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Backgrounder

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Don't Mess with Mr. In-Between:

Why the Bank of Canada Should Stick to Fixed Announcement Dates

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In November 2000, the Bank of Canada adopted a fixed schedule for announcing changes to its interest rates. There is evidence that this move has reduced volatility in money markets and enhanced the focus of investors and traders on Canadian monetary policy. Short of extraordinary circumstances, such as those brought about by the September 11, 2001, terrorist attack on the United States, the Bank should stick to its announcement schedule and avoid changing its interest rates on unscheduled days.

In November 2000, the Bank of Canada made an important change to Canadian monetary policy. It adopted a fixed schedule for announcing changes to its interest rates, joining the central banks of the United States, Japan, the United Kingdom, Sweden, Australia, and New Zealand, as well as the European Central Bank, all of which follow such a schedule.[1]

Before November 2000, the Bank's schedule for possible rate changes was 9 a.m. on any business day. Sometimes rates changed the day after the Bank's US counterpart, the Federal Reserve, changed its rates, leading Canadian money markets to be overly sensitive to macroeconomic developments in the United States relative to those in Canada.[2] The adoption of a fixed announcement schedule was supposed to reduce uncertainty and volatility in money markets by allowing participants to plan ahead and not worry, on a daily basis, whether the Bank would change its rate. It was also meant

I thank, among others, David Laidler, Finn Poschmann, Bill Robson, Pierre Siklos, and Andrew Spence, and take responsibility for any flaws.

1 Such a move was also encouraged in two C.D. Howe Institute publications, Robson (2000) and Laidler (2000).

2 See Gravelle and Moessner (2001) for evidence of this behavior.

to enhance the focus of Canadian credit market participants on the domestic economy by demonstrating that the Bank was not simply following the Fed. Other reasons outlined by the Bank included better communication between the Bank and the public and greater focus on medium-term policy.[3]

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There is some evidence that at least some these goals have been achieved. Canadian money markets appear to have become less volatile and less sensitive to specific economic events in the United States than they would have been without the move to a fixed schedule. This suggests that, barring financial emergencies, such as those brought about by the September 11 terrorist attacks, the Bank should not, in the words of the old song, "mess with Mr. In-Between," but should continue building its credibility by sticking to a fixed announcement schedule.

Interest Rates Set by the Bank of Canada

The key interest rate for monetary policy in Canada is the rate for overnight loans between the Bank of Canada and major financial institutions — mainly the chartered banks. The Bank sets an "operating band" for this rate that is 50 basis points (0.5 percent) wide. The Bank Rate — the interest rate the Bank charges financial institutions for overnight loans — is set at the top of the band. The target overnight rate — the average rate the Bank wants to see in the marketplace for overnight loans between financial institutions — is the midpoint of the band.

The target overnight rate is the Bank's main tool for conducting monetary policy because of its influence on other interest rates and ultimately on the level of economic activity. A change in the target brings about changes in overnight rates for loans between financial institutions and then typically to a change in the prime rate — the rate banks charge their prime business clients — and in other rates. That is why knowing the day on which the Bank of Canada might change its target rate is important not only to currency and bond traders but also to many others who plan to make or take new loans.[4]

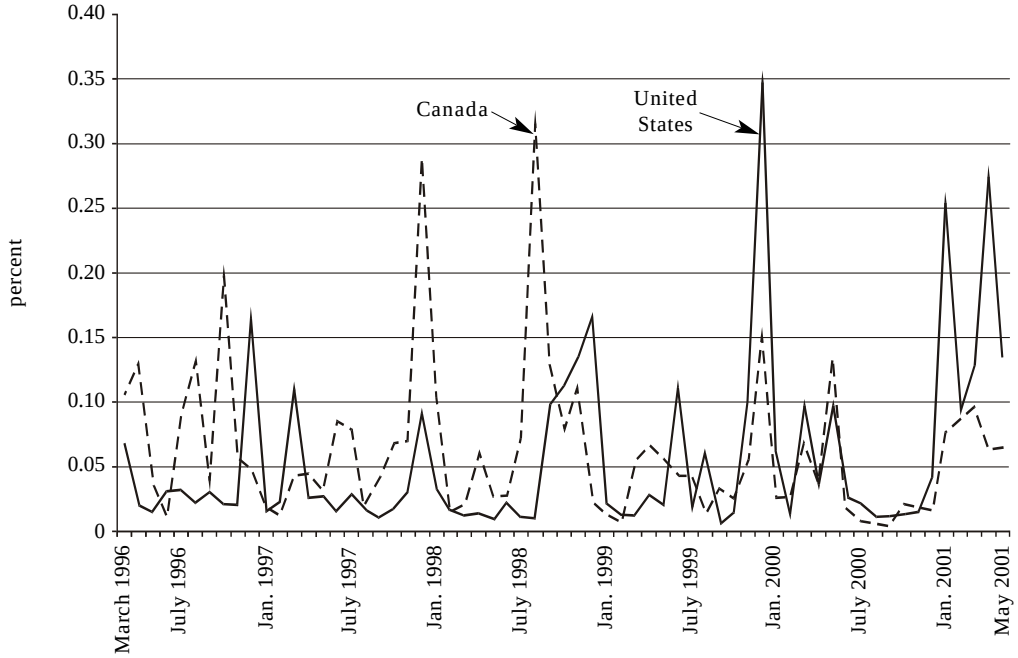
Examining the Evidence

Between March 1996 and October 2000, the Bank of Canada changed its rate 25 times. Over the same period, the US Federal Reserve changed its rate just 10 times. Seven of the Fed's changes were followed the next day by the Bank, giving some participants the impression that the Bank was simply following its US counterpart. In contrast, in the ten months from November 2000 to August 2001, the Bank resisted the temptation to follow two surprise rate cuts by the Fed and announced rate changes only on scheduled days. Only the extraordinary circumstances of the September 11, 2001, terrorist attacks

3 Whenever there was uncertainty about the Bank's actions, currency and bond traders used to avoid trading until 9 a.m. This tended to result in a thinner market and less representative prices.

4 It is worthwhile mentioning here, however, that long-term interest rates might not be positively related to those rates set by the Bank. For example, in response to a rate cut by the Bank, market participants may formulate expectations for higher inflation. Such expectations would, in turn, put upward pressure on long-term interest rates as lenders seek compensation for the loss of purchasing power of the money that they are to receive in the future.

Figure 1: ***Volatility of 30-Day Corporate Paper Yields, Canada and the United States,1996–2001***



Source: Bank of Canada.

on the United States caused the Bank to follow the Fed's lead with an interest rate cut of one-half of a percentage point on an unscheduled day.

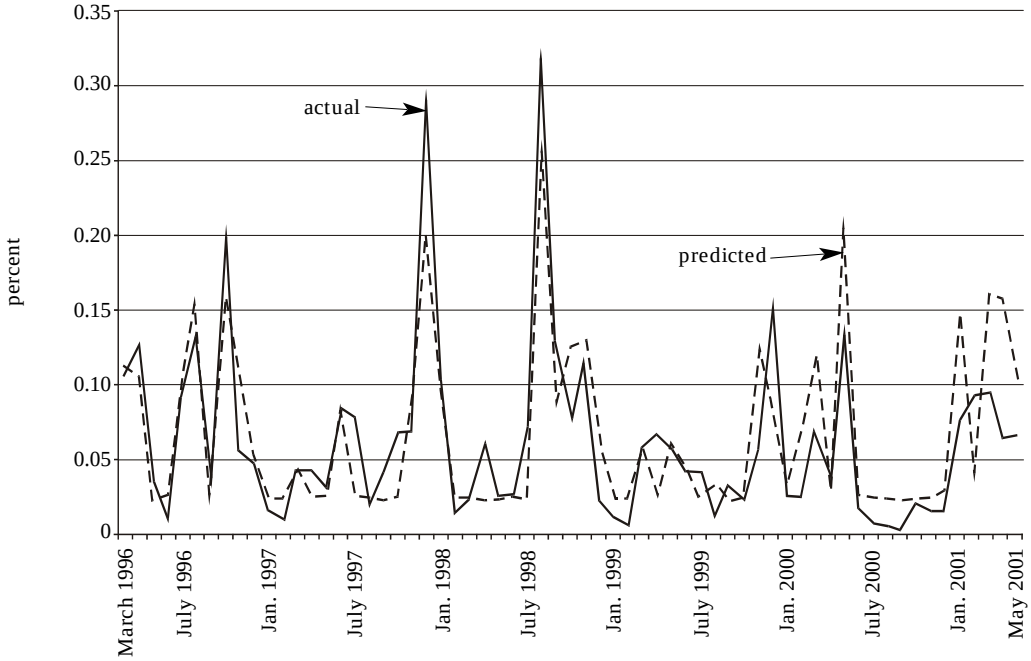
To get an idea of how successful the move to fixed announcement dates has been and how it might have influenced money markets, one can look at short-term volatility in those markets. While there are several ways to measure and define money market volatility, in this *Backgrounder* it is defined as the monthly standard deviations calculated from daily observations on 30-day prime commercial paper yields.[5]

Canadian market participants are paying more attention to the Canadian domestic economy and domestic money markets have become less sensitive to some shocks originating in the United States.

Figure 1 shows that, between March 1996 and the move to a fixed announcement schedule in November 2000, money market volatility averaged 0.06 percent in Canada and 0.05 percent in the United States. In the ten months following the adoption of a fixed announcement schedule, volatility continued to average 0.06 percent in Canada even though it rose to 0.12 percent in the United States. As the figure indicates, the higher US average owes much to the two surprise rate cuts the Fed made in January and April 2001. Canadian money markets responded to the first surprise rate cut in the sense that volatility in Canada jumped in January 2001. There was, however, no such response to the second surprise US cut. One can speculate that the market learned in January that the Bank of Canada would stick to its new announcement schedule even when the Fed changes rates on an unscheduled day. If this is correct, Canadian market participants are paying more attention to the Canadian domestic economy and domestic money markets have become less sensitive to some shocks originating in the United States.

5 The standard deviation is a measure of how far observations are from their average: the higher the standard deviation, the greater the volatility. Interested readers can find in the Appendix the same analysis applied to the volatility of 30-day treasury bills.

Figure 2: ***Volatility of 30-Day Corporate Paper Yields, Actual and Predicted, Canada, 1996–2001***



Sources: Bank of Canada; author's calculations.

A More Formal Test

This conclusion can be tested more formally by estimating what Canadian volatility would have been without a fixed announcement schedule and comparing the estimates to actual volatility.

One can expect the volatility of Canadian 30-day corporate paper yields to be influenced by the volatility of their US equivalents, since the economies of the two countries are tightly linked and many issuers raise money in both countries. The frequency with and extent to which the Bank of Canada changes its rates should also have an impact on volatility in Canada, through the impact of the target overnight rate and the closely linked Bank Rate on a spectrum of other interest rates in the economy. When those interest rates change, yields on corporate paper should be affected because investors can, and do, switch among interest-bearing assets.

I constructed an econometric model to predict the standard deviation of Canadian 30-day commercial paper yields, using the standard deviation of US 30-day commercial paper yields and that of the target overnight rate.[6] The Appendix presents detailed statistical results of this model as well as results using other indicators of money market volatility. Here, it suffices to say that using other indicators of money market volatility, such as the standard deviation of the yield on 30-day treasury bills, and changing the sample period does not alter my conclusion.

Figure 2 shows actual and predicted values for Canadian volatility since March 1996. The model uses data up to and including October 2000 and, using observed

6 The US yields were transformed to account for Canadian-US differences in dating conventions when calculating yields.

values for the standard deviation of the target overnight rate and US commercial paper yields, predicts what the volatility of Canadian commercial paper yields would have been had the Bank of Canada not adopted a fixed announcement schedule.[7]

Starting in November 2000, and with the exception of February 2001, each forecast standard deviation is higher than the one actually observed.[8] This strongly suggests that the move to a fixed announcement schedule has reduced volatility in Canadian money markets.

It should be noted that this methodology does not distinguish between shocks originating in the United States and those originating in Canada or elsewhere, which could bias the results in the sense of showing that Canadian volatility was lower than expected in recent months simply because the shocks originated south of the border. But even if one responds to this critique by distinguishing between the months when commercial paper volatility was higher in the United States and when it was higher in Canada, the conclusion remains the same (see the Appendix). Actual commercial paper volatility in Canada appears to have been lower than it would have been had the Bank not adopted a fixed announcement schedule.[9]

Conclusion

The Bank of Canada's move to a schedule of fixed dates for announcing rate changes has reduced volatility in Canadian money markets.

The preliminary evidence presented here suggests that the Bank of Canada's move to a schedule of fixed dates for announcing rate changes has reduced volatility in Canadian money markets. Market reaction to the surprise rate cuts by the US Federal Reserve suggests that Canadian money markets are paying less attention to events in the United States. These positive developments indicate that the Bank should continue to follow a fixed schedule. Short of financial emergencies, the Bank should avoid changing the target overnight rate on unscheduled days, since doing so would undermine the credibility of a fixed schedule regime that appears to be fulfilling the Bank's expectations.

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7 Changes in credit quality should play no role since the rated quality of the issuers of commercial paper did not change throughout the sample period. Only prime-rated commercial paper was included in the sample.

8 The volatility of Canadian commercial paper may have been high in February 2001 because of an anticipated rate change on the fixed announcement date in early March.

9 Some reduction in the volatility of fundamental shocks arising in Canada, which are not captured by changes in the volatility of the target overnight rate or in that of US 30-day coomercial paper and therefore are not included in this analysis, might have biased the results. Since evidence of such shocks is very difficult to detect, this possibility is not easy to explore empirically.

Appendix

The econometric model used to generate volatility estimates for Canadian 30-day commercial paper yields is presented as Model 1 in Table 1. Each observation is expressed as a percentage (1 percent is entered as 1, for example) and the ordinary least squares method is used. The R-squared value of 0.75 indicates that this simple equation explains 75 percent of movements in the monthly standard deviation of Canadian commercial paper. The coefficients on both the explanatory variables are statistically significant at the 1 percent confidence level. The Durbin-Watson statistic clearly indicates that there is no autocorrelation in the residuals, while the test of parameter constancy implies that a structural break took place during the forecasting period.

Since the structural break took place around the time that the Bank of Canada moved to a fixed announcement schedule, it is plausible that the move may have caused the structural break. Also, the columns labeled "Observed–Predicted" show that, in nine of the ten months, the predicted value was larger than the observed value, suggesting that without the move to a fixed schedule volatility would have been higher.

Models 3 and 4 look at another indicator of credit market volatility: the monthly standard deviation of 30-day treasury bill yields. These models do not show a structural break but still show predicted values greater than observed. It is worthwhile noting, however, that the coefficients on US 30-day T-bill volatility are not statistically significant and that the R-squared values are much lower than those seen for the commercial paper models. This could mean that the Canadian and US markets for commercial paper are more closely linked than those for T-bills. There are a couple of reasons that could explain a difference in the strength of links in the two markets. First, many firms issue commercial paper in both countries. Second, US T-bills are used as international reserves by many foreign central banks and therefore move less in response to changes in other interest rates.

Model 5 uses an intercept dummy variable that takes a value of 1 whenever the standard deviation of Canadian 30-day commercial paper is higher than that of US 30-day commercial paper. The first coefficient on the standard deviation of US 30-day commercial paper applies whenever volatility is higher in Canada than in the United States, and the second applies whenever volatility is higher in the United States than in Canada. The "Observed–Predicted" column again shows that, in all months except February 2001, volatility was lower than predicted. The tests of parameter constancy indicate a structural break during the forecasting period.

Table 1: ***Models Predicting Credit Market Volatility***

	Model 1	Model 2	Model 3	Model 4	Model 5
Sample period	March 1996 to Oct. 2000	Jan. 1990 to Oct. 2000	March 1996 to Oct. 2000	March 1990 to Oct. 2000	March 1996 to Oct. 2000
Dependent variable	standard deviation of 30-day commercial paper	standard deviation of 30-day commercial paper	standard deviation of 30-day T-bill	standard deviation of 30-day T-bill	standard deviation of 30-day commercial paper
Constant	0.022	0.013	0.065	0.062	–0.0138
	(3.682[b])	*(1.030)*	*(4.221[b])*	*(3.533[b])*	*(–1.161)*
Standard deviation of target overnight rate	0.640	0.839	0.552	0.696	0.58596
	(12.184[b])	*(14.891[b])*	*(5.993[b])*	*(12.012[b])*	*(10.747[b])*
Standard deviation of US equivalent	0.198	0.252	0.058	–0.018	—
	(2.68[b])	*(2.019[a])*	*(0.713)*	*(–0.202)*	—
Intercept dummy					0.044912
					(3.186[b])
Standard deviation of 30-day US commercial paper when CANSD > USSD					0.32369
					(1.412)
Standard deviation of 30-day US commercial paper when CANSD < USSD					0.67341
					(3.743[b])
R-squared	0.753	0.645	0.41	0.532	0.795
Durbin-Watson	1.940	2.160	2.07	2.17	2.200
Standard error	0.030	0.090	0.055	0.095	0.029
	Observed–Predicted	Observed–Predicted	Observed–Predicted	Observed–Predicted	Observed–Predicted
November 2000	–0.094	–0.0016	–0.0344	–0.013	–0.020
December 2000	–0.0141	–0.0078	–0.0554	–0.026	–0.027
January 2001	–0.0710	–0.0995	–0.0908	–0.086	–0.135
February 2001	0.0527	0.0563	–0.0279	–0.019	0.043
March 2001	–0.0645	–0.0977	–0.0573	–0.066	–0.071
April 2001	–0.0936	–0.1251	–0.0557	–0.054	–0.142
May 2001	–0.0380	–0.0537	–0.0403	–0.043	–0.048
June 2001	–0.0295	–0.0271	–0.0379	–0.030	–0.003
July 2001	–0.0270	–0.0453	–0.0542	–0.066	–0.033
August 2001	–0.0214	–0.0356	–0.0379	–0.044	–0.034
Forecast chi-squared [p-value]	24.45 [0.006][b]	5.318 [0.869]	8.835 [0.548]	2.7554 [0.986]	58.859 [0.000][b]
Chow F-test [p-value]	1.68 [0.109]	0.465 [0.909]	0.743 [0.681]	0.259 [0.985]	2.32 [0.044][a]

[a] Significant at the 5 percent confidence level.

[b] Significant at the 1 percent confidence level.

Note: t-values for the null hypothesis that the coefficient is equal to zero are in parentheses and italics under the relevant coefficient.

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