

Discussion

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The paper by Steven Globerman and Paul Storer addresses an important set of issues. It first describes the evolution of exchange rate volatility since the adoption of inflation targets in Canada in the early 1990s. The authors provide evidence of increased Canada-US nominal exchange rate volatility after the mid-1990s—around 1997, more precisely. This is based on descriptive statistics, but no particular event seems to be responsible for that change. The low inflation environment provided by the ongoing monetary policy is considered as a possible contributing factor to the joint occurrence of high exchange rate volatility and reduced pass-through. Changing trade patterns and increased international competition are viewed as other probable causes of this phenomenon. These observations have a direct implication for the optimal weight central banks should put on exchange rate movements when they are disconnected with inflation rates.

The reduced pass-through will result in observed prices deviating from the purchasing-power-parity condition. It is hypothesized, as in Engel and Rogers (1996), that the variability of these relative price changes will depend on distance and the existence of a national border. These relative-price border effects are meant to represent the microeconomic costs imposed on the economy by increased exchange rate volatility in a low inflation and reduced pass-through environment. The authors argue that these costs should be compared with the benefits associated with inflation targeting. In the remainder of this discussion, I will summarize the analysis performed by Globerman and Storer and suggest additional empirical evidence they should examine.

Exchange Rate Volatility and Reduced Pass-Through

The paper's Figures 1 to 4 provide evidence of increased Canada-US nominal exchange rate volatility after the mid-1990s, but mostly after 1997, according to the authors. Casual observation and a test of equal variance for the 1975–96 and 1997–2005 subsamples support this claim. The evidence is strong, but it would be useful to test for the presence of a structural break to further document that observation. Ideally, the test would have to be agnostic about the breaking point and let the data decide on the moment it occurred. How the variance of this bilateral exchange rate has been affected by exogenous temporary events like the Asian crisis of 1997–98 or September 2001 should also be assessed. In addition, it is not certain how the productivity gap that has widened between Canada and the United States in recent years has influenced exchange rate volatility.

The authors' Table 1 and Figure 4 indicate that distance and the existence of a national border positively affect a measure of dispersion in relative prices, $\text{StdDev}[\Delta(P_{it}/S_tP_{jt})] = \sigma_{i,j}$. However, the estimated border-effect coefficient and exchange rate variability both increase dramatically at the end of the sample (around 2001). How much of this increase can be attributed to monetary policy, and how much is due to some exogenous event (September 2001) that may have increased uncertainty and transaction costs for some time? The potential influence of these events can be controlled for by regressing the $\Delta(P_{it}/S_tP_{jt})$ variables on a DUMMY_{2001} and using the residuals to construct a new $\sigma_{i,j}$.

It would be interesting to show changes over time in $\sigma_{i,j}$, since this variable is an indicator of the importance of the above-mentioned microeconomic costs associated with reduced pass-through. We know from Table 1 that dispersion has increased in the latter subperiod, but reporting the mean value of the dependent variable would help interpret the coefficients in that table. Similar dispersion indices could also be generated for the 21 Canadian and 21 American pairs to determine whether price dispersion has increased over time similarly across and within borders. The level of price stickiness is not necessarily the same in both countries, and the separate price-dispersion indices would reveal some of that information.

Explanations of Reduced Pass-Through

Monetary policy

Taylor (2000) emphasizes the fact that the recent low-inflation episode in the United States has also meant lower persistence of inflation. Lower pass-through is possible if there is a reduction in the persistence of cost changes,

since expectations are such that the impact on prices is expected to be temporary. Consequently, the volatility in nominal exchange rates will not be totally transmitted to domestic prices. A greater volatility in exchange rates can be sustained while maintaining the inflation rate on target. Since volatility in the Canada-US exchange rate and the border effects seem to have increased a few years after Canada's adoption of inflation targets, it can be hypothesized that inflation expectations may have taken some time to adapt to the adoption of explicit inflation targets by the Bank of Canada.

Results from the estimation of a Taylor-rule equation are reported in the paper's Table 2. The latter implies that less weight was put on exchange rate considerations after 1997, as should be the case in the presence of reduced pass-through and inflation targets. The poor empirical performance of this equation calls for more investigation, however. In particular, evidence on the persistence of inflation in Canada should be presented to see if Taylor's hypothesis that low and less persistent inflation is responsible for lower pass-through is validated by the data.

Increased international competition and changed trade patterns

The argument related to international competition says that to keep their market shares when there are substitutes available, firms will do some pricing to market. In an international setting, this means local currency pricing. The result is, once again, reduced pass-through of exchange rate changes to the local consumer price index. The volatility in the latter variable becomes somehow disconnected from the volatility in the former. There is no direct evidence in the paper that this international-competition phenomenon has increased in the past ten years or so, but it may be worth investigating further. I make several suggestions related to this issue in the next section.

The authors argue that changing trade patterns, increasing the amount of intraindustry trading, may have led to a smaller influence of exchange rate movements on prices. The reported Grubel-Lloyd index of intraindustry trade has increased during the 1995–97 period, but it does not extend beyond 1997. It is quite probable that it has continued to rise since then, but more information is required to validate the hypothesis. The share of the auto industry in Canadian exports and imports would summarize a lot of the intraindustry trading taking place between the two countries. Recent increases in demand for commodities (energy and non-energy) by emerging economies (mostly China), may also have affected the exchange rate without affecting the local CPIs a lot, resulting in apparent reduced pass-through.

Suggestions

Can we conclude from the evidence presented in the paper that the adoption of inflation targets is responsible for reduced pass-through and increased exchange rate volatility? As mentioned by the authors, low pass-through, low and stable inflation, and high exchange rate volatility are compatible with several models (nominal wage or price rigidity, changing trade patterns, pricing to market, noise traders. . .). The empirical evidence reported in their paper is not conclusive so far. If evidence of lower persistence of inflation in Canada after the mid-1990s is found, this would support Taylor's hypothesis that low and less persistent inflation may be responsible for lower pass-through. A lower mean value for the inflation rate would also be conducive to reduced pass-through. A Bai-Perron (1998) test of structural break in the inflation process during the 1990s may provide additional useful information.

A look at more disaggregated data might shed more light on this issue as well. It would be possible to evaluate the speed at which exchange rate changes are incorporated into price changes (π) at local levels. This could be done by performing regressions of local inflation rates on lagged exchange rate changes, as is done in Devereux (2001) for national inflation rates. Some interesting patterns could be identified. For example, bigger cities, with presumably more competitive markets, might experience less pass-through than smaller ones. This could be interpreted as evidence in support of the increased-international-competition hypothesis. These regressions could also be performed with data on individual or different types of goods to see if intraindustry trading has an important role to play in reduced pass-through.

A related possibility would be to investigate for some asymmetry in pass-through behaviour. When the exchange rate is depreciating, is the pass-through coefficient the same as when it is appreciating? If local currency pricing is done to keep market shares, cost increases may be transmitted to a lesser extent compared to cost reductions. Since the Canadian dollar has been generally appreciating during the 2001–05 period and was depreciating for most of the 1990s, maybe some information can be obtained by making the Devereux-type regressions for the two subsamples separately. On the other hand, if reduced pass-through is a by-product of successful inflation targeting, the asymmetry would not be there.

Looking at data from other countries would also be an opportunity to determine whether the Canadian experience is different in some ways or if, to the contrary, it is very similar to what happened elsewhere. Is it the case that reduced inflation rates are generally accompanied by more volatile

exchange rates? The G-7 countries (plus, possibly, Australia) during the 1980s and 1990s would be a natural starting point for international comparisons.

Conclusion

This paper raises some important issues for the conduct of monetary policy. It is a common observation in several countries that pass-through has been reduced in recent years. Most of these countries have also experienced low and relatively stable inflation rates during the same period. Canada is a particularly interesting case to study, since it has an explicit inflation-targeting policy and a volatile exchange rate for most of the mid-1990s onward. More work still has to be done to determine the timing and the cause(s) of the observed increased exchange rate variability and reduced pass-through (how much is related to monetary policy and how much to other causes), but this is an important topic to pursue further. This type of analysis can help answer the question of how much attention the Bank of Canada should pay to exchange rate movements when deciding on monetary policy. Further research should also consider which inflation rate (consumer price index, producer price index, non-traded goods) the central bank should target. To what extent does the choice of a price index influence the costs and benefits of inflation targeting? And how can we measure these costs more accurately? These questions could define an agenda for future research.

References

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