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The Impacts of Monetary Policy Statements

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Abstract

In this note, we find that market participants react to an unexpected change in the tone of Canadian monetary policy statements. When the market perceives that the Bank of Canada plans to tighten (or alternatively, loosen) the monetary policy earlier than previously expected, the Canadian dollar appreciates (or depreciates) and long-term Government of Canada bond yields increase (or decrease). The tone of a statement is particularly relevant to the market when the policy rate has been unchanged for some time.

Bank topics: Asset pricing; Exchange rates; Interest rates; Transmission of monetary policy
JEL codes: E43, E52, F31, G12

Résumé

Dans la présente note, nous établissons que les participants au marché réagissent à un changement imprévu de ton dans les déclarations de la Banque du Canada sur la politique monétaire. Quand le marché considère que l'institution a l'intention de resserrer (ou bien d'assouplir) la politique monétaire plus tôt qu'il ne l'avait d'abord escompté, le dollar canadien s'apprécie (ou se déprécie) et le rendement à long terme des obligations de l'État canadien augmente (ou diminue). Le ton des déclarations revêt une importance particulièrement grande pour le marché dès lors que le taux directeur est resté inchangé pendant un certain temps.

Sujets : Évaluation des prix ; Taux de change ; Taux d'intérêt ; Transmission de la politique monétaire
Codes JEL : E43, E52, F31, G12

Introduction

The tone of Canadian monetary policy statements has an impact on the Canadian dollar and long-term Government of Canada bonds. In our sample period from 2006 to 2016, we measure their response in the 60 minutes following these announcements. We find that an unanticipated change in the tone of statements can affect the dollar by as much as 0.5 of a cent. This is a sizable impact considering that an unexpected rate hike (or cut) of 25 basis points (bps) can initially affect the dollar by an average of 1.25 cents. The tone can also initially move the 10-year Government of Canada bond by 2 bps, which again is considerable given that an unexpected rate hike (or cut) can move it by 7 bps.

The Level and Slope Components of Policy Statements

Tracking the market response of asset prices is essential to understanding the transmission of monetary policy to the Canadian economy. In this note, we estimate the initial impact of a change in the tone of monetary policy statements by the Bank of Canada that markets had not anticipated. Based on the statements, investors assess changes in the Bank of Canada's outlook for the Canadian economy. The prices of financial assets, such as money market securities, then adjust to reflect any change in the expected path of monetary policy.

We measure the response of money market rates to the level and slope components of policy statements in a narrow time window. The level component corresponds to the change in the short-term Canadian bankers' acceptance (BAX) rate immediately after the policy announcement, which reflects the unexpected change in the policy rate.[1] The slope component, which is the primary focus of this note, corresponds to the additional change of longer-term BAX rates.[2] This additional change means that the yield curve for BAX rates steepens (or flattens) when the market perceives that the Bank of Canada plans to tighten (or alternatively, loosen) monetary policy earlier than previously expected.[3] In other words, the slope component is the change in the slope of the yield curve for BAX rates.

The Slope Component as a Proxy for the Tone

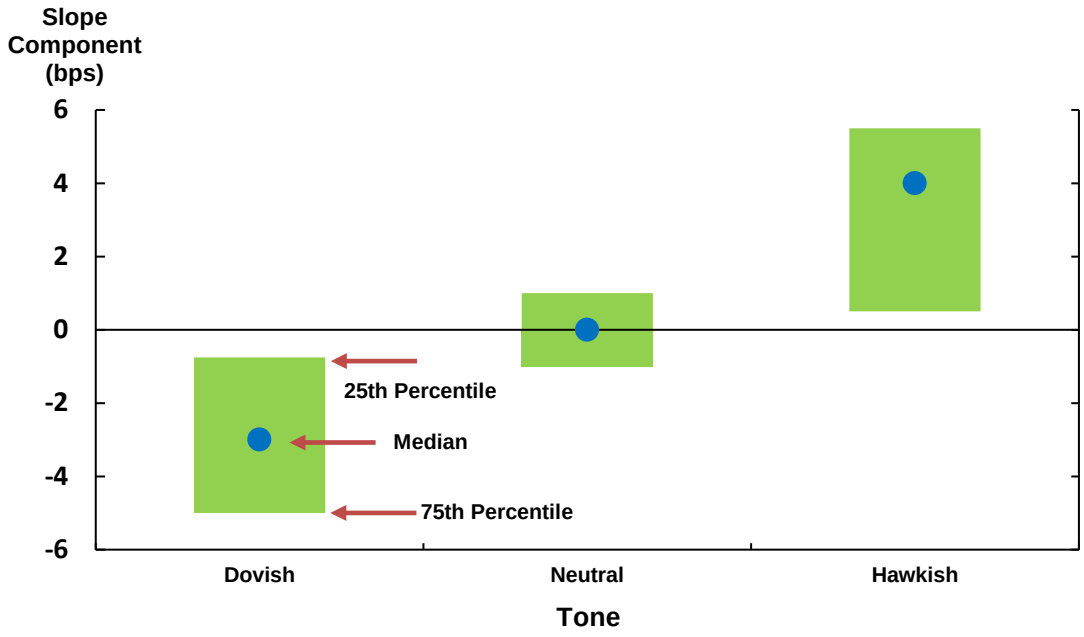
The slope component should reflect the unexpected change in the tone of Bank of Canada policy statements. In fact, we find strong empirical evidence backing this assumption. Based on analytical notes that dealer economists circulate to their clients following policy announcements, we categorize the unexpected tone of each statement since 2006 into three groups: more dovish than expected, more hawkish than expected and as expected (neutral). For example, commentaries such as "we now believe that the timing of the first rate hike has been delayed" are marked as dovish; "several dealers mentioned that risks are now tilted toward an earlier hike than is currently expected by the market" as hawkish; and

[1] BAX contracts are futures contracts based on the Canadian bankers' acceptance rates. They are traded on the Montréal Exchange and are often recognized as the benchmark for Canadian short-term interest rates.
[2] We take the difference between changes in the long-term (13 to 15 months) and short-term (1 to 3 months) BAX rates.
[3] See Gürkaynak, Sack and Swanson (2005); Ferrari, Kearns and Schrimpf (2016); and Neuhierl and Weber (2016).

“there was no overriding theme today, suggesting that the Bank of Canada is perfectly content waiting on the sidelines for another year” as neutral.

As expected, the slope component and our measure of the tone are positively related. **Chart 1** shows a simple distribution of slope component values for each tone grouping. A more hawkish- (or dovish-) than-expected tone tends to have a positive (or negative) slope component. Therefore, we can use the slope component as a proxy for the tone of statements to measure its impact.

Chart 1: **The slope component and the tone are positively related**



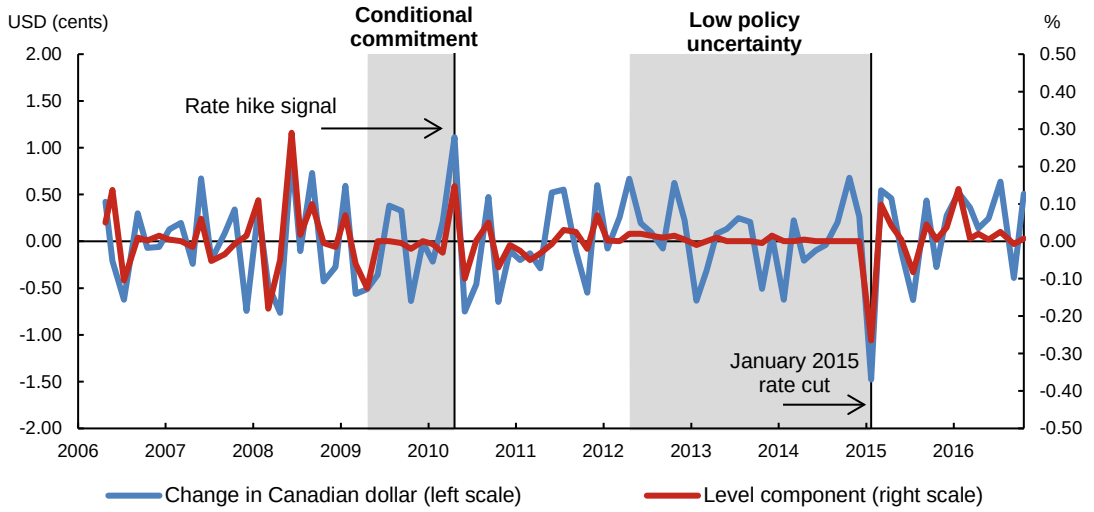
Sources: Montréal Exchange and Bank of Canada calculations

Last observation: October 19, 2016

Impact on the Canadian Dollar

The level and slope components should have an impact on the Canadian dollar following the announcements. However, each component alone cannot adequately explain the movement of the dollar during certain periods. **Chart 2a** shows that overall the level component is positively related to changes in the dollar. This is expected, since a higher- (or lower-) than-expected level of interest rates can affect the attractiveness of Canadian-dollar-denominated bonds and thereby increase (or decrease) foreign demand for the dollar. However, the level component is flat during the gray-shaded periods, which represent periods when the policy rate was unchanged for a long time.

Chart 2a: **Change in Canadian dollar and level component**

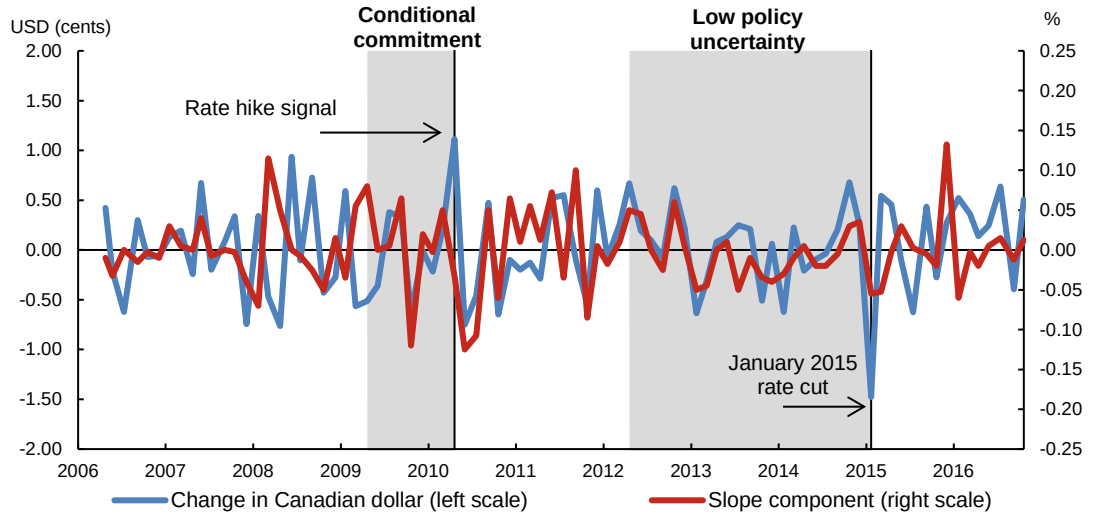


Note: Each data point represents a discrete 30-minute interval after each fixed announcement date.
Sources: Montréal Exchange, Thomson Reuters, and Bank of Canada calculations Last observation: October 19, 2016

On the other hand, the statements are an important element of the monetary policy decision, and the tone of it is closely watched by markets during those periods. **Chart 2b** illustrates that the tone—as measured by the slope component—is not flat but seems even more correlated with the Canadian dollar in the shaded periods. For instance, the slope component continues to vary during the conditional commitment period since, during that time, market participants used the tone to gauge the effective length of the commitment horizon.[4]

[4] Bank of Canada (2009): *"Conditional on the outlook for inflation, the target overnight rate can be expected to remain at its current level until the end of the second quarter of 2010 in order to achieve the inflation target."*

Chart 2b: Change in Canadian dollar and slope component



Note: Each data point represents a discrete 30-minute interval after each fixed announcement date.
Sources: Montréal Exchange, Thomson Reuters, and Bank of Canada calculations Last observation: October 19, 2016

We estimate the impact of the two components on the Canadian dollar using a simple linear regression.[5] The results suggest that an unexpected rate hike (or cut) of 25-bps translates to a 1.25-cent increase (or decrease) in the value of the dollar, on average. As well, the results suggest that an unexpected change in the tone of a statement can affect the dollar by as much as 0.5 of a cent.[6] In fact, the level and slope components are the two most important drivers of the dollar following the policy announcements. Together, they explain 60 per cent of the dollar variation in the 60 minutes following the announcements (Appendix, Table 1).

Impact on Long-Term Bond Rates

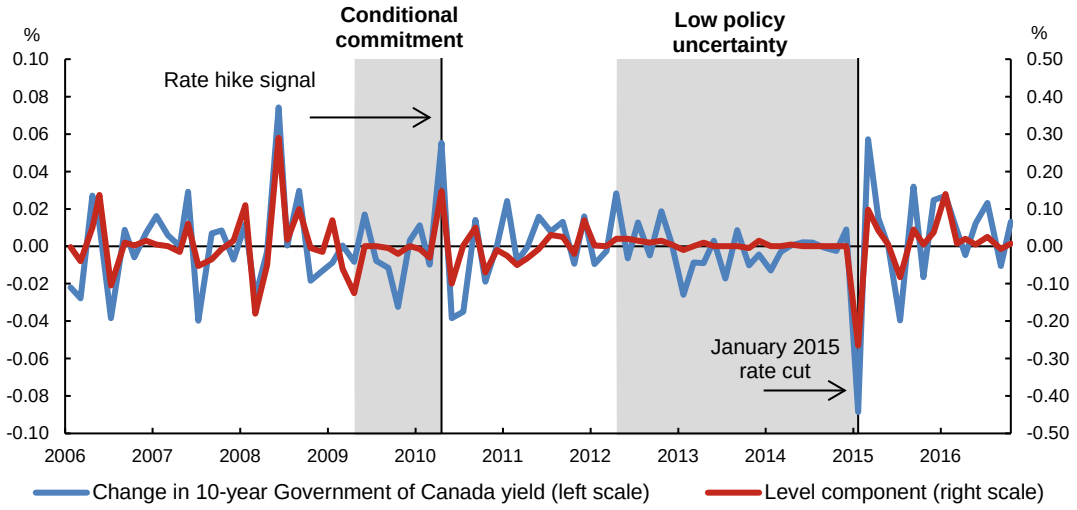
The level and slope components also have an impact on the implied 10-year Government of Canada bond yield following the announcements.[7] This is expected since the path of monetary policy is an important component of long-term rates. **Chart 3a** shows that the level component is strongly related to changes in the 10-year yield, except during the shaded periods when it is virtually flat. This is similar to what we observe in **Chart 2a** for the Canadian dollar.

[5] The regression is given by $\Delta CAD_t = \alpha + \beta_L Level_t + \beta_S Slope_t + \varepsilon_t$, which we estimate for every fixed announcement date (t) from April 2006 to October 2016. The dependent variable ΔCAD_t is expressed as US dollars per one Canadian dollar.

[6] An unanticipated change in the tone has moved the BAX slope by as much as 13 bps in our sample period.

[7] We infer changes in the yield from the futures contracts (CGB) on the Montréal Exchange of the benchmark 10-year Government of Canada Bond. Our calculation assumes that the duration of the cheapest-to-deliver bond is 9 years.

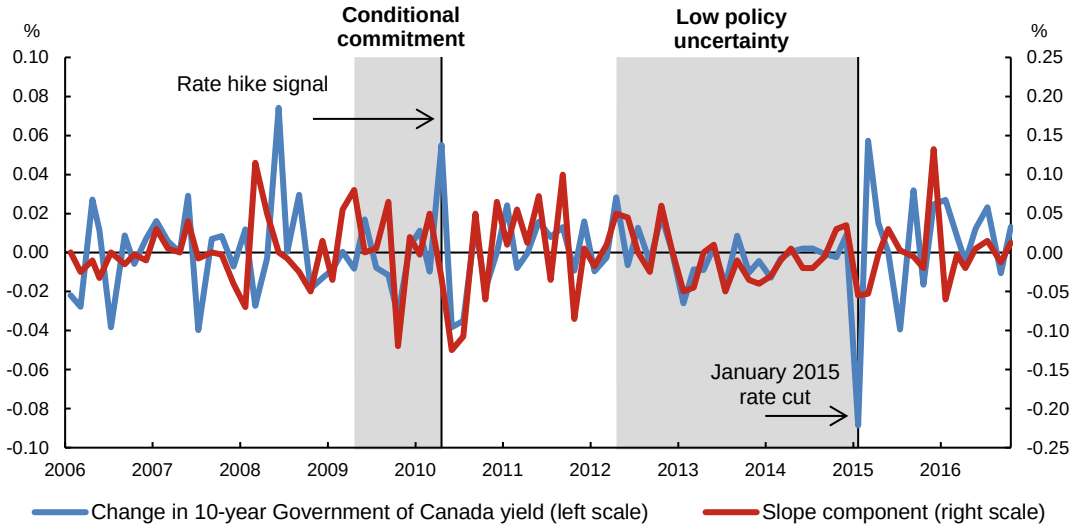
Chart 3a: **Change in implied 10-year Government of Canada yield and level component**



Note: Each data point represents a discrete 30-minute interval after each fixed announcement date.
Sources: Montréal Exchange and Bank of Canada calculations
Last observation: October 19, 2016

Chart 3b provides further evidence that the tone of statements is closely watched by markets during the shaded periods. The slope component seems more correlated with the Government of Canada bond yield in these periods, similar to what we observe in Chart 2b for the dollar.

Chart 3b: **Change in implied 10-year Government of Canada yield and slope component**



Note: Each data point represents a discrete 30-minute interval after each fixed announcement date.
Sources: Montréal Exchange and Bank of Canada calculations
Last observation: October 19, 2016

An unexpected change in the tone of an announcement also has a sizable impact on the implied 10-year Government of Canada bond yield. We find this result by repeating the regression from before but using the changes in the implied 10-year yield on the left-hand side. Our estimates suggest that an unexpected change in the tone can initially affect the implied 10-year yield by as much as 2 bps. This is substantial considering that an unexpected rate hike (or cut) is estimated to initially affect the yield by 7 bps. The

level and slope components together explain up to 74 per cent of the yield variation in the 60 minutes following the announcements (Appendix, Table 2).

Conclusion

We find a strong relationship between the unexpected tone of Canadian monetary policy statements and the movement of both the Canadian dollar and the 10-year Government of Canada bond yield. The tone is associated with sizable movements in the prices of Canadian financial assets, which were particularly pronounced when the policy rate had been unchanged for some time. In the future, we can extend our analysis to assess the impact of speeches as well as the effect on other asset classes such as equities. More importantly, future research should investigate the persistence beyond the initial 60-minute impact and the linkages to the real economy.

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Appendix

Table 1: Regression results of changes in the Canadian dollar on the two components

VARIABLES	(1) 15 minutes	(2) 30 minutes	(3) 45 minutes	(4) 60 minutes
Level[8]	0.056***	0.054***	0.050***	0.051***
	(0.005)	(0.005)	(0.005)	(0.005)
Slope	0.038***	0.036***	0.038***	0.037***
	(0.007)	(0.007)	(0.007)	(0.007)
Constant	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Adjusted R^2	0.60	0.60	0.60	0.60

Notes: Changes in the Canadian Dollar are expressed as US dollars per one Canadian dollar. Level and slope components are expressed in percentages. Standard errors are in parentheses; *** p<0.01.
Sources: Montréal Exchange, Thomson Reuters and Bank of Canada calculations

Table 2: Regression results of changes in the implied 10-year bond yield on the two components

VARIABLES	(1) 15 minutes	(2) 30 minutes	(3) 45 minutes	(4) 60 minutes
Level	0.259***	0.283***	0.283***	0.281***
	(0.021)	(0.019)	(0.022)	(0.023)
Slope	0.108***	0.169***	0.210***	0.204***
	(0.029)	(0.028)	(0.030)	(0.030)
Constant	0.000	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)
Adjusted R^2	0.66	0.74	0.70	0.68

Notes: Changes in the implied 10-year yield. Level and slope components are expressed in percentages. Standard errors are in parentheses; *** p<0.01.
Sources: Montréal Exchange and Bank of Canada calculations

[8] Results are similar if we instead use the one-day change in one-month overnight index swap rates or the unexpected component implied from the median expectation recorded in a Bloomberg survey.