Secretary of the Treasury Lawrence

²Richard Timberlake (1993) provides an excellent single volume account of the evolution of monetary institutions and monetary policy in the United States from their foundation.

³As is evident from the studies of Allan Meltzer (2003) and Thomas Mayer (1999)

Summers in 1999 to Argentina, and by implication to other countries that were considering dollarization at that time, once it became clear that they were also hoping that such a step on their part would lead the US authorities to begin to take their interests into account in future policy decisions.

. . . it would not be appropriate for the United States authorities to extend the net of bank supervision, to provide access to the Federal Reserve discount window, or to adjust bank supervisory responsibilities or the procedures or orientation of US monetary policy in the light of another country deciding to adopt the dollar (Summers, 1999)

This was not an isolated remark by a particular official, but rather a statement of the Clinton Administration's policy on this issue, which was re-iterated the following year by the then Assistant Secretary of the Treasury for International Affairs in testimony to the US Senate, as David Howard, Deputy Director of the Division of International Finance the Board of Governors of the Federal Reserve pointed out in (2003). And Howard, speaking for the Federal Reserve System, also remarked at that time, that

The decision of a country to dollarise creates no obligations on the part of the Federal Reserve towards that country. In particular, the Federal Reserve is not obliged to act as a lender of last resort to financial institutions of officially dollarised countries, supervise their financial institutions or take into account their economic and financial conditions when setting monetary policy. (Howard, 2003, p. 153)

Now these statements do not mean that the US will never take specific monetary measures that are in the interests of other countries. It would obviously do so when such measures were also in its own interests. Furthermore, though Howard (2003) noted explicitly that "there is no reason to think that the Bush Administration has a different view on dollarisation" from that of its predecessor, he was also careful to point out, as befitted a representative of Federal Reserve system, that "US policy on dollarisation could well evolve over time as circumstances change".

Nevertheless, there seems to be no reason to expect an early change of attitude here. The parallels that have sometimes been drawn between possible future US actions, and those of Germany, which recently surrendered control over its own very successful monetary policy by

adopting the Euro, are surely misleading. Substituting the Euro for the Deutschmark was not so much an act of altruism on Germany's part as it was a sacrifice necessary to obtain support and acceptance elsewhere in Europe for the its own reunification. Furthermore, European monetary unification is part and parcel of a wider ranging program of economic and political integration that has been going on in Europe since the end of the Second World War, and is driven by profound historical forces whose origins long antedate that war. No similar political dynamic seems to be present in North America, now or in the foreseeable future, that would undermine the United States long standing commitment to putting domestic priorities first in monetary matters.

II Recent Canadian Discussions of Monetary Integration

Debate about monetary arrangements has been very much on the agenda in Canada over the last four or five years, with a number of prominent commentators, for example Herbert Grubel (1999) and Thomas Courchene and Richard Harris (1999), advocating the creation of some sort of monetary union in North America, perhaps based on the NAFTA and therefore including Mexico, or perhaps involving only Canada and the United States. Some observers, for example Sherry Cooper (2001), have gone so far as to suggest that such monetary integration is in any event evolving as the irresistible consequence of market forces, that policy measures designed to prevent it are futile, and that a policy of actively embracing the inevitable is to be preferred.

The attention paid to these proposals until quite recently drew some of its energy from a "me too" reaction on the part of some North Americans to the launch of a virtual European currency in 1999 and to the introduction of Euro notes and coins in 2002: if an economically integrated Europe found a common currency desirable, then so perhaps should an economically integrated North America. But their resonance with the Canadian public probably had much more to do with the decline of the Canadian-US dollar exchange rate in the wake of the Asian and Russian crises of 1997-98, which culminated in its reaching an all time low of about 62 cents in 2002. This decline gave forecasts that the Canadian dollar was bound for extinction a superficial claim to plausibility among the public, and ensured that many who remained skeptical about this likelihood nevertheless became concerned about their future living standards.

There is no need here to enter into a long and sustained rebuttal of the case that Canadian proponents of North American monetary integration have advanced. Suffice it to note that many of its elements have failed to stand up to scrutiny. Specifically: it was soon noted that European Monetary Union was intended by its architects, not as a response to a process of continental economic integration that might bear some resemblance to similar tendencies in North America, but as a means of advancing a project of political integration that had no parallel at all on this side of the Atlantic. Anecdotal evidence of a rapid voluntary spread in the use of the US dollar within Canada in traditional monetary roles, furthermore, proved to be false; upon examination of the data, it turned out that dollarization was at a low level in Canada, was growing slowly at best, and not on all measures.⁴ As to claims of a dramatic fall in Canadian living standards brought about by a declining currency, these ran into the awkward fact that the latest period of exchange depreciation also saw a rapid and sustained increase in real per capita GDP in Canada, which, over the 1998-2002 period, ran ahead of the United States' performance.

Most important of all, as Cohen (2003) has noted, in recent debates Canadian advocates of North American monetary union paid inadequate attention to the economic, historical and political context in which US monetary decisions are made. They therefore failed to realise that it would not be feasible to eliminate the many economic drawbacks inherent in the unilateral adoption of the US dollar by Canada by negotiating a co-operative arrangement with the US. As Robson and Laidler (2002) showed, the concessions that would have had to be sought in any such negotiations, in order to make dollarization an economically practical and politically acceptable proposition for Canada, coincided almost exactly with those that Assistant Secretary Summers had already explicitly ruled out in 1999.

It is hardly surprising, then, that serious discussions of North American monetary integration had already begun to wind down in Canada, even before the recent dramatic rise in the Canadian exchange rate against the US dollar removed a major factor that was, rightly or wrongly, underpinning popular interest in such schemes. Even so, the facts of North American economic integration referred to in the introduction to this paper remain facts, and, in Canada,

⁴Some of these data, appertaining to the use of the Canadian and US dollars as a unit of account by Canadian firms, were the product of a special survey conducted by the Bank of Canada. Other series, on, for example holdings of US dollar denominated bank deposits by Canadians were already available in regularly published sources. The definitive study of the degree of voluntary dollarization within Canada is Murray and Powell (2002)

complaints about the effects of a declining exchange rate among consumers and importers have recently been replaced by complaints about a rising rate among exporters. If North American monetary union is not an option, it does not follow that the monetary status quo in North America is beyond reproach. There are still issues to be addressed here.

III Co-operation under Current Monetary Arrangements

At present, the three countries which make up the NAFTA area maintain separate currencies and distinct monetary and financial systems, while each of them deploys monetary policy in pursuit of domestic goals. In the United States, the Federal Reserve system is bound by act of Congress to pursue the twin goals of price level stability and high employment, while in 1991 Canada became the second country in the world to adopt formal targets for the inflation rate as the sole goal of monetary policy. Mexico too is nowadays an inflation targeter. Against this background, it is left to markets to determine exchange rates among the three currencies.

These arrangements do not, of course, imply that monetary policies in the other two countries are of no concern to the authorities in any one of them. What happens in the United States is obviously of critical importance to the Bank of Canada. The performance of the economy there affects the demand for Canadian exports, the level of interest rates in international capital markets, not to mention the behaviour of the Canadian/US dollar exchange rate. All of these impinge upon the level of aggregate demand within Canada, which in turn is the proximate determinant of variations in the inflation rate relative to expectations. Thus, what is an appropriate setting for the Bank of Canada's crucial policy instrument, its target range for the overnight interest rate, depends among other things on what is happening in the United States. To a lesser extent, events in Canada form part of the background against which the Fed makes policy, and similar interdependencies exist as far as Mexico is concerned as well.

Nevertheless, so long as the authorities in each country are pursuing purely domestic goals, their prime interest in the overall economic performance of the others, and in their monetary policy in particular, is that these be stable and predictable, and hence not be sources of unexpected shocks that resonate across borders and create problems for domestic policy. A well designed monetary order in any one country contributes to the stability of the others, even if that stability is nowhere among the policy goals that it is pursuing. Canada's success in targeting

inflation contributes not just to a satisfactory economic performance in Canada but in North America more generally. Stability in the US is nevertheless much more important to Canada than stability in Canada is to the US. That is both because trade between the two countries is a much more significant for Canada than it is for the US, but also because the place of the US dollar in the international financial system gives monetary instability in the US a potential for disturbing the world economy, and hence by that route the Canadian economy, that has no parallel in the Canadian case.

Even so, current monetary arrangements within North America make an important and positive contribution to the performance of an already significantly integrated regional economy, despite the fact that they are based on national institutions that are firmly tied into domestic political processes. Because it is in their mutual interest to be well informed about the current and likely future performance of each other's economies, moreover, and the domestic policy responses that this might provoke, the three central banks of the region have every incentive to co-operate actively with one another in the creation, transmission and discussion of relevant information.

This is true not just of North America, of course, but of the international community as a whole. The need for such arrangements was made crystal clear by the monetary chaos that marked the inter-war years, and the lessons learned then have had a lasting influence. Because of the status of the US in the international economy as a whole, moreover, some of the most important institutions that in fact support discussion of North American issues do so as a by-product of their role on this broader stage, though others are specific to the region, and even to bilateral interests within it. Simply to list the formal arrangements that are currently in place (without even referring to the existence of the telephone) is enough to establish that discussions among monetary policy makers are pursued on what is effectively a continuous basis.⁵

Thus: the Bank for International Settlements in Basel provides a venue for the Governors of the central banks of G-10 countries to discuss matters of mutual interest six times a year. Some of these meetings are restricted to G-10 central bank governors, but others meetings have a

⁵I am particularly grateful to John Murray for help in compiling a brief catalogue of these arrangements. He is explicitly absolved of blame for any errors and omissions that might be found in the next few paragraphs.

wider and varying invitation list; Finance Ministers and Central Bank Governors of the G-7 countries meet three times a year, two of these meetings occurring on the margins of the semi-annual meetings of the International Monetary Fund and World Bank; their Deputy Ministers and Deputy Governors accompany them to these meetings and have three other meetings of their own during the year; the G-10 Ministers and Governors also meet on the margins of the IMF-World Bank meetings, and again, their deputies meet separately on three other occasions; there is one meeting per year of G-20 Governors and Ministers, and at least two others of their deputies; central banks of the G-10 countries are also represented at the deputy governor level at 3 meetings a year sponsored by the OECD in Paris, as are those of the G-7 countries at two meetings a year sponsored by the Financial Stability forum. Within North America, senior representatives of the Bank of Canada participate in an annual meeting with their counter-parts at the Federal Reserve Bank of New York, and in another with officials of the Bank of Mexico.

There is also an annual round of conferences attended by central bank representatives of various ranks, one organised by the Bellagio Group, and others by individual central banks or district banks of the Federal Reserve system. Not all of these are regularly attended by senior policy makers: the annual conferences sponsored by the Bank of Canada and the Federal Reserve Bank of St. Louis, for example, are dominated by research staff and academics, but the Federal Reserve Bank of Kansas City's annual Jackson Hole conference always attracts its share of Governors and/or their Deputies from around the world. And this is to say nothing of the regular regional academic conferences which central bank and government economists routinely attend, or of the frequent one-off events, organised to discuss particular topics, in which they also participate.

If not all of the above-mentioned conferences involve central bank officials who are directly involved in taking policy decisions, and if not all of them are private, it is still the case that those who make policy receive essentially continuous briefings from the members of their staff who do attend them. More important however, some meetings do routinely involve Governors and/or Ministers and their Deputies, and they do permit frequent, direct and frank exchanges of information and ideas among their participants under conditions of the strictest confidence.⁶

⁶One may get some indication of just how frank these discussions can be, and how important therefore it is that their content remains confidential, from the alacrity with which the

What all this means in practice for monetary policy making in North America (and in the rest of the world for that matter) is that those responsible for it in any one country have access to essentially as many analytic ideas, data sets, forecasts and opinions about the economic outlook for economies that are of particular importance to their own decisions, as do those making policy for the economies in question. And they also have regular opportunities to seek and offer confidential advice to one another about the measures they ought to take, and to argue out the pros and cons of such advice, whenever they think that desirable. Short of senior central bankers having seats and votes on one another's decision making committees, there are no arrangements for facilitating co-operation among monetary policy makers that are not already in place. Nor is it clear that, given current regimes, there would be anything to gain from this last step. Once taken, monetary policy decisions are public information, and the fact that they take effect with long and variable lags is a universally accepted truth. The advance knowledge of any decision that would come with a seat on the relevant committee would only be a matter of a few hours, and would be of little value in helping to make any required response to it (if indeed a response were needed) either more prompt or better calibrated.

To return once more to the basic theme of the foregoing discussion: what any central bank intent on pursuing domestic goals requires above all else of its counterparts in other economies is that their decisions be both predictable and conducive to domestic stability; and this requirement is already largely met in North America. There is, nevertheless, a little room for further improvement. For example, there is a case to be made, and indeed it is currently being made within the Federal Reserve system itself, that the replacement the qualitative goals currently in place with quantitative inflation targets would create a more transparent and predictable monetary environment in the United States.⁷ Such a step would have helpful consequences for monetary policy making in other countries, not least those of North America, and if and when the US authorities become convinced that such a change is in the interests of the

Bank of Canada (2003a) issued a formal correction when Governor Dodge inadvertently attributed the Bank of Canada's own reading of prospects for the US economy to Chairman Greenspan.

⁷Governor Ben Bernanke at the Federal Reserve Board in Washington, and President William Poole of the 8th District Bank in St. Louis are both supporters of such a move. Chairman Greenspan seems content with his current mandate, and there can be no doubt that, given the unpredictability of Congress in monetary affairs, there must be some risk in opening up current arrangements to debate that might lead to new legislation.

population they serve, it will be brought about.

IV Canadian Monetary Policy and the Exchange Rate since 1991

Though not without its problems, the last dozen years has been a period of considerable success for Canadian macroeconomic policy in general, and monetary policy in particular, as Laidler and Robson (2004) have recently documented in some detail. The economy has not been in recession since inflation targets were introduced in 1991, and this resilience was maintained against a background of considerable turmoil on the international scene.

Crucial to the topic of this paper, from 1991 onwards, and particularly after the structural turnaround in the country's fiscal situation that began with the 1995 federal budget, the Bank of Canada found it less and less difficult to ride out pressures on the exchange rate emanating from abroad without countering them with sustained contractionary measures. Though the Asian and Russian crises of 1997-98 were at least as serious as the EMS crisis of 1992, or the Latin American Tequila crisis of 1994, their consequences for the performance of the Canadian economy were more muted. In the late summer of 1998, the Bank of Canada responded to these events, as it had to their predecessors, by raising interest rates, but the response in question was quickly unwound and its domestic consequences were both mild and temporary.⁸ When, shortly afterwards, the collapse of the high-tech bubble in the US ushered in a mild recession there, the Bank of Canada was able to keep its eye firmly on the domestic situation and avoid recession.

In short, markets' confidence in the durability of low domestic inflation in Canada has steadily grown since 1991. Before the mid-1990s, financial market participants tended to read a decline in the exchange rate as indicating a weakening of the Bank's anti-inflation stance, and

⁸The interest rate increase in question came only after large scale intervention in the foreign exchange market, aimed at supporting the Canadian dollar, failed. It is worth noting that in 1998, the policy responses of the world's three major developed economies that are heavily dependent on commodity exports, Australia, Canada and New Zealand, lay along a spectrum, and so did their subsequent performance. Australia allowed its exchange rate to decline without a monetary policy response, and its domestic economy continued to expand, Canada briefly raised interest rates, and the economy subsequently slowed down for a few months, while New Zealand raised rates and held them at a higher level, with a full-blown recession soon following. For a perceptive account of this episode, see Kevin Clinton (2001).

hence as heralding further problems in the foreign exchange market, and there was always a threat that, to use a phrase much favoured by the Bank of Canada in earlier times, expectations of a declining exchange rate might become extrapolative. This risk now seems to have diminished close to a vanishing point. The slow but steady decoupling of domestic inflation expectations from the exchange rate as the 1990s progressed, was thus both encouraged and matched by the Bank's paying less and less attention to that variable's behaviour in the conduct of policy.

Early in the decade it was still sometimes remarked that the exchange rate was the single most important price in the Canadian economy, but a decade or so of successful inflation targeting has ensured that it has now ceded this place to the price of a representative bundle of goods in terms of money, better known as the domestic price level. Even so, the exchange rate is still a very important price for anyone engaged in international trade, or involved in international capital markets, either directly or indirectly, and that means essentially the whole Canadian population. Because it is also a price susceptible to influence by monetary policy, moreover, it is not unreasonable to ask whether some modification to the current monetary order that has room for exchange rate behaviour among its policy goals might be preferable to current arrangements.

It was this basic question that gave intellectual legitimacy to the proposals for the dollarization of the Canadian economy and/or the monetary unification of North America discussed above, because such arrangements, after all, are in some respects analytically equivalent to a limiting alternative to the present monetary order under which an inflation target is replaced by an irrevocably fixed value for the exchange rate as the sole end of monetary policy. And the question remains legitimate even after such proposals have been rejected. If a common currency is not desirable for North America, what about a system of fixed exchange rates? And if a system of fixed exchange rates is not desirable, what about national monetary orders that seek some trade-off between exchange rate and inflation stability? What answers can be reasonably given here hinge upon a logically prior set of issues about what causes the exchange rate to shift under present arrangements, and therefore, what if any would be the consequences of policy intervention to influence its movement.

V Exchange Rate Volatility, Purchasing Power Parity, and Fundamentals

The Canadian-US dollar exchange rate is simply the price that a Canadian dollar can command in US dollars. It is the price of one financial asset in terms of another, and to understand its determination it is useful to bear in mind two important features of all asset markets: first, they are characterised by an extremely high degree of price flexibility, and second, the current valuations that their participants place upon the items traded in them are dominated by expectations about their future valuations. Significant differences between current prices and expected future prices cannot persist in such markets because the former are free to move, and because if they do not, this would imply the existence of unexploited profit opportunities. Twenty dollar bills, as the saying goes, do not get left lying on the sidewalk for very long.

These features of asset markets in turn yield two implications for asset price behaviour: first this is likely to display considerable volatility, since all pieces of information that arrive *now* about *any time in the future* affect prices *now*; and second, *after the event*, some price fluctuations will appear to have been unjustified. Information about the future is, after all, likely to be of variable quality and open to misinterpretation; and not everything that looks like a twenty dollar bill turns out to be one upon closer inspection.

We are used to the idea that equity prices, and house prices too, are sometimes subject to *bubbles*, price fluctuations supported not so much by variations in longer term expectations about the evolution of basic economic factors, as by simple extrapolation from the recent behaviour of those prices themselves. We should not rule out *a priori* the possibility that foreign exchange markets display similar characteristics, and yet there are differences here. The occurrence of what turn out after the event to have been bubbles in stock markets is usually associated with the entry into them of significant numbers of not very well informed non-specialist traders, and it is also of the very nature of housing markets that they mainly cater to just such agents. To a much greater extent, foreign exchange markets are dominated by specialists who are well informed and less error prone than other agents in the economy, and indeed earn their returns precisely from these advantages.

This argument, if accepted, might establish a presumption that variations in foreign exchange rates are less likely to be gratuitous than those in certain other asset prices, but it

cannot eliminate the possibility altogether.⁹ That is why words and phrases such as “misalignment” and “excess volatility” which figure so prominently in the academic literature dealing with their behaviour need to be taken seriously. In order to draw lessons from that literature, however, it is important to grasp that to characterise an exchange rate as misaligned implies the existence of some base-line, or *fundamental*, value relative to which misalignment can be judged, and that volatility can only be termed “excessive” relative to the volatility of that same fundamental value. It is just as important, moreover, to bear in mind that it is possible for different commentators to base their conclusions on different views about what determines the fundamental value in question.

In recent Canadian debates, criticism of the Bank of Canada’s single minded pursuit of stable domestic inflation, and its growing willingness to leave the exchange rate to be determined by markets, has been intimately associated with a particular hypothesis about what determines the long-run equilibrium value of the exchange rate, usually known as *purchasing power parity theory*. Courchene and Harris (1999), for example, systematically used the word “misaligned” to describe any value for the exchange rate that deviated from the value predicted by that theory, and the phrase “excess volatility” to characterise any swings in it that could not be explained by movements in the determinants of its purchasing power parity value.

Given the price levels in two countries, the purchasing power parity *value* of the exchange rate between their currencies is simply the one at which a given sum of money can buy the same amount of goods and services on either side of the border.¹⁰ As such the phrase refers to an economic concept rather than a theory, but purchasing power parity *theory* deploys this purchasing power parity *concept* in a model that predicts: first that, between any two countries,

⁹The idea that markets become more prone to instability unrelated to fundamentals when they attract ill-informed participants is an old one. It was a close to commonplace in the Cambridge tradition of monetary economics that formed the background to the Keynesian Revolution. These issues are discussed in Laidler (1999). Plausible though this idea is, however, I am not aware of any systematic empirical investigations of it in the modern literature.

¹⁰The concept is invaluable for such exercises as making international comparisons of living standards. If one wishes to know, for example, whether the median Canadian household enjoys a lower or higher living standard in Canada than its US counterpart does in the US, it is obviously appropriate to convert its Canadian dollar income to US dollars at the purchasing power parity exchange rate in order to make the comparison, rather than at the market rate.

the value of the exchange rate will converge in the long run on its purchasing power parity value; and second that, this long-run equilibrium value of the exchange rate will therefore move in direct inverse proportion to the ratio of the two countries' price levels, so that, for example, a 10 per cent relative increase in the Canadian price level will be associated with a 10 per cent fall in the equilibrium exchange rate. This particular theory of the equilibrium exchange rate is also frequently linked to an explanation of price level behaviour cast in terms of the interaction of the supply and demand for money, and leads naturally to the characterisation of exchange rate movements that cannot be explained by this interaction as "excessive".¹¹

Superficial plausibility is lent to this purchasing power parity theory by two circumstances. First, the well known *law of one price* - the proposition that the same good cannot trade for a different price in different parts of the same market - suggests to its advocates that (with due allowance for transport costs and taxation) there are mechanisms that would tend to bring a country's exchange rate back to purchasing power parity after a monetary disturbance that shifts the price level in one country. Thus, they would argue that a higher (lower) price level discourages imports (exports) and encourages exports (imports), and puts downward (upward) pressure on the exchange rate until purchasing power parity is restored. And second, twentieth century economic history has provided two major episodes, in the 1920s, and again from the late 1960s until the early 1980s, in which monetary disturbances of very different orders of magnitude in different countries were prominent features of the international economic landscape, and in which high inflation countries did indeed see their exchange rates fall against those of low inflation countries.

More seriously, formal econometric studies often enough reveal tendencies for exchange rates to move slowly backwards towards purchasing power parity after disturbances to make it unwise totally to dismiss the theory. However, persistent deviations from purchasing power parity frequently occur, and exchange rate volatility that is excessive relative to the theory's predictions is sufficiently ubiquitous, that it has nowadays become common to follow Kenneth Rogoff (1996) in referring to a "purchasing power parity puzzle": namely, why doesn't the theory work better in explaining the behaviour of exchange rates?

¹¹This, for example, is how Robert Flood and Andrew Rose (1998), cited by Courchene and Harris (1999) used the term. In this context, it is interesting that the Canadian-US dollar exchange rate displayed the smallest degree of "excess volatility" of all those that Flood and Rose examined.

Various solutions to this puzzle are on offer, and are conveniently thought of as lying along a spectrum. At one of its extremes lies the possibility that purchasing power parity does indeed characterise exchange rate equilibrium, and that all deviations from it, whether persistent or temporary, reflect a failure on the part of the foreign exchange market to work efficiently. At the other, lies the possibility that the theory is far too simple as an explanation of even long-run equilibrium exchange rate behaviour, that deviations from purchasing power parity reflect the influence of other non-monetary fundamental factors that it neglects, and that exchange rate volatility is simply the result of movements in them. It is extremely doubtful if one could nowadays find any responsible commentator at either of these extremes, but some take up positions much nearer to one of them than do others, and the chosen location bears heavily on how much confidence they then place in the capacity of any monetary order in which the exchange rate figures among the targets of monetary policy to serve the Canadian economy better than current arrangements.

It is obvious that, *other things equal*, exchange rate movements within an already highly integrated North American economy are a considerable and costly nuisance to those routinely involved in cross-border transactions. It is also obvious that, if the central banks of the area are all successfully pursuing similar inflation targets, whether formally or informally, there will be little movement in the values of the purchasing power parity exchange rates among their currencies. If systematic deviations of actual exchange rates from these values, and volatility in them over and above that which can be put down to deviations among the time paths of their price levels, are attributable to chronic inefficiencies in foreign exchange markets, it is also possible for central banks to eliminate these without compromising their inflation goals, and for monetary policy to bring to agents involved in trans-border transactions the same degree of stability that they currently enjoy when they transact domestically. On the other hand, if fluctuations in exchange rates away from purchasing power parity have their roots in shifting fundamentals to which the foreign exchange market is reacting efficiently, then monetary measures taken to smooth them out, though they might be effective in doing so, are going to have consequences elsewhere in the system, which *may* though not *must*, be an even more considerable and costly nuisance than the exchange rate movements in question

VI Explaining Variations in the Real Exchange Rate

There are many good reasons to believe that there is more to the determination of the equilibrium exchange rate than the purchasing power parity theory would lead one to expect, several of which have to do with the facts that countries do not trade everything that they produce, nor are the bundles of goods that they do trade identical. Both of these facts blunt the capacity of the law of one price - on the assumption that it does indeed hold for individual goods - to pin down and hold the exchange rate at its purchasing power parity level, and open up room for relative price variations among goods, stemming from variations across countries and over time in endowments, tastes and technology to affect exchange rates. To put it more precisely, variations in the *nominal* exchange rate, the price of one country's currency in terms of that of another, might sometimes reflect variations in the underlying *real* exchange rate: the relative price of that country's output bundle in terms of that of the other.

For example, differentials in productivity levels and growth rates between countries can affect the real exchange rate, and its rate of change too. The so-called Balassa (1964)-Samuelson (1964) effect provides one well-known example of how this can come about. It argues that, in the case of two countries, if there is a larger productivity differential between their tradeables than their non-tradeable sectors, then the currency of the more productive economy will take a value above purchasing-power parity. The law of one price, so it is argued, will tend to keep the prices of tradeables in line, but non-tradeables producers in the higher productivity country will have to pay more for their labour and hence charge a relatively higher price for their output. If productivity growth rates also differ systematically between the two countries, then the exchange rate premium in question will also vary over time to reflect this. Should productivity level and growth differentials be greater in the non-tradeables sectors, on the other hand, then the signs of these effects will be reversed, with the high productivity country having an exchange rate below purchasing power-parity that also declines over time as the productivity differential opens up.

If the make up of the bundles of goods traded differs between countries - and if it did not it would be hard to explain why trade would occur in the first place - it is also possible that the price of a representative bundle of one country's imports in terms of a representative bundle of its exports - its *terms of trade* - can vary over time. This effect too can impinge upon both the real and the nominal the exchange rate, with the country whose exports are declining in relative price experiencing a definite depreciation of the real rate, and a depreciation of the nominal rate

at least relative to whatever time path it was initially following.

Then there is the fact that not all cross-border transactions are in currently produced goods and services, so that capital flows can also affect the exchange rate. A borrowing country must generate an import surplus if the real resource flows that lie behind its financial transactions are to be realised, and this is so whether these originate in the private sector or with the government.¹² Thus, the higher is the rate of capital inflow, (and always assuming that there is some difference between the composition of imports and exports) the higher must the country's real exchange rate be to create the matching trade deficit. And stocks of indebtedness can play a role here too: investors hold the liabilities of agents located in any particular country on the basis of expectations about the return to be realised from doing so. The larger is the stock of liabilities to be held, the greater is the risk of their returns being impaired in future, and hence the lower their value in the present. These stock effects work in the opposite direction to flow effects: borrowing abroad tends to drive a currency up so long as confidence is not impaired, but as debt is thus accumulated confidence effects can come into play to push the currency down. These considerations open up the possibility that capital account activities can be a source of real exchange rate volatility, as the relative significance of opposing forces changes over time.

To say that all of the above factors may compete with purely monetary influences on the nominal exchange rate is not to say that they always will do so, nor is it to say that market adjustments in the nominal exchange rate are the only possible, or always even the best, response to them. But it is to say that it is important to test for their presence before attributing deviations from purchasing power parity, and exchange rate volatility over and above what can be explained by monetary factors, to a failure of markets to function efficiently, and to conclude that they can be eliminated by policy without further consequences. The latter phenomena might well be responses to fundamental factors impinging on the real exchange rate, and if the nominal

¹²Note, however that this conclusion does not necessarily imply that an increase in government borrowing will always tend to appreciate the real exchange rate. That is because so-called "Ricardian equivalence" effects, whereby private agents increase their saving in anticipation of future tax burdens, may come into play, ensuring that extra government borrowing can be financed out of increased domestic saving. Absent Ricardian equivalence effects, however, increased government borrowing in a fully employed economy does affect capital flows, as either the government itself, or private sector agents who have been "crowded out" of domestic markets, borrow abroad, and, other things equal, it also leads to an appreciation of the real exchange rate.

rate is prevented by policy from adjusting to them, then other variables will have to.

These considerations are of potentially great importance in the case of Canada within North America, and particularly vis-a-vis the US. Consider: productivity is lower in Canada than in the US, and productivity levels and growth rates continue to differ between the two economies on a sector by sector basis too; Canada is a significant net exporter of primary commodities, and the US is a net importer, their prices are notoriously volatile, and variations in them necessarily affect the Canada-US terms of trade; and the two countries' rates of international borrowing and levels of international indebtedness have been on very different, not to mention changing, trajectories for many years. If one is looking for fundamentals whose behaviour might explain why the Canada-US exchange rate has usually differed from purchasing power parity, and has displayed volatility well in excess of what would be predicted by the monetary factors on which that theory of the exchange rate focusses, then there is no shortage of candidates.

Empirical evidence, much, but not all of which, is built around what is commonly called the *Bank of Canada Equation*, (See Amano and van Norden, 1993, 1995) at the very least puts the burden of proof on those who would deny that fundamentals in addition to those encompassed by purchasing power parity theory have had a systematic influence on the US Canada exchange rate over the years.¹³ This equation's dependent variable is the *real* exchange rate, the market or *nominal* rate adjusted for variations in the price levels of the two countries, so one of its basic building blocks is the idea, fundamental to purchasing power parity theory, that the nominal exchange rate does indeed move to offset inflation differentials. However, where purchasing power parity theory has it that the real exchange rate is a constant, the Bank of Canada equation tests the hypothesis that it shifts in response to fundamentals. It postulates, and seems to show, that, in the Canadian-US case, the real exchange rate's time path is dominated by two sets of variables - in the long run, by movements in world commodity prices, and in the short run by variations in the stance of monetary policy in Canada relative to that of the US, as measured by the short interest rate differential between the two countries.

¹³Neither the studies of Carr and Floyd (2002) of Canada alone, nor Chen and Rogoff (2002) of Australia, New Zealand and Canada take the Bank of Canada equation as their immediate starting point, though both investigate the role of variables closely related to those that appear in it. Both find that real factors seem to have systematic effects on Canada's real exchange rate, and hence confirm Amano and van Norden's basic results.

The latter effect is uncontroversial in the context of this paper, because advocates of purchasing power parity theory do not expect the exchange rate to be at its long run equilibrium value at every moment, and would regard monetary policy shocks as prime sources of short-term disturbances under a system of flexible exchange rates. They would also argue, correctly, that, had Canada's monetary order made exchange rate behaviour one of the goals of policy over the period to which the Bank of Canada equation has been fitted, the behaviour of this interest differential, which reflects the monetary policy decisions that were actually taken, would probably not have been a source of disturbance. Indeed, they would claim, again correctly, that the fact that monetary policy seems to have a systematic effect on the exchange rate is a point in favour of such a regime, at least to the extent that it suggests that it would be technically feasible.

The long run significance of commodity prices in the equation is problematic for this point of view, however, because it suggests that terms of trade effects are a source of real exchange rate variation whose effects would have to be absorbed elsewhere in the economic system if the nominal exchange rate were less free to adjust to them. This result has, furthermore, stood up to a decade of new Canadian data generated since the equation was first proposed, and also to data generated by those other commodity producing countries Australia and New Zealand (See Ramdane Djoudade et al. 2001).

Even so, the last decade has also seen apparent changes in the factors determining Canada's real exchange rate and in their relative importance too. In the original Bank of Canada equation, the commodity prices that were important were those in the non-energy sector. The price index of energy commodities entered either with the "wrong" (negative) sign, or insignificantly, depending upon the particular formulation of the equation and the time period over which it was fitted. More recent work however - for example that reported by Guillemette, Laidler and Robson (2004)- seems to show that energy prices began to enter the equation with a significantly positive sign in the 1990s, while the quantitative importance of non-energy commodity prices declined. These results are consistent with the growing significance of Canada's net exports of energy resources in the 1990s, and with the slow decline in the importance of other commodity exports that has been in train since the 1970s.

Commodity prices are the only non-monetary variables that have systematically found a place in the Bank of Canada equation from the outset. We have seen, however, that fiscal policy ought to affect the exchange rate, and the relevant variables - government borrowing rates and

levels of debt accumulation - have displayed considerable variation over the years in Canada and the US.¹⁴ Some recent work, for example Murray, Zelmer and Antia (2000) has found a place for them in a version of the Bank of Canada equation, but this result does not seem to be robust against variations in the precise formulation of the effects in question, and in period to which the equation is fitted. Carr and Floyd (2002) also report problems with fiscal policy variables in their exchange rate equation. Productivity level and growth rate effects were also initially hard to pin down, though Lafrance, Helliwell, Issa and Zhang (2004) have lately found a place for them, albeit not along the lines suggested by the simple Balassa-Samuelson effect discussed earlier.

It is also the case that an exchange rate involves the currencies of two countries, but that the Bank of Canada equation relies heavily on commodity prices, variables which are far more important in Canada than the US. If real fundamentals are important for the Canada-US exchange rate, one might have expected some specifically US variables to play a systematic role in explaining its behaviour. Furthermore, the appreciation of the Canadian dollar that began in 2003 was somewhat embarrassing for earlier forms of the equation. Commodity prices did begin to rise at that time, to be sure, and a significant short-term interest differential was also in place for a while, so that qualitatively speaking, the equation gave the right prediction; but in quantitative terms it failed quite badly: it could explain the direction of the exchange rate's upward movement, but not its magnitude.

It has, of course, been widely and correctly remarked that the behaviour of exchange rates since 2003 has been overwhelmingly a matter of a world-wide depreciation of the US dollar, and that the time path taken by the bilateral Canada-US rate has been mainly a side effect of this broader phenomenon. But this observation simply re-enforces doubts about the Bank of Canada equation's long-standing failure to encompass any important US fundamentals. It does little to excuse its poor performance. Lafrance, Helliwell, Issa and Zhang (2004) as well as Bailliu, Dib and Schembri (2005) have recently confronted this issue, the former by taking account of movements of the US dollar against other currencies, and the latter by looking for potential effects stemming from US fiscal and current account imbalances, and both studies have obtained promising results with these variables. In particular they seem to go a long way towards correcting the problems created for earlier formulations of the Bank of Canada by exchange rate

¹⁴Once again the reader is warned that this conclusion would not hold if the Canadian economy were to be characterised by "Ricardian equivalence", which it does not seem to be.

behaviour since 2003.

Even so, in all their variations, Bank of Canada style equations are better at explaining long-run trends and broad swings in the exchange rate than shorter term movements, and there is a growing body of evidence that when it comes to shorter run but still sometimes significant variations, causation can run from the nominal to the real exchange rate, rather than *vice versa*, and that these effects can perhaps be explained by the presence of price stickiness, particularly in retail markets, that causes the law of one price to fail at this level.¹⁵ Such considerations open up the possibility that a completely clean float for an exchange rate is a second best regime, and that, as for example for example Devereux and Engel (2004) have argued, there is room in principle for policies designed to eliminate at least some of those variations in it that cannot be attributed to variations in real fundamentals.

The empirical study of Canada's exchange rate is, in short, a work in progress, but economic theory creates a strong presumption that purchasing power parity theory is much too simple; and over a decade of empirical work with the many variants of the Bank of Canada equation has done much to support this view. Even should it turn out that future studies of the type represented by Devereux and Engel (2004) reveal that this work has attributed too much of the exchange rate's variability to movements in real fundamentals (and this is by no means certain) it seems highly unlikely that its basic message about their importance will be undermined. If our knowledge of these matters is still far from complete, then, this conclusion has implications for the design of the monetary order in North America in general and Canada in particular, to which we now turn.

VII Alternative Monetary Orders

During the recent debate about North American monetary integration, it was sometimes unclear just what form its proponents expected such an arrangement to take, and this occasionally led to a confused discussion. Similar problems can arise in the context of less radical proposals to make

¹⁵I conjecture that in the longer run, this result will come to appear unsurprising, once account is taken of the large component of non-tradeable services that are built in to retail prices. This is not to discount the potential significance of "pricing to market" effects that can occur in circumstances where producers are able to price discriminate among national economies.

the exchange rate an object of policy. A regime under which the behaviour of the exchange rate was added to that of the inflation rate as a policy goal would, for example, have different characteristics to one under which the exchange rate was rigidly fixed, and in either case, its performance would be affected by the extent of US co-operation in the system.

It is helpful to begin our discussion of these matters with an arrangement that would involve the smallest movement away from the status quo, namely one under which Canada unilaterally complicates its current regime by making exchange rate behaviour an extra policy goal. Such an approach to policy would be both feasible and preferable to current arrangements if purchasing power parity theory was an adequate explanation of the long run equilibrium exchange rate's behaviour, and if deviations from this benchmark could confidently be put down to inefficiencies in the working of the foreign exchange market. Calls that are currently being heard for the Bank of Canada to "do something" about interest rates and the exchange rate to help exporters, now that inflation is clearly under control, amount to proposals that such a scheme be implemented, at least informally.

The first problem with such proposals is that we can be reasonably confident that purchasing power parity is *not* an adequate theory of Canada's long run equilibrium exchange rate, and the second is that we nevertheless do not know enough to be able to offer advice about how to modify such a scheme in the light of this considerable complication. In principle, to be sure, the solution is straightforward. Instead of a regime under which the Bank of Canada aims at a central inflation target, but also stands ready to iron out "excessive" volatility in the exchange rate around its purchasing power parity level, a scheme could be adopted under which the Bank seeks to eliminate only those fluctuations that can not be attributed to movements in fundamentals, while permitting variation in the inflation rate within a target range to make room for such initiatives. But there is a crucial practical problem here: namely, that, though it would be wrong to argue that such "excessive" fluctuations never occur, it is nevertheless hard to argue that they can be recognised as such, and their order of magnitude determined, with any degree of confidence while they are occurring, let alone that the Bank of Canada has some special knowledge that would enable it to do so with systematically more speed and accuracy than the private sector.

In principle, there may be room for improvement in the conduct of monetary policy along the above lines, then, but in practice any attempt to realise it is likely to be not just ineffective

but positively damaging. At present, agents in the private sector know that the Bank of Canada will always take measures to bring inflation back to a target value of 2 per cent over an eighteen month time horizon, they combine this information with their own reading of the economy to assess the prospects in their particular line of business, and they then act in accordance with this information. All this is difficult enough, but under the more complicated alternative, they would also have to assess how the Bank was likely to divide up the blame for any current movements in the exchange rate between fundamentals which monetary policy ought to ignore and gratuitous market shocks to which it should respond, decide what its likely actions would imply for inflation, and then factor this information into their decision making. It is difficult to see how all this would make life easier for anyone than it is at present.

The Bank of Canada has worked hard over the last decade to improve the transparency of its policy making. An important step forward here occurred when, in about 1998, it began to de-emphasise the role of the *Monetary Conditions Index* both in its own policy decisions but also, and more importantly, in its attempts to communicate with the public.¹⁶ That index is a weighted average of a representative short-term interest rate and the exchange rate, and underlying its deployment was the perfectly correct insight, that, in an open economy, both of these variables impinge upon aggregate demand and hence on the future time path of inflation. The Bank framed its discussions of policy in terms of the interaction between the actual and desired values of this index, the latter depending on, among other things, its assessment of the extent to which fundamentals, as opposed to what it called “portfolio shifts” were moving the exchange rate. It was, however, never able to convince the public to take enough notice of its belief that this desired value would indeed vary over time for these communications to be helpful.¹⁷

¹⁶Indeed, alongside the reduction in degree of political controversy surrounding monetary policy that took place in the 1990s, for which it was partly responsible, this improvement in the transparency of policy was perhaps the central achievement of Gordon Thiessen’s governorship. That this was the result of a deliberate policies is evident from Thiessen (1999). Even so, progress here was not always in a straight line. As an anonymous referee points out, the rise as well as the subsequent fall of the Monetary Conditions Index as a guide to monetary policy took place during Thiessen’s governorship.

¹⁷Charles Freedman (1994) provides a clear and thorough description of the role that the Monetary Conditions Index was intended to play in Bank of Canada policy making. The problem with that role was not any logical flaw in its configuration, but that this proved to be so complicated that it hindered Bank in its efforts to communicate accurately with markets.

Nor were matters made easier by the fact that, until late 1998, the Bank of Canada routinely intervened in the foreign exchange market, not in order to control the exchange rate's longer run time path, but rather to smooth out its day by day fluctuations and to resist sudden movements in the variable. The Bank automatically bought the currency when it was falling, and sold it when it was rising. Difficulties with this procedure came to a head in the summer of 1998. At that time, the Bank's regular interventions failed to prevent the currency's rapid fall, but on the occasional days when this trend was temporarily interrupted, its procedures nevertheless required it to sell the currency at a value at which, only a few days earlier, it had been a buyer. This was bound to confuse markets, and, to add to the Bank's difficulties, when in August 1998 it eventually intervened on an unusually large scale in an effort to drive up the Canadian dollar's value, this influenced the exchange rate only for a day or so. With its credibility in the foreign exchange market on the line, the Bank then had to institute an interest rate rise of 1 percentage point that was quite unjustified by circumstances in the domestic economy.

The upshot of all this was the Bank's announcement in September 1998 that it would no longer engage in systematic intervention in the foreign exchange market, though it reserved the right to do so in extraordinary circumstances.¹⁸ This announcement, and the Bank's more or less simultaneous de-emphasising of the Monetary Conditions Index in its policy communications, not to mention its rapid unwinding of its August interest rate increase (under the cover of interest rate cuts in the US provoked by the Long Term Capital Management crisis), should be seen as the culmination of a trend away from gearing policy towards the exchange rate that began with the institution of inflation targets in 1991. To modify the current regime to make the elimination of fluctuations in the exchange rate relative to the Bank's assessment of its fundamental value a goal of policy, would be to reverse this development to the point of giving that variable even more prominence in the policy framework than it enjoyed in the mid-1990s. Bearing in mind the problems that were encountered at that time, it is hard to avoid the conclusion that such a step would be destructively retrogressive.

To work well, monetary policy needs to be transparent, and, among other things, the goal of eliminating exchange rate fluctuations relative to a moving time path driven by fundamentals

¹⁸In fact August 1998 remains the last time the Bank has engaged in such activities. A recent Backgrounder (Bank of Canada 2003b) discusses the Bank's current views on intervention in some detail.

is just too complicated to be easily communicated. One solution here, if the exchange rate is to be re-instated as an object of policy, would be to make the unilaterally chosen target for its behaviour simpler. Perhaps the Bank of Canada should aim to keep the rate in a target zone, or moving along a pre-announced time path, or perhaps the rate should simply be fixed. Though there are many differences among such schemes, they all have one economic characteristic in common, namely that shifts in fundamentals that would take the exchange rate away from its chosen value, or beyond the boundaries of its chosen range, would have to be accommodated by other variables, and it is uncontroversial that among these would be domestic money wages and prices.

Now when real fundamentals change, it is generally the case that domestic wage and price relativities must respond to them regardless of the exchange rate regime. A flexible exchange rate cannot eliminate this necessity. All it can do, at best, is reduce the amount of nominal variation in domestic variables that is required. How important a factor this is obviously depends on how easy or how difficult it is for such variations to be brought about, and on what side effects they may have. It is a platitude that the more (less) flexible are domestic money wages and prices, the less (more) important is the flexibility of the nominal exchange rate to the economy's performance as it adjusts to real exchange rate shocks, but it does not quite say all that needs to be said on this matter. The monetary authorities, even those of an economy characterised by perfect price flexibility but subject to real exchange rate shocks, would face a choice between maintaining exchange rate and domestic price level stability, and the sacrifice of the latter in order to stabilise the exchange rate would not necessarily be without its costs.¹⁹

To give a concrete example of what might be involved here, it is only necessary to note that wages and prices are generally considered to be rather flexible in an upward direction, and that, on the assumption that the recent world-wide depreciation of the US dollar is largely related to real fundamentals rather than to some failure of the functioning of foreign exchange markets, money wages and prices in Canada would have had to rise by about 20 per cent to bring about

¹⁹It is often carelessly asserted that a small open economy which fixes its exchange rate to the currency of a larger trading partner will simply import whatever inflation rate that is ruling there. This conclusion is only true, however, on the assumption that the real exchange rate between the two economies is constant. A more accurate statement would be that the small economy's price level will behave so as to accommodate its time path to that of its partner's price level, given whatever movements might be taking place in the real exchange rate.

the real exchange rate adjustment that has in fact taken place since the beginning of 2003 under a fixed nominal exchange rate. Had this in fact occurred, then exporters who are currently lamenting the effects of the nominal exchange rate's behaviour on their competitiveness would instead be complaining about domestic wage inflation. Furthermore, to the extent that the behaviour of the price level had been unanticipated, there would have been significant redistributions of wealth within the economy.²⁰ It is far from clear that all this would, on balance, have been preferable to what in fact transpired, and it is perhaps worth reflecting on the fact that, in 1950 and again in 1970, the Canadian authorities chose to abandon a fixed exchange rate in the face of strong inflationary pressures emanating from the need for a real exchange rate appreciation.

Even so, wage and price stickiness does add to the problems associated with any exchange rate regime that seeks to prevent the nominal rate fully adjusting to real shocks, and, as is well understood, this matter becomes particularly important when a real exchange rate depreciation is required. Again an illustration from recent Canadian experience is telling: Robson and Laidler (2002) have estimated that, had a fixed exchange rate on the US dollar been in place between early 1998 and 2002, the Canadian price level would have had to fall at a rate of close to 2 per cent per annum in order to bring about the real depreciation that in fact took place. In the best of circumstances, tight monetary policy and a significant temporary contraction of real income and employment would have been required to bring this about, and in the worst, under which markets proved strongly resistant to deflation, temporary real contraction would have been replaced by something closer to stagnation.²¹

²⁰There have, of course, been redistributions of wealth over the past year from the unanticipated appreciation of the currency, involving losses on the part of those who were holding substantial US dollar denominated assets, for example holiday homes in the US, or unhedged investments in US stocks.

²¹For this reason, it is hard to give much credence to claims that Canada's productivity performance would have been better in the late 1990s, had the exchange rate been fixed, or a common North American currency been in place. Indeed, recent work by Edwards and Yeyati (2003) suggest that the shock absorbing properties of flexible exchange rate regimes generally have a systematically beneficial effect on the real performance of the economies that have adopted them.

Phenomena of the type just postulated here are well documented under just about any kind of fixed or managed exchange rate regime, and it is equally well documented that the political pressures they generate make such regimes fragile and prone to destructive speculative attacks.²² That is why protagonists on opposite sides of the recent debate about North American monetary integration, for example, Grubel (1998) and Laidler and Poschmann (2000), have sometimes agreed that the middle ground between a common currency and a market determined exchange rate is distinctly inferior to either extreme, and hence to be shunned. But this view has not been universally shared. Courchene and Harris (1999) and Robert Mundell (see Alan Freeman 1999) have urged that Canada adopt a rigidly fixed exchange rate on the US dollar, the former as a way station on the way to fuller monetary integration (along the lines of the European Monetary system in the 1990s) and the latter as an essentially permanent arrangement.

Not everyone will share these authors' view that a fixed exchange rate regime would be feasible provided only that macroeconomic policy in Canada were to be devoted single-mindedly to its maintenance, because the key question here is not so much technical as political. It is far from clear that so single-minded a policy would be sustainable in a country such as Canada which has conspicuously chosen to withhold goal independence from its central bank, and instead has evolved a set of arrangements in which the ultimate responsibility here resides with elected politicians. Even so, it is possible to envision institutional changes that would improve such a regime's chances of survival, were it to be put in place. Some of these could be brought about unilaterally, but others would require the co-operation of the US, and of Mexico too, if the arrangement was to be extended to the whole of the NAFTA.

It has already been noted that money wage and price stickiness make any kind of nominal exchange rate target painful to sustain in an economy where the real exchange rate needs to move from time to time, so it follows immediately that more flexibility in markets in general, and in the labour market in particular, would make this sort of monetary order more viable. As the European example shows, what would be needed here is not just wages and prices that move

²²Osakwe and Schembri (1998), for example, list no fewer than 38 exchange rate crises that occurred between 1990 and 1997 as a consequence of such forces, each one ending in a devaluation or the outright abandonment of a fixed exchange rate. These problems would be exacerbated in the Canadian case by the fact that the Bank of Canada Act explicitly makes the Bank the agent of the federal government in the foreign exchange market. It would have no legal authority to resist political pressures to abandon any exchange rate target.

more easily, but also a reduction in other rigidities associated with the workings of the welfare state; and this European example also shows that such changes are extremely hard to bring about, even in countries which have already self-consciously and totally given up their capacity to implement domestic monetary policy, and accepted serious limits on their capacity to deploy fiscal tools as well.

The stresses here could, no doubt, be somewhat reduced if the maintenance of a stable or even fixed exchange rate between the Canadian and US dollars (and perhaps between both of these and the Peso) became a joint responsibility of the Federal Reserve system and the Bank of Canada (and, perhaps, of the Bank of Mexico), rather than being the unilateral responsibility of the latter institution(s). If the Fed would support the Canadian dollar and/or the Peso when real shocks were requiring them to depreciate, this would both take some of the pressure of those currencies, and also ensure that some of the required adjustment was brought about by US inflation; and if the Fed. was willing to deflate when their real exchange rates needed to rise, this too would make adjustments easier for Canada and/or Mexico. As we have seen above, much of the machinery needed to enable monetary policy to be formulated on a co-operative basis within North America is already in place, so it would not be technically difficult to bring such a regime into being. As we have also seen above, however, the US has important interests in monetary relations with Europe and Asia, that have no real parallels in the Canadian and Mexican cases, and these might sometimes conflict with an obligation to stabilise exchange rates within North America.²³ .

One other change within North America that would lessen the monetary strains associated with the adoption of exchange rate targets should be mentioned: namely the enhancement of cross border labour mobility, again either between Canada and the US alone, or throughout the NAFTA. One of the more telling points made by advocates of full North American monetary integration in recent debates was that the US monetary system could itself be regarded as a monetary union among disparate regional economies, whose real exchange rates

²³As John Murray has reminded me, the US has recently been party to discussions about possibly co-ordinated action to deal with current account imbalances, including its own, and to alter the configuration of certain exchange rate regimes, particularly that ruling between the Yuan and the US dollar, though so far, the discussions in question have yielded no practical results. From a US standpoint, these issues are far more important than any that are currently on a purely North American agenda,

were prone to vary over time without threatening the stability of the union; but an equally telling response to this was that labour and private capital mobility, not to mention fiscal transfers, among the regions of the United States provided extra cushions against these effects that would not be available to the same extent, if at all, on a continent-wide basis.

Though there is no sign that co-operation in fiscal matters is on the table, there have recently been discussions of the desirability of regulatory harmonisation between Canada and the US that might, as a side effect, enhance the already a high degree of capital mobility that exists between the two economies. Furthermore, in the wake of the events of September 11th 2001, there have already been speculations about the creation of a North American economic perimeter at which common rules for the movement of goods and people would be enforced, but within which they could move freely.²⁴

To discuss the feasibility of regulatory harmonization and labour market integration is well beyond the scope of this paper. Labour market integration in particular would be complicated to arrange, particularly if, in addition to Canada and the US, it were to involve Mexico, whose inclusion in the NAFTA was seen by the US as an alternative, rather than a prelude, to permitting more labour mobility across its southern border. And even if it were decided that such an arrangement could reasonably be confined to the US and Canada, there are more issues implicit in it, having to do with interactions among refugee and immigration policies of both countries and the domestic labour market rights of their citizens and residents, than can be even listed, let alone discussed, here. However, the fact remains that, from the point of view of simple economics, there are strong complementarities between North American labour market integration and the feasibility of active monetary co-operation of any kind within the area, and it will be important to keep these clearly in view as the discussion of these matters progresses.

²⁴These proposals have taken a variety of forms, and their discussion is beyond the scope of this paper. See however Danielle Goldfarb (2003) for a survey of them that pays particular attention to looking for common elements among them

VIII Summary and Conclusions

A salient fact about recent North American history is that, although a high degree of economic integration has come into being in recent years, this development has had no parallels on the political front. North America differs sharply from Europe in this respect, but not only in this respect. The asymmetries among Canada, Mexico and the United States that stem from the dominant economic and political size of the latter, not just within North America but in the world as a whole, are also without parallels in Europe. The nature of the interests that the US pursues, and of the constraints it faces as it does so, mean that North American concerns will not always take pride of place in its policies. It bears repeating that this does not mean that the US's actions will always, or even usually, run contrary to the interests of Canada and Mexico, but, short of some unexpected events capable of generating a political dynamic in North America similar to that which has been in play for so long in Europe, it does mean that any initiatives aimed at bringing North American economic and political institutions into line with the interests of that area considered in isolation are probably going to have to come from these smaller countries. And it also means that among these initiatives, the ones which also happen to promote broader US interests are more likely to be successful.

US interests in the monetary area are quite evidently global in scope, and US policy pronouncements on these matters have made their authorities' awareness of this fact quite clear. Though Assistant Secretary Summers, quoted above, spoke for a previous administration, there is no reason to believe that the policies of the Bush administration on this matter are any different. On the contrary, the silence from Washington in response to President Fox's raising of the question of North American monetary integration in 2000, and from Ambassador Cellucci in the face of ongoing Canadian discussions of the same issue, were extremely eloquent. The management of trade in natural resources, including perhaps water, and since September 11th 2001, security, are all areas in which the US has expressed a keen interest in closer North American co-operation, but monetary policy does not seem to be on the list.

A lengthy debate in Canada has nevertheless shown that US political co-operation would be essential to the creation of a fully fledged North American monetary union, or indeed to the viability of any kind of arrangement whereby Canada (and presumably Mexico) adopted the US dollar. In this paper, I have shown that similar considerations would usually be at play in any move towards giving the nominal Canadian/US dollar exchange rate an important place among

the goals of Canadian monetary policy. Unilateral attempts simply to fine tune the rate's behaviour within a version of the inflation targeting regime currently in place would, at the very least, degrade the transparency of Canadian monetary policy with no obvious benefits to offset this loss. Any scheme to control the nominal exchange rate more actively, so that real pressures emanating from world markets would sometimes be transmitted to domestic money wages and prices with greater force than they currently are, would impose economic and political stresses that would be hard to deal with unilaterally. Co-operation from the Federal Reserve in managing such a regime would ease these pressures, but it is not to be expected. A higher degree of integration among North American labour markets would also help, but to suggest such a possibility is to open up a set of economic and political questions that we have barely begun to analyse.

Even so, it has also been argued above that monetary stability within the separate currency areas of a highly integrated economic space such as North America makes its own contribution to overall economic performance, and it has also been suggested that the more communication there is about policy among the monetary authorities of the separate areas, the greater is this contribution likely to be. Great strides towards monetary stability have been taken in all three NAFTA countries in the last ten years, and the institutions through which communication can and does take place among them are highly developed. There is, however, room for improvement, in all three countries. Canada's inflation targeting regime still looks a little tentative - is 2 per cent really price stability? - and at the time of writing, there are also concerns about the fiscal situation, particularly at a provincial level; Mexico introduced inflation targets later than did Canada, and perhaps still has some way to go in establishing their credibility, with fiscal issues still proving politically difficult there; and in the US, the Fed's mandate is still uncomfortably vague for some tastes, while the long run fiscal outlook, particularly when it is viewed against the background of the current account balance, is positively alarming.

Perhaps the scarce political energy that is available to address monetary questions in all three countries would be usefully deployed in fixing these problems. Successes here would at least ensure that a functional (if untidy) set of North American monetary arrangements continue to serve the continent at least as well in the future as they have in the recent past, and perhaps better. This may be a modest goal, but it is both attractive and viable. In matters of economic policy it is sometimes dangerous to ask for more.

References

- Amano, R. and S. van Norden (1993) A forecasting equation for the Canada-US dollar exchange rate, in *The Exchange Rate and the Economy*: proceedings of a conference held at the Bank of Canada 22-23 June, Ottawa, Bank of Canada
- Amano, R. and S. van Norden (1995) Terms of trade and real exchange rates: the Canadian evidence *Journal of International Money and Finance* 14 (April) 83-104
- Bailliu, J., A. Dib and L. Schembri (2005) Multilateral adjustment and the Canadian dollar International Department, Bank of Canada, (mimeo)
- Balassa, B. (1964) The purchasing power parity doctrine - a reappraisal *Journal of Political Economy* 72, (Dec.) 584-596
- Bank of Canada (2003a) Correction (Press Release) Ottawa, Bank of Canada, 29th October
- Bank of Canada (2003b) Intervention in the foreign exchange market (Background), Ottawa, Bank of Canada, 3rd December
- Carr, J. L. and J. E. Floyd (2002) Real and monetary shocks to the Canadian dollar: do Canada and the US form an optimal currency area? *North American Journal of Economics and Finance* 13, 21-39
- Chen, Y-C and K. Rogoff (2002) Commodity currencies and empirical exchange rate puzzles *IMF Working Paper WP/02/27* Washington DC., IMF
- Clinton, K. 2001 On commodity sensitive currencies and inflation targeting, *Working Paper* 01-03, Ottawa, Bank of Canada
- Cohen, B. (2003) North American monetary integration: a United States perspective, paper presented at a conference on Britain and Canada and their Large Neighbouring Monetary Unions, University of Victoria 17-18 Oct

- Cooper, S. (2001) Time for US loonie *National Post*, November 9, 13
- Courchene, T. J. and R. Harris From fixing to monetary union: options for North American monetary integration, *Commentary 127*, Toronto, C. D. Howe Institute
- Devereux, M. and C. Engel, 2004 Expenditure switching vs. real exchange rate stabilization: competing objectives for exchange rate policy, University of Wisconsin, (mimeo)
- Djoudade, R., J. Murray, T. Chan and J. Daw (2001) The role of chartists and fundamentalists in currency markets: the experience of Australia, Canada and New Zealand, in Bank of Canada, *Revisiting the Case for Flexible Exchange Rates*, Ottawa, Bank of Canada
- Flood, R. P. and A. K. Rose (1998) Understanding exchange rate volatility without the contrivance of macroeconomics, *Discussion Paper 1944*, London, Centre for Economic Policy Research
- Freedman, C. (1994) The use of indicators and of the monetary conditions index in Canada, in T Balino and C. Cottarelli (eds.) *Frameworks for Monetary Stability: Policy Issues and Country Experiences*, Washington, DC. IMF
- Freeman A. (1999) Nobel economist urges tying loonie to US greenback *The Globe and Mail*, Oct 14, A11
- Goldfarb, D. (2003) Beyond labels: comparing proposals for closer Canada-US economic relations, *Backgrounder No 76*, Toronto, C. D. Howe Institute, October
- Grubel, H. (1999) The case for the Amero: the economics and politics of a North American monetary union, *Critical Issues Bulletin*, Vancouver. the Fraser Institute (September)
- Guillemette, Y., D. Laidler, and W. Robson (2004) The real reason for the Canadian dollar's power trip - and what not to do about it. (e-brief, December 7th) Toronto, C. D. Howe Institute

- Howard, D. (2003) The use of foreign currencies: the United States perspective, in *Regional Currency Areas and The Use of Foreign Currencies, BIS Papers 17*, Basel
- Lafrance R., J. F. Helliwell, R. Issa, and Q. Zhang (2004) NEMO: an equation for the Canadian dollar, Bank of Canada, (mimeo)
- Laidler, D. (1999) *Fabricating the Keynesian Revolution*, Cambridge UK, Cambridge University Press
- Laidler D. and W. Robson (2004) *Two Percent Target: Canadian Monetary Policy Since 1991*, Toronto, C. D. Howe Institute
- Laidler, D, and F. Poschmann (2000) Leaving well enough alone: Canada's monetary order in a changing international environment, *Commentary No. 142*, Toronto, C. D. Howe Institute, May
- Mayer, T. (1999) *Monetary Policy and the Great Inflation in the United States* Cheltenham, Edward Elgar
- McKinnon R. I. (2002) The world dollar standard and globalization: new rules for the game? paper presented at a conference on Exchange Rates, Economic Integration and the International Economy, Ryerson University, 17-19 May
- Meltzer, A. H. (2003) *A History of the Federal Reserve, Vol. I*, Chicago, University of Chicago Press
- Murray, J. and J. Powell (2002) Dollarization in Canada: the buck stops here, *Technical Report No. 90*, Ottawa, Bank of Canada, August
- Murray, J., M. Zelmer and Z. Antia (2000) International financial crises and flexible exchange rates: some policy lessons from Canada *Technical Report No. 88*, Ottawa, Bank of Canada, April

Osakwe, P. and L. Schembri (1998) Currency crises and fixed exchange rates in the 1990s: a review, *Bank of Canada Review* (Autumn)

Robson, W. P. B. and D. Laidler (2002) No small change: the awkward economics and politics of North American monetary integration *Commentary No. 167* Toronto, the C. D. Howe Institute

Rogoff, K. (1966) The purchasing power parity puzzle *Journal of Economic Literature* 34 (June) 647-668

Samuelson, P. A. (1964) Theoretical notes on trade problems *Review of Economics and Statistics* 46 (May) 145-154

Summers, L. (1999) Statement to the Senate Banking Committee Subcommittee on Economic Policy, Trade and Finance, Washington DC, April 23

Thiessen, G. (1999) *The Thiessen Lectures*, Ottawa, Bank of Canada

Timberlake R (1993) *Monetary Policy in the United States* Chicago, University of Chicago Press