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**Monetary Convergence
between Canada and the
United States: A Critique
of the Official View**

Martin Coiteux

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Monetary Convergence between Canada and the United States:

A Critique of the Official View

Martin Coiteux

HEC Montréal

Monetary convergence with the United States is not a popular idea in Canadian political circles. Given Canada's dependence on the US economy for its prosperity, this is surprising. Monetary union between the two countries has been advocated by well established scholars (see Herbert Grubel, 1999, and Tom Courchene and Richard Harris, 1999a and 1999b, for some of the most highly cited papers) but politicians in the country have paid much more attention to the arguments developed by the Bank of Canada's economists (see Lafrance and Schembri, 2003, for a synthesis of those arguments) and authors like Laidler (1999). According to what may be coined the official view, Canada is a net exporter of commodities while the United States are a net importer. This makes the two economies structurally different, which implies the need for made in Canada interest rates and consequently, exchange rate flexibility between the two dollars. Moreover, made-in-Canada interest rates are anchored into a successful inflation targeting framework not paralleled in the US. On those grounds, monetary convergence with the United States would simply go against the economic interests of the country.

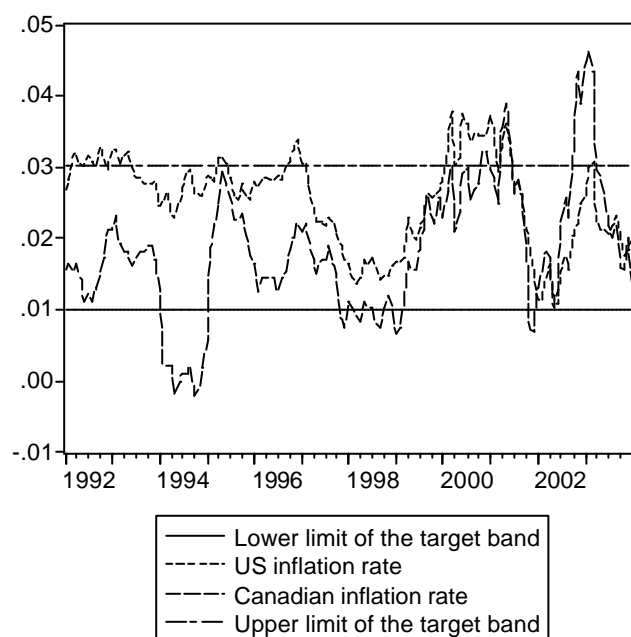
As shown in this paper, there are some serious problems with the official view. First, the idea that Canada has a superior anti-inflation policy is simply not supported by the data. As a matter of fact, the inflation rate delivered by the US Federal Reserve (the FED) fits quite well within the limits set by the Bank of Canada's inflation targets. Second, there is little evidence that fluctuations in the international price of commodities exported by Canada provide any justification for made-in-Canada interest rates and a flexible exchange rate. True, there seems to be a link between the relative price of those commodities and the exchange rate. However, this link looks more like the result of a self-fulfilling prophecy encouraged by the Bank of Canada than like any fundamental relationship between this particular price and Canada's relative terms of trade. In sum, we find little support for the idea that monetary convergence with the United States would be detrimental to Canada's economic interests.

Two highly compatible monetary policies

Officially, Canada and the United States follow quite different monetary policies. In 1991, Canada adopted the framework of inflation targeting as a baseline for its monetary policy. Under current practice, the only official objective of the Bank of Canada is to keep the rate of CPI inflation around an average of 2% per year and within a narrow band of $\pm 1\%$. This contrasts with the multiple objectives of the FED, which are to promote the goals of maximum employment, stable prices, and moderate long-term interest rates (see Federal Reserve, 1994). The US does not set an explicit and exclusive inflation target. In practice though, the actual inflation rate delivered by the FED fits quite well within the inflation target band of the Bank of Canada.

Figure 1

The Bank of Canada's Inflation Target Band and the Inflation Performance of Canada and the US

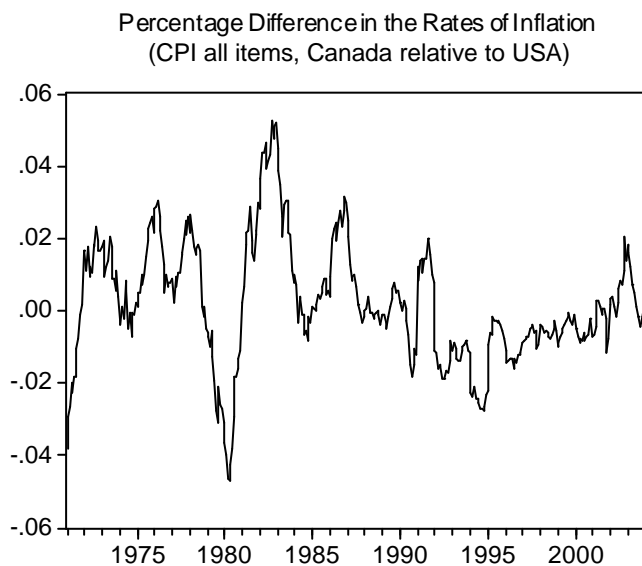


Since the adoption of an official inflation target band in Canada, the US CPI inflation rate has almost always remained within the limits set by the Bank of Canada for the Canadian inflation rate. Actually, as can be seen on figure 1, it is the Canadian inflation rate, not the US, which has exhibited the largest deviations from established limits. This occurred in 1994, when the Canadian inflation rate dipped below 1% and again in

late 2002-early 2003, when it rose way above 3%. If we abstract from those two episodes, one can see a pattern of strong convergence between the two inflation rates. In figure 2 where we represent the percentage difference in the two inflation rates, this pattern appears clearly since the mid-1980s at the same time as the two economies were becoming more integrated, first as a result of the Canada-US free trade agreement and then NAFTA.

In sum, the two inflation rates are quite convergent and the rate of inflation delivered by the FED would perform very well within the inflation targeting framework adopted by Bank of Canada since 1991. The two central banks may officially proclaim to have different missions but in practice this does not seem to imply any fundamental difference in their monetary policies.

Figure 2



Questioning the price of commodities argument

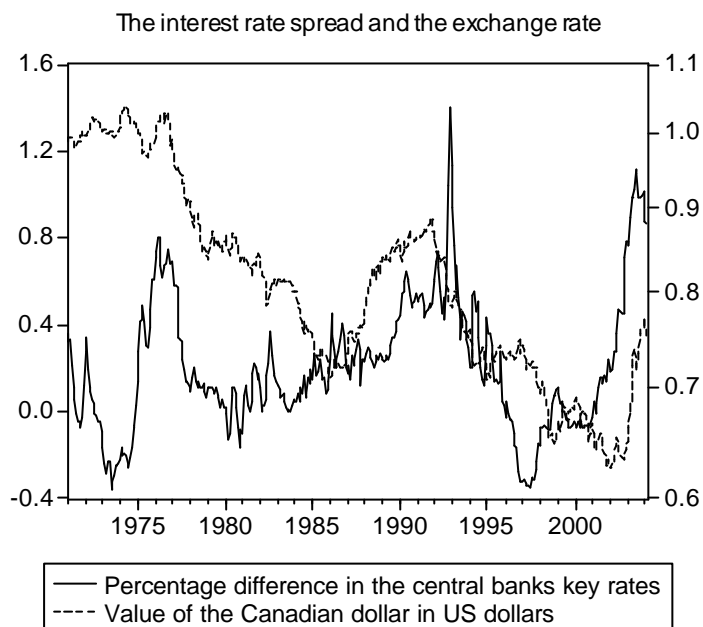
The two inflation rates may converge and yet the rates of interest needed to achieve this convergence may be quite different – depending on where each has to lend or borrow. The interest rate spread between Canada and the United States is indeed both variable and quite sizable at times.

On the Bank of Canada website, an interesting diagram describes how the Bank sees its monetary policy actions affecting aggregate demand in order to achieve the desired inflation rate.¹ One of the key links is between the overnight interest rate and the Canadian-US dollar exchange rate. A decline in the overnight rate (assuming US rates to remain constant) brings a decline in the value of the Canadian dollar, which compounds the positive effect of the interest rate decline on the national aggregate demand. The symmetric sequence holds in the case of an increase in the overnight rate.

Nevertheless, graphically and even through more formal statistical testing, we find no stable relationship between the interest rate spread and the level of the exchange rate. Figure 3 in which we represent the percentage difference between the bank rate in Canada and the effective rate on the US Federal Funds is convincing enough in this respect.

¹ See <http://www.bankofcanada.ca/en/monetary/index.htm>

Figure 3



Now, it is true that the official view brings another variable into the equation. If Canada is a commodity exporting country, financial markets will anticipate a worsening in the Canadian balance of payments when the commodity price of fall in international markets. In a flexible exchange rate regime, they will thus anticipate a falling Canadian dollar and act on the basis of that expectation. This view has been criticized elsewhere as an oversimplification because after all, Canada is not exporting only commodities. As a matter of fact, the Canadian terms of trade, relative to the US terms of trade, have shown no declining trend over the last twenty years (see Coiteux, 2003). How could the price of commodities argument explain the downward trend in the value of the Canadian dollar?

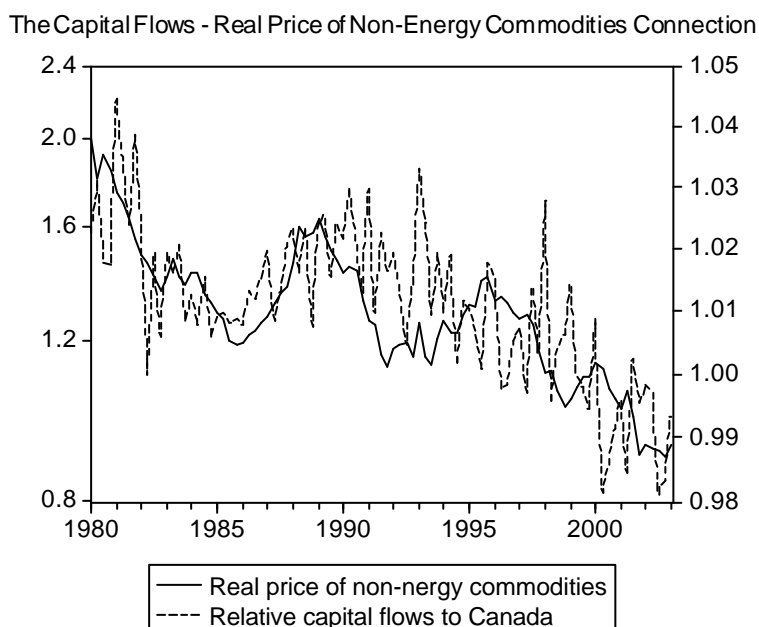
Nevertheless, the Bank of Canada has discovered a price index, which it calls the real price of non-energy commodities, whose trend looks very much like the trend in the exchange rate. This index is computed as the ratio of a US dollar price index of several non-energy commodities exported by Canada to the US GDP price deflator. Since then, the Bank uses this variable in its exchange rate forecast equation and financial markets took note. We have investigated the link between the real price of non-energy commodities used by the Bank of Canada and the real exchange rate as it should be in theory. The real exchange rate is

computed as the ratio of the Canadian CPI, expressed in US dollars after multiplication by the exchange rate, to the US CPI. The results are quite interesting.

First, we find no statistically stable linear relationship (a *cointegrating relationship* in the jargon used by economists) between the two variables: the trend in one does not explain the trend in the other. If one recalls that non-energy commodities weight less than a third in the vector of Canadian exports, this finding should not be too surprising. What is surprising is how well it still seems to perform in the Bank of Canada equation.

The reason seems to lie in the fact that the index used by the Bank of Canada is closely associated with another variable, which is the net capital flows going to Canada relative to the US (see figure 4). In Coiteux (2004), this variable is measured as the Canadian to US ratio of one plus net capital inflows as a percentage of GDP, excluding changes in official reserves and netting out net interest and dividend payments. The correlation between this variable and the real exchange rate is remarkable.

Figure 4



When the real exchange rate, the real price of non-energy commodities and the net relative capital flows variable are brought together into the same analysis, we find a statically stable linear (cointegrating) relationship among the three. What is even more interesting is the direction of the causality chain that seems to link the three variables. A change in the real price of non-energy commodities brings a change in relative capital flows, which simultaneously affects the real exchange rate. But then, the change in the real exchange rate triggers a new change in relative capital flows, which again impacts on the real exchange rate. This second round channel between capital flows and the real exchange is what gives persistence to the episodes of exchange rate depreciation and appreciation.

The link between the real price of non-energy commodities and the real exchange rate may thus be just a self-fulfilling prophecy. The real price of non-energy commodities does not affect Canada's relative terms of trade in the long run but the Bank of Canada has contributed so much to emphasize its link with the exchange rate that financial markets act on the belief that the link is true. Because of the reinforcing link between the exchange rate itself and capital flows, what could be temporary episodes of appreciation and depreciation in the value of the Canadian dollar transform into long run trends. Those trends just do not appear to be supported by the fundamentals of the Canadian economy.

It may be difficult to undo the now well entrenched perception that Canada's economy is essentially commodities oriented but if this can be done, Canada may well live with less exchange rate flexibility and thus more monetary convergence with the United States.

Why would this be surprising? Canada after all depends as much on the US economy as Belgium, for example, depends on the economies of other European Union countries with which it formed a monetary union.

Of course, the existence of a highly unstable interest spread between the two countries remains to be explained. In order to deliver the same rate of inflation as the FED on average, the Bank of Canada seems to raise the spread between Canadian and US interest rates when aggregate demand grows more rapidly in Canada than in the US. Recently, this occurred after the high tech asset bubble burst in the US. In a symmetrical way, the Bank seems to have to reduce the spread when aggregate demand is sluggish in Canada and not in the US. This occurred between 1994 and 1997 when the Canadian government had to

slash primary spending in an effort to curb an unsustainable debt dynamics. Nevertheless, those asymmetric situations tend to revert themselves in the medium run. In this sense, they may not constitute an insurmountable obstacle to more monetary convergence with the US.

Conclusion

Canada may proclaim to pursue a monetary policy that is fundamentally different from the one pursued in the United States but as we have seen in this paper, the inflation rate actually delivered by the FED fits very well within the target band set by the Bank of Canada. This however does not mean that the two monetary policies are totally convergent as a variable spread between Canadian and US interest rates may be required to obtain the same ultimate inflation objective.

The interest spread between the two countries is indeed both variable and at times quite sizable. Nevertheless and contrary to the usual central bank representation of how monetary policy impacts on the economy, we find no relationship between the interest spread and the Canadian to US dollar exchange rate. It is true that the official view brings a third variable into the equation, which is the real price of non-energy commodities because of its alleged impact on the Canadian economy.

The analysis presented in this paper raises some serious doubts about the validity of the official view. The link between the real price of non-energy commodities, which appears to have no long run impact on Canada's relative terms of trade, seem to be the result of a self-fulfilling prophecy encouraged by the Bank of Canada rather than the consequence of a fundamental structural difference between the Canadian and the US economies.

Putting all pieces together, it appears that the Canadian economy, contrary to the official view, could perform well with more monetary convergence with the United States.

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