1999

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Paper No. 92

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What Economists Know About Canada's Exchange Rate Regime*

by

David Laidler

* I am grateful to John Murray for helpful discussion of the topic of this paper. Much of the work for it was carried out at a time when the author occupied the position of Visiting Economist and Special Adviser at the Bank of Canada. The usual disclaimer is therefore particularly relevant: the views herein expressed are those of the author, who takes full and sole responsibility for them.
Introduction

In the recent flurry of discussion of Canada’s exchange rate regime, the headline grabbing issue has been whether a North American Monetary Union (NAMU) is feasible or desirable.\textsuperscript{1} Two of NAMU’s most visible proponents, Thomas Courchene and Richard Harris, (1999b), henceforth C-H, have rested their case, not only its supposedly positive attractions, but on the alleged shortcoming’s of Canada’s current exchange rate regime. It is their view that a “...flexible exchange rate is not, in fact, serving Canada well within the progressively integrated NAFTA environment”. (p.3)

This conclusion needs addressing in its own right. If it is well founded, and if NAMU turns out, upon inspection, to be undesirable at least for the foreseeable future, it might be thought to justify Canada’s adopting some fixed exchange rate arrangement much less radical than NAMU: a currency board, or a pegged rate, for example. And indeed, C-H have devoted considerable energy to singing the praises of the last-named option.\textsuperscript{2}

Exchange rate regimes are not now, nor ever have been, “one size fits all” items. Most countries of the European Union have recently opted for a common currency, the Euro, and that might have been the right thing to do in their circumstances. A few years ago Argentina set up a quasi currency board, and before that, Panama chose outright official adoption of the U.S. dollar; these decisions too may have been wise ones. But none of this means that a flexible exchange rate is the wrong choice for Canada.

In this essay, I shall show that C-H’s attack on Canada’s flexible exchange rate relies upon an unfortunately selective approach to the available literature dealing with the topic. Precious little of the empirical research which they cite deals specifically with Canada, and they have ignored a
substantial body of work that does. I shall argue that their conclusions about Canada’s exchange rate regime cannot be upheld in the light of a properly balanced assessment of the current state of knowledge about how it has worked in the past and continues to work at present.

Courchene and Harris’s Indictment of the Flexible Exchange Rate

The C-H case against Canada’s flexible exchange rate regime may be summarised as follows, largely in their own words. I number their points for ease of reference in what follows.

(1) “... over any period of time short enough to be interesting, real exchange rates are substantially more volatile under a flexible rate regime than under a fixed one, and almost all of this volatility is due to movements in the nominal exchange rate.” (p.4)

(2) “... macroeconomic fundamentals cannot explain short- to medium-term exchange rate movements.” (p.5)

(3) “... nominal exchange rates can wander from long-term-trend fundamentals for significant periods of time, often two years or more. This is referred to as the ‘misalignment problem’.” (p.5)

(4) “... the Canadian dollar is currently [at about 69 cents, See C-H, p.22] far below any value justified by fundamental benchmarks, and the downward trend has now been intact since 1992” (p.8)

This behaviour of the exchange rate, according to C-H, has been damaging to the Canadian economy. Specifically:
(5) it has been associated with a decline in living standards relative to those in the United States, which in turn is “reflected in the movement of young, well-educated people to the United States.” (p.6)

(6) closely related, it may have helped to undermine productivity growth, “a hypothesis meriting further research”, and “an issue with which defenders of Canada’s flexible exchange rate must come to grips”. (p.9)

(7) At times when the exchange rate is significantly over-valued, “downsizing, moving offshore, and exiting become attractive avenues of adjustment for firms” (p.9) When it is undervalued, it is workers, particularly the "young and well educated" rather than firms that may exit. The overall outcome of exchange rate movements unjustified by fundamentals may be “...the shift of Canadian comparative advantage towards industries that are resource and/or capital intensive, and ... an employment base that is both less diversified and less human capital intensive than would be the case with exchange rate stability.” (p.10)

(8) In addition “...the flexible exchange rate regime may actually have destabilised the internal regional price ratio relative to what would have occurred with fixed rates” (p.13)

(9) All in all: “free trade and flexible rates are inherently inconsistent (Harris 1993, 59)” (p. 11)

The role of “fundamentals”

The basic premise of this apparently damning indictment is that the exchange rate movements that Canada has experienced while floating have been greatly in excess of anything required by the fundamentals which would have been at work regardless of the exchange rate regime. The floating rate is thus presented as having, in and of itself, disrupted the workings of the real economy.
Any assessment of the C-H case, then, must start with the benchmark against which they measure the extent of these allegedly excessive movements, but in fact they are remarkably coy about just what they think the fundamental determinants of the exchange rate to be. They make no direct statement about the matter. Two features of their study, however, suggest that, on balance they rely on Purchasing Power Parity (PPP) theory.³

First, they tell their readers that this theory has always provided economists with their "principal method" of identifying misalignments, and assert that this theory "...does seem to have long term predictive power. Long-term exchange rate trends are relatively well characterised by slow reversion to PPP values, and, after any substantial departure, convergence appears to take between four and six years." (P.5)

Second, though, as Chandler and Laidler (1995, pp. 15-16) showed, the outcome PPP calculations can vary significantly with the prices indices chosen for comparison, not to mention the base date relative to which they are measured, the PPP exchange rate between Canada and the United States has probably lain somewhere in a range of 80 cents and a little above over the last decade. C-H (p.5) suggest that the Canadian dollar was seriously overvalued at 89 cents in the late 1980s, and undervalued at 69 cents in the recent period, and these assessments would be consistent with such a PPP benchmark for the rate's fundamental value.

Purchasing Power Parity

In a recent and authoritative survey paper of empirical work on PPP, Kenneth Rogoff (1996) describes the idea as follows: "purchasing power parity (PPP) is the disarmingly simple empirical proposition that, once converted to a common currency, national price levels should be equal"
(p.647). An alternative way of characterising the idea, which reveals a little more of the complexity underlying it, is that the real exchange rate between any pair of countries, the relative price of a representative bundle of one's goods to that of the other, should be constant. Obviously, a great deal here hinges on the adjective "representative", and this point will be taken up below.

Rogoff characterises recent literature on PPP as having arrived at "a surprising degree of consensus on a couple of basic facts. First... real exchange rates... tend to converge towards purchasing power parity in the very long run... [second,] the speed of convergence... is extremely slow; deviations appear to damp out at a rate of roughly 15 per cent a year." (P. 647)

The first of these basic facts tends to support C-H's use of PPP theory as a benchmark against which to measure misalignment and volatility, but the second describes a speed of convergence of the real exchange rate to its long run equilibrium value after any disturbance which is a great deal slower than their estimate of "four to six years", for which they cite no source. It implies a half life for deviations from PPP in excess of four years. This point is worth noting, because the more persistent are such deviations, the less relevant is PPP as a diagnostic tool for policy analysis.

**The real exchange rate**

If the phrase "representative bundle of goods", used in our earlier definition of the real exchange rate, is read as "identical bundle of goods", one might well expect the equilibrium real exchange rate between any two countries to be constant, and indeed equal to one. Provided the goods in question can be traded, and setting aside the complications introduced by transport costs or artificial trade barriers, arbitrage will eliminate any deviations among their prices produced by any shock.
But representative bundles of goods consumed in different countries can differ, and some items in those bundles, notably services, are not tradable. Moreover if representative consumption bundles did not differ from representative production bundles across countries, there would be no international trade. Anything that can affect long-run equilibrium relative prices within and between countries' consumption and production bundles, therefore, can also affect their long-run equilibrium real exchange rates, whether these be based on national consumption or production bundles. Among these factors are:

(a) differences among countries in labour productivity levels (and growth rates), which lead to discrepancies among the levels (and rates of change) of the relative prices ruling within each country between tradable goods and labour intensive services, some of which are non-tradable;\(^5\)

(b) differences among countries in their *stocks* of net foreign indebtedness, a variable which might put downward pressure on the real exchange rate because a positive trade balance is needed to finance the interest payments associated with it; if government indebtedness plays a big role in total indebtedness, furthermore, then fears about future inflationary policies might also be important in undermining confidence in the currency and putting downward pressure on the real exchange rate:

(c) differences among countries in their *rates of capital inflow or outflow*, a variable that affects the real exchange rate because a current account surplus or deficit is needed to generate the movement of goods that is the real counterpart of the more immediately visible financial transfer; borrowing associated with government deficits might be an important factor here.
(d) differences among countries in the composition of their exports and imports, which create the possibility of an overall terms of trade change when the relative prices of particular items change.

The fact that purchasing-power parity seems to hold in the long run at many times and in many places, implies that changes in the above-mentioned factors usually tend, as a matter of fact, to reverse themselves with the passage of time. The surprising nature of this finding cannot alter its validity if the empirical work that has established it has been well executed. What matters for the Canadian policy questions which C-H discuss is, however, not what is true of many, or even most, countries for most of the time, but what is true of Canada at the present time, and perhaps what is likely to be true in the medium term future as well. C-H discuss the possibility that factors such as those listed above might have influenced the behaviour of the Canadian exchange rate over the last decade or so, but dismiss their importance. In so doing, however, they largely ignore a substantial body of empirical work which has yielded quite contrary results.

Canada’s Equilibrium Real Exchange Rate Since 1970

To the best of my knowledge, the most thorough recent work specifically applying PPP theory to Canada is that of David Johnson (1993). Overall, its results are consistent with those of the much broader body of literature surveyed by Rogoff (1996). Overall, Johnson's (1993) study of the evidence for the period 1870-1991, and an earlier one published in (1990), do not enable us to reject constancy of the equilibrium value of the real Canada-U.S. exchange rate over the preceding 120 years. His work also suggest that, after a disturbance, a little over a decade has passed on average before PPP was restored between the two countries.
Johnson (1993), however, tells his readers that his tests "... over short samples show little support for purchasing power parity, particularly after 1970" (p. 165, italics added). This negative result might stem from the relative paucity of information in short samples of data, but given the behaviour of Canada's exchange rate since 1991, it is hard to believe that the addition of more recent information would change this result for the post 1970 period. Furthermore, later work by Murray, van Norden and Vigfussen (1996) has found that quarterly Canadian data for the period 1959(1) - 1995(1) firmly reject PPP, a result that is quite consistent with Johnson's findings.

In short, whatever may be true on average over many times and places, there is no evidence to support the specific relevance to Canada's post-1970 experience of PPP. And yet this appears to be the benchmark on which C-H base their claims that the Canadian exchange rate has displayed serious and persistent misalignment and excess volatility over that very period. Furthermore, as we shall now see, an alternative approach to modelling the real exchange rate over this same time span does get support from the data. This alternative approach has generated a substantial body of work, largely carried out by researchers at the Bank of Canada.

The Bank of Canada's exchange rate equation

Beginning in 1990, Bank of Canada researchers have worked with an equation that explains the broad configuration of real Canadian-U.S. exchange rate's behaviour rather well. Amano and van Norden (1993, 1995) published the first fruits of that work, and its latest readily available product is Murray (1999). C-H (1999) do not cite, let alone discuss, a single example of it, however. Instead, they assert that "The Bank of Canada's... preferred explanation for the decline of the Canadian dollar is that the exchange rate is simply tracking global commodity prices. Indeed, over
the 1973-99 period, there has been a close relationship between the decline in commodity prices and the exchange rate.” (p. 7)

The second sentence of this statement is true enough, but the first, for which C-H cite no authority, is an over-simplification, on whose basis they argue, misleadingly, that the Bank’s preferred explanation “. . . can account for only a small part of the exchange rate movements of the last decade or so”, the period during which they argue that the Canadian dollar has suffered two episodes of serious misalignment. As C-H note, Bank of Canada officials have indeed sometimes attributed the overall decline in Canada’s real exchange rate since the early 1970s to such a decline, as they have its behaviour in the wake of the 1997 Asian crisis. But they have never, to the best of my knowledge, applied this explanation to the exchange rate’s behaviour over “the last decade or so”, not least because the Bank’s own equation implies that it would be inappropriate to do so.

Details of the Bank of Canada equation differ among particular studies, reflecting the ongoing nature of the research agenda that has and continues to develop it. However, its overall outlines have remained remarkably stable for nearly a decade. Specifically, the equation has from the outset accorded an important role to the relative price of Canada’s commodity exports in determining the real Canada-U.S. exchange rate. In doing so, it distinguishes between the effects of non-energy and energy prices. The equation also attributes an important short-run role to a representative interest rate differential between the two countries. Finally, it should be noted that this is a real exchange rate equation, and so it implicitly leaves room for the Canada-U.S. inflation differential to play its part explaining the behaviour of the nominal exchange rate.

This equation has a number of robust empirical properties that bear directly upon C-H’s claims about the workings of the exchange rate, specifically those numbered (2), (3), and (4) above
dealing with the alleged misalignment of the Canadian dollar over the last decade, not least their assertion that, at 69 cents., the currency was recently significantly undervalued.

First, as can be seen from Fig. 1, which is borrowed from Murray (1999), the Bank of Canada equation tracks the broad outlines of the exchange rate's movements rather well. There are no signs of persistent and serious misalignment, at least as these adjectives would normally be understood. More specifically, the equation implied that the equilibrium value of the exchange rate at the beginning of the decade was around 85 cents, and that, in the second half of 1998, it lay somewhere around 70 cents.

Furthermore, it should be noted that the Bank of Canada's equation attributes the exchange rate's fall over "the last decade or so" not, as C-H's account of the Bank's position quoted above implies, solely to a fall in commodity prices, but to the combined effects of such a fall - a moderate one - acting in conjunction with a dramatic decline in the short-term interest rate differential ruling between the Canada and the U.S.. As Chandler and Laidler (1995) noted, the influence on the exchange rate of this differential, which as measured for three month treasury bills reached a peak of a little over 500 basis points in early 1990, was particularly visible in the latter half of the 1980s and during early 1990s.

*Excess exchange rate volatility*

C-H make much of the alleged capacity of a flexible exchange rate regime to generate excess exchange rate volatility. Flood and Rose (1998) is the only study of this matter that they cite, and they quote its basic conclusion as follows, with evident approval.
"Simply put, to a first approximation, countries with fixed exchange rates have less volatile exchange rates than floating countries, but macro-economies that are equally volatile... By choosing the exchange rate regime, policy thus has an important effect on exchange rate variability, but not on the volatility of traditional macro-economic fundamentals." (Flood and Rose, 1998, pp. 2-3, as quoted by C-H, p.5)

Flood and Rose’s argument is of course a non-sequitur, for they do not consider the possibility that a particular country’s choice of a floating exchange rate might itself be the consequence of some other factor which itself is simultaneously responsible for greater real exchange rate variability. However there are more serious problems than this with C-H’s reliance on this study to support their case.

It has already been noted that, to measure excess exchange rate misalignment and excessive volatility, a benchmark is needed. That used by Flood and Rose comes from a model in which deviations from purchasing power parity between a pair of countries may be caused by differential variations in their nominal money supplies, their levels of real income, and their short term interest rates. They do not deal with terms of trade effects, and any exchange rate movements caused by them appear, as a result of the design of their study, to be symptoms of excessive volatility.

That may or may not matter for many of the 21 countries included in Flood and Rose’s study. In recent literature dealing with exchange rates, particularly those of advanced countries, it is quite common for the effects of commodity prices on the terms of trade to be ignored. Rogoff (1996), for example, does not mention these effects when discussing factors tending to undermine PPP theory. When the issue is discussed, it is usually with regard to developing countries. The study by
Cuddington and Liang (1998) discussed briefly below, and cited by C-H, is an example of work in this genre. However, there are some important commodity producers among advanced economies. Canada is one of them, and it is a serious omission to ignore the potential influence of world commodity prices when the Canadian exchange rate is being discussed.

Be that as it may, and though Canada was included in Flood and Rose's study, the currency against which they measured each of the 20 exchange rates whose volatility they sought to assess was the Deutschmark (See their Fig. 1). This was no doubt a sensible choice on their part for a study of the behaviour of exchange rates during the period of the European Monetary System, which was intended to contribute to the debate that surrounded the launch of the Euro. But why C-H find this study so relevant to the Canadian debate as to make it the only empirical work on excess exchange rate volatility they cite is hard to fathom.³ For what it is worth (not much in the current context) it should be noted that Flood and Rose do present, but do not analyse, data (their Figs. 2 and 3) showing that the Canadian dollar was far less volatile against the U.S. dollar over the period of their study than any other currency in their sample.

Now Chart 1, above, shows that the Bank of Canada's equation by no means explains all the variation in the Canadian exchange rate. It tracks the broad trend of the rate since 1970, and picks up major turning points too, not least over the last ten years or so. But it leaves quite a bit of shorter term variation unexplained. With respect to the last ten years, for example, the equation can explain an appreciation to about 85 cents at the beginning of the '90s, and a depreciation to about 69 cents in 1998, but it cannot explain 89 cents and 63 cents. There does, therefore, seem to be some excess volatility in the Canadian-U.S. exchange rate, though by no means as much as one would think, using PPP as a benchmark.⁹
This phenomenon was the principal subject of a recent Bank of Canada *technical report* (Murray, van Norden and Vigfussen 1996), which tested models of the speculative behaviour that has perhaps underlain it. This study seems to show that extrapolative speculation, which has the capacity to destabilise markets, can explain short-term fluctuations of the exchange rate around its longer run predicted value when it is in the neighbourhood of that value. It also suggests, however, that the very tendency of such speculation to move the exchange rate outside of that neighbourhood creates opportunities for profitable speculation based on fundamentals. Stabilising speculation then comes to dominate the market, and in due course moves the exchange rate back towards its equilibrium value.

We have seen that it is hard to reconcile C-H's alarmist comments about the occurrence of serious misalignment of Canada's exchange rate (points 2 - 4) with the Bank of Canada's exchange rate equation. It is almost as hard to reconcile their worries about excess volatility of the exchange rate (point 1) with the results just reported. It is, furthermore, worth noting that there is no empirical evidence whatsoever that excess volatility of the magnitudes under discussion here has had any adverse consequences for the economy's performance.

*Possible weaknesses in the Bank of Canada equation*

Though the Bank of Canada's exchange rate equation, upon which the foregoing results are based, has proved robust, it does have features which some might find troubling, and which ought to be, indeed are, the subject of further research.

To begin with, as noted above, the equation distinguishes between the prices of non-energy commodities and of energy, and the latter variable has what seems at first sight a perverse effect: a
fall in energy prices leads to an appreciation of the Canadian dollar. Murray, van Norden and Vigfussen (1996), among others, have, however, noted that Canada is only a small net-exporter of energy, and that its manufacturing exports are particularly energy intensive. The implication here is that the indirect effects of energy prices on the terms of trade, that arise from its being an intermediate input to manufacturing, outweigh their direct impact. It is worth noting that this interpretation of the evidence is a good deal more than an ex post rationalisation: the factors at work here were investigated by Macklem (1993) in the course of a wide-ranging analysis of the effects of terms-of-trade changes on the behaviour of a dynamic general equilibrium model calibrated to Canadian data (See Macklem 1993, pp. 22-34).

Another problem, perhaps of more significance, has been noted by John McCallum (1998). In a paper which C-H cite, he has recently suggested that the Bank of Canada equation has put too much weight on commodity prices, and has neglected the role of government debt, in driving down the exchange rate, particularly in the 1990s. McCallum shows that his own version of the equation, modified to include government debt, does fit the data reasonably well, and that inclusion of this variable reduces the apparent significance of commodity prices in explaining the overall depreciation of the Canadian dollar since the early 1970s.

As we saw above, there are good a priori reasons to suppose that the economy's overall level of foreign indebtedness, public and private sector combined, might affect the equilibrium real exchange rate, and that government debt and deficit variables might have a special role to play here. Hence, the relationships involved here will likely prove to be more complex than McCallum suggests, and further investigation of the role of government debt, reported by Murray and Antia (1999), suggests that his initial results are indeed somewhat fragile. But they should not be
dismissed; rather they should be regarded as raising issues that require more investigation than they have as yet received.  

None of this, however, should give any comfort to critics of Canada's current exchange rate regime. In 1993, describing the then current state of play in exchange rate modelling, Simon van Norden remarked, with tongue only partly in cheek, that "Empirical exchange rate models last three years. It takes a year and a half to make a credible one, and another year and a half to get enough new data to discredit it." (Amano and Van Norden, 1993, p. 207) The Bank of Canada's then new equation has proved remarkably robust, particularly with respect to the role it accords to non-energy commodity prices and monetary policy in driving the real exchange rate.

More to the point of the current discussion, moreover, that equation lies at the heart of a research agenda which has systematically generated results that are at gross variance with C-H's story of serious misalignment and excess volatility on the part of Canada's exchange rate. It would be inappropriate to argue that the hypotheses which that equation embodies have been proved true beyond any reasonable doubt, if only because the history of applied econometrics is littered with once robust relationships that have eventually encountered data with which they could not deal. It is, however, quite appropriate to question the wisdom of C-H's decision to ignore this body of work altogether in framing their attack on Canada's flexible exchange rate regime. If they disagree with it, the least they could have done is explain why.

Courchene and Harris on the Consequences of the Floating Exchange Rate

Given that there is so much room for doubt about their claims about persistent misalignment and excess volatility on the part of the exchange rate, it is difficult to know how much credence to
give to C-H's discussions of the allegedly serious consequences of these phenomena. If, as seems to be the case, most movements in Canada's real exchange rate over the last thirty years were driven by fundamentals, then, as a first approximation, these movements would have taken place under a fixed rate regime as well, albeit by way of variations in domestic wages and prices rather than in the nominal exchange rate.

There is, however, one important exception here. The Bank of Canada equation attributes a potentially important "short-run" influence on the real exchange rate to monetary policy. This result is prima facie evidence that the nominal exchange rate systematically overshoots its new equilibrium value after a monetary policy shock. This result is completely compatible with the view that, under a flexible exchange rate, badly implemented monetary policy can create excessive volatility in the real exchange rate. It is, furthermore, an essential property of a flexible exchange rate regime that it permits the domestic authorities to choose their own monetary policy. If they choose wisely, all well and good, but if not, then the exchange rate regime is at least open to conviction as an accessory to damaging consequences.

As I argued in Laidler (1999), this point is probably important in the Canadian case. Only since 1991 has Canadian monetary policy had a clear goal, namely targets for the domestic inflation rate, and only since the mid-90s has this goal become credible enough to provide a firm anchor for domestic expectations. For the period 1970-1990, therefore, and perhaps even for a little longer than that, there is indeed a case to be made, no doubt with the benefit of a good deal of hindsight, that the monetary policy regime was not all that well configured, and that lying behind it was an unsustainable fiscal policy regime too.
To the extent that the flexible exchange rate permitted such a state of affairs to persist, it is open to criticism. At the same time, however, had Canada been on some sort of fixed exchange rate over this period, it is far from clear that the inevitable conflict that would have arisen between maintaining the stance of domestic policy and keeping a fixed exchange rate in place would have been settled in favour of the latter.

Even so, the long run downward trend of Canada's real exchange rate since 1970 has had nothing to do with monetary policy. It has been largely driven by a secular decline of commodity prices, and perhaps, if John McCallum's results prove robust, by a secular growth of public debt too. That this secularly declining exchange rate has been associated with a relative decline in Canadian living standards, as C-H remark (point 5 above), is true enough, but it is hard to believe that there is a cause and effect relationship running between the two. It is far more likely that both result from deeper-seated causes and it is hard to see how these would be removed by adopting a new regime for the nominal exchange rate.

C-H's point (6), that the exchange rate regime has perhaps undermined productivity growth in Canada relative to that in the United States, would tend to contradict this conclusion, but they present it, not as a conclusion, but only as a hypothesis which defenders of exchange rate flexibility need to address. With all due respect, some of us (e.g. Laidler 1999, Murray 1999) had already addressed this issue in work available to C-H before the publication of their Commentary, and it will suffice here to summarise what has already been said on this matter.

(a) The most recent and most reliable data available suggest that there has been no productivity growth (as opposed to level) gap between Canada and the U.S. over the floating rate period, including the 1990s, when productivity growth in the Canadian business sector was, if
anything, marginally higher;

(b) Superior productivity growth in U.S. relative to Canadian manufacturing, particularly in the 1990s, is more than entirely accounted for by the good performance their machinery and electronics sectors, and by poor performance among Canada's small manufacturers;

(c) There are wide inter-provincial differences in manufacturing productivity growth within Canada, with manufacturers in two provinces in particular, Alberta and Ontario, doing just as well as their United States counterparts.

None of this is to say that Canada does not have a productivity problem relative to the United States: there is indeed a longstanding gap between the countries in productivity levels. It is, however, to say that productivity growth performance is so varied across sectors and provinces within Canada that it is hard to see how any overall problem can be put down to a single economy-wide factor such as the exchange rate regime. To the extent that there is a link between productivity and the exchange rate performance, it is far more likely that causation has run from the former to the latter, or that both are the consequences of deeper seated causes.

C- H's major concern about the exchange rate regime, (7) above, is that it has distorted the economy's structure by undermining the accumulation of fixed capital when overvalued, and by encouraging the emigration of human capital when undervalued. But this conclusion rests on the premise of serious and persistent exchange rate misalignment. To the extent that evidence against persistent misalignment marshalled above is found convincing, then there can be no grounds for attributing these migration problems, if problems they indeed be, to the exchange rate regime.

Finally, C-H's complaint (8) that the flexible exchange rate has promoted excess volatility in the relative prices ruling between regions of Canada is based on what seems to be a misreading
of a recent paper by Cuddington and Liang (1998). C-H characterise this as a "cross country study of commodity exporters and exchange rate regimes" which "finds that volatility of real commodity prices - defined as nominal commodity prices deflated by the manufacturing unit value-added index - is systematically higher under flexible exchange rate regimes than under fixed exchange rate regimes" (p. 13, italics added)

In fact, Cuddington and Liang study the behaviour of commodity price indices aggregated over exporting countries, and the only disaggregated data they present are by commodity group. Furthermore, their identification of flexible exchange rate periods appertains to the world economy in general over the periods 1880-1996 and 1960-1996, rather than to any specific country. Their study generated no specific evidence on the effect of Canada's exchange rate regime on relative prices within the country, nor was it designed to do so.

Conclusions

It is hard to square C-H's conclusion (point 9) that free trade and a floating exchange rate are fundamentally incompatible with the foregoing arguments, almost as hard, indeed, as it is to square it with the enormous growth that has taken place in Canada-U.S. trade in the 1990s under the current exchange rate regime.

This does not mean that the merits of alternative exchange rate regimes for Canada should not be debated, or that, if a compelling case can be made that some other regime is more attractive than that currently in place, it ought not to be adopted. However, such a case must rest on the virtues of the particular fixed rate alternative that is proposed, and not on the alleged vices of a flexible exchange rate. C-H's attempt to show that the latter has served Canada badly, and that it continues
to do so, rests on a selective and sometimes inaccurate reading of relevant evidence. The regime now
in place clearly has not always worked up to a textbook level of perfection, but just as clearly, it is
not broken, and it doesn't need radical repair.
References


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Endnotes

1. In addition to Courchene and Harris, Herbert Grubel (1998) has also been a forceful advocate of NAMU.

2. Indeed, in earlier work (eg. 1993) Harris has advocated an adjustable peg as a desirable exchange rate arrangement in its own right. C-H distinguish between an adjustable peg and a "full-blown fixed rate regime [which] would perforce require as an integral component the full co-ordination of fiscal policy, both federal and provincial" (p. 17), and claim to find merit in the latter, though not the former. They give no specifics of what it would mean to make "Canada's attachment to the U.S. dollar a keystone of the country's national economic policy within the broader North American framework." (p.18), so perhaps the distinction they draw here has more rhetorical than substantive significance.

3. Another approach to assessing a benchmark exchange rate invoked by C-H is the so-called fundamental equilibrium exchange rate (FEER) approach pioneered by John Williamson, e.g. (1994). This concept is best adapted to the normative analysis that would have to underpin a regime in which monetary authorities pursue "target zones" for their exchange rates. Since C-H do not advocate such a policy regime, and since a study Mark Chandler and the current author (Chandler and Laidler 1995), to which C-H refer, suggested that an appropriate estimate of Canada's was at that time between 69 and 72 cents, it is hard to believe that this concept underlies C-H's complaints about the bad behaviour of Canada's flexible exchange rate. See C-H (p.7) for their non-committal discussion of this concept.

4. It should be noted, nevertheless that Rogoff is presenting his readers with an average convergence speed based on a wide variety of studies, some of which have shown that it has
been significantly quicker than that in particular times and places See Rogoff (1996, pp 656-8) for the details.


6. Economic theory would lead one to expect PPP theory to perform quite well when disturbances to the exchange rate are primarily monetary in origin. That is probably why the theory enjoyed a considerable vogue immediately after World War 1, and experienced something of a revival in the 1970s. Note however, that the classic critique of the theory, by Keynes (1923 pp.70-86) is a product of the post-World War 1 debate, and develops all the arguments about the likelihood of real exchange rate movements rendering the concept unhelpful that are used in this note.

7. In the earlier versions of this equation, monetary policy shocks were represented by the difference in a short-long yield spread between Canada and the United States; in later versions a short interest rate differential is used. The price of oil has replaced an overall energy price index, while the price index relative to which commodity and energy prices are measured has changed from a Canadian imported manufactured goods deflator, to the U.S. GDP deflator.

8. It is also interesting to note that C-H's reliance on Flood and Rose's study has led them into what ought to be the rather embarrassing trap of using an extremely contrived "quotation" from Milton Friedman (1953) to epitomise the latter's views on the workings of a flexible
exchange rate. Comparison of C-H's rendering of Flood and Rose's quotation with what Friedman actually wrote in 1953 reveals that an ellipsis in the middle of the passage covers no less than fifteen pages of omitted text, and that, C-H's deployment of a full stop in place of Flood and Rose's second ellipsis notwithstanding, the second part of the passage ends in the middle of Friedman's sentence! Compare C-H (p.4), Flood and Rose (p.2) and Friedman (p.158, p.173)

9. It would nevertheless be wrong to infer that the dollar's depreciation to the region of 63 cents in the late summer of 1998 is either totally inexplicable, or explicable in terms of factors specific to the foreign exchange market per se. This decline was one of the many side-effects of a world-wide "flight to quality" into U.S. government securities that followed Russia's default. In the current context, it is worth recording that, at the same time, under Argentina's currency board arrangement, though the exchange rate was maintained, the spread between short-term interest rate on Peso and Dollar denominated loans reached 400 basis points.

10. See Murray and Antia (1999) for a useful account of ongoing Bank of Canada work on these and related issues.

11. See Rudiger Dornbusch (1976) for the classic account of exchange rate overshooting in the more recent literature.

12. Guilt by association, stemming from the capacity of flexible exchange rates to permit the implementation of inappropriate policies, lies at the heart of much of their unpopularity, as Friedman (1953) long ago argued, with specific reference to work by Ragnar Nurkse (1944). As I argued in Laidler (1999), following Friedman, this guilt-by-association should not
distract attention from the fact that a flexible exchange rate is equally capable of permitting
the implementation of a well conceived policy regime, as I believe it has in Canada since
the mid-1990s.

13. Though C-H (1999b) are careful not to attribute falling living standards to the decline in the
exchange rate, Courchene (1999), writing alone, is less so. He argues (p.3) that the decline
in the rate from 104 cents in 1974 to 66 cents in April 1999 “represents an enormous fall in
our living standards vis-a-vis the Americans”. The identical phrase appears in notes co-
authored by C-H, (1999a) submitted by Courchene to the Senate Committee on Banking

14. Grubel (1999) is more inclined to present this argument as well supported. As the reader
will see below, the evidence seems to point against this interpretation of the facts.

15. Laidler (1999) provides references to recent work on productivity that bears on the following
conclusions.