

Information and Analysis for Monetary Policy: Coming to a Decision

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- *In late 2000, the Bank of Canada adopted a system of eight pre-announced dates per year when it can adjust its policy rate—the target for the overnight rate of interest.*
- *This article describes the information and analysis presented to the Bank’s Governing Council in the two or three weeks leading up to a fixed announcement date.*
- *This includes an economic projection, or forecast, based on a model of the Canadian economy; an analysis of the information from monetary and credit aggregates, interest rate credit spreads, and changes in credit access; and information on the interest rate expectations of participants in financial markets.*
- *The article also outlines the steps involved in reaching a decision on the setting of the policy rate.*

Since February 1991, the objective of monetary policy has been simple and straightforward—to achieve a pre-announced target rate of inflation. The target is expressed in terms of the 12-month rate of change in the total consumer price index, and since 1995, the target rate has been 2 per cent, the midpoint of a control range of 1 to 3 per cent.

While the objective is simple, achieving it is not straightforward. Inflation control is complicated by several factors: it is very indirect, it is not totally precise, and it takes a long time. Indeed, as discussed in detail in Jenkins and Longworth (this issue), uncertainties arise from many sources. This pervasive uncertainty makes it necessary to consider a wide range of information in coming to monetary policy decisions.

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The purpose of this article is to outline the information and analysis from various sources and perspectives that are brought to bear on monetary policy decisions in Canada. Previous articles have discussed

the informational requirements and the role of economic projections in the formulation of monetary policy in Canada.¹ As these articles make clear, the information and analysis used in monetary policy decisions—particularly its organization and discussion—have evolved over time.

In the last couple of years, the process has been particularly affected by the move to fixed announcement dates for monetary policy decisions. Starting in late 2000, the Bank of Canada adopted a system of eight pre-announced dates per year on which it can adjust its monetary policy instrument—the target overnight rate of interest. The Bank has indicated that it would change the target overnight rate outside this schedule of fixed dates only in exceptional circumstances, as was the case, for example, following the 11 September 2001 attacks in the United States. The schedule of pre-announced dates is aligned with the flow of economic information in Canada so that monetary policy decisions can be based on timely data and analysis. Four of the dates closely follow the completion of the staff economic projection, which begins with the release of the quarterly national income and expenditure accounts. The other four dates are positioned about halfway between these dates. The choice of dates is also influenced by the timing of the release of other important economic information, such as the publication of the consumer price index. As a result of these considerations, there is a separation of typically one to three weeks, between the announcements in Canada and those made by the Federal Reserve in the United States.

This article provides a snapshot of the current process of monetary policy formulation with fixed announcement dates. It describes the information and analysis that the monetary policy decision-makers—the Governing Council of the Bank of Canada²—receive in the two or three weeks leading up to a fixed announcement date for a monetary policy decision. It also describes how the Governing Council reaches a decision on the target overnight interest rate.

There are four main steps in the process. The first input that the Governing Council receives is the *staff economic projection*. Next comes the *major briefing*, which includes information gathered by the Bank's

five regional offices, monetary and credit information, and the perspective from financial markets. This is followed by the *final briefing and recommendations* made by the advisers and chiefs to the Governing Council. Finally, the members of the Governing Council deliberate among themselves, reach a decision, and communicate that decision.

The Staff Economic Projection

The staff economic projection is the first piece of analysis presented to the Council. It is organized around the quarterly national income and expenditure accounts, which are the most comprehensive measure of activity in the economy. The projection, therefore, provides the reference point from which the implications of other sources of information are assessed. Box 1 summarizes the cycle of information and outlines the precise sequence of presentations and meetings that lead up to a decision on the setting of the target overnight interest rate.

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The projection combines a structural macro model of the Canadian economy with the latest intelligence on the near-term prospects for economic activity, as well as the staff's best judgment on various issues.³ The model is used to trace the link from the policy instrument (the target overnight interest rate) through to inflation. This linkage involves three key steps (see Chart 1). The first is from the overnight rate to other financial variables; namely, longer-term interest rates and the exchange rate. The second is from these financial variables to domestic and foreign demand for Canadian goods and services—aggregate demand—and then on to the level of aggregate demand relative to the productive capacity of the Canadian economy—also known as the output gap. The third and final step is from the output gap and expected inflation to actual

1. For example, Duguay and Poloz (1994), Longworth and Freedman (1995, 2000), Longworth and O'Reilly (2002), and Knight, Fay, and O'Reilly (2002).

2. The Governing Council consists of the Governor, the Senior Deputy Governor, and four Deputy Governors.

3. The model is known as the Quarterly Projection Model, or QPM. See Coletti and Murchison (this issue) and Poloz, Rose, and Tetlow (1994) for a description of the model and its use in economic projections.

Box 1

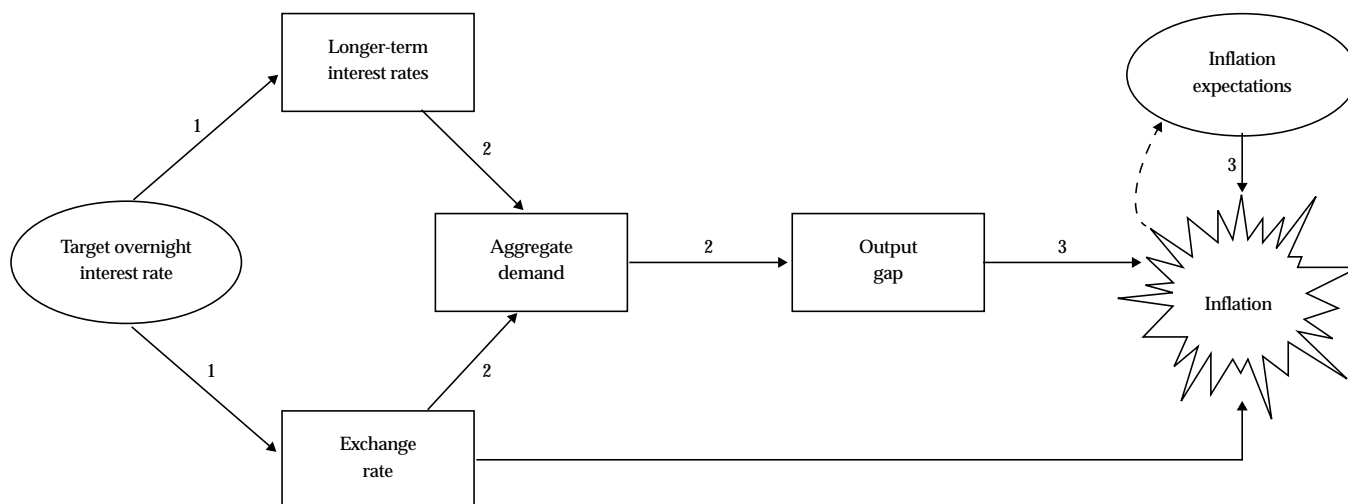
The Cycle of Monetary Policy Information and Meetings

Bank staff produce four full economic projections per year, following the release of the quarterly national income and expenditure accounts. Thus, for four of the eight fixed announcement dates, there is a full staff economic projection. For the other four dates, either an update to the projection is conducted or a risk scenario around the previous projection is presented. Similarly, the industry and business survey performed out of the regional offices is conducted four times a year. Hence, timely survey results are available for four of the eight fixed announcement dates. For the other four dates, there is no formal survey, but on a selective basis anecdotal information is sought from key industry contacts. The other information described in this article is provided for all eight fixed announcement dates.

The precise schedule of meetings for the 16 July fixed action date is described below as an example of a full cycle.

- 28 June—Staff economic projection presented to Governing Council. Later the same day, Council meets to discuss the projection.
- 10 July—Governing Council receives the major briefing:
 - i) risk analysis and implications of alternatives
 - ii) regional survey and forecast
 - iii) information from money and credit
 - iv) financial market expectations.
- 10 July to 16 July inclusive—Bank refrains from making public comments relating to monetary policy.
- 12 July—Final briefing and recommendations made by members of the Monetary Policy Review Committee. Later that day, Governing Council meets on its own to begin deliberations.
- 15 July—Governing Council reaches a consensus decision on the target overnight rate and prepares the press release.
- 16 July—Decision is confirmed. Target overnight interest rate is announced at 9 a.m. A short media lock-up allows journalists to prepare stories in advance for release when the target rate is announced.
- 24 July—Release of *Monetary Policy Report Update* accompanied by media lock-up and background briefing by Deputy Governors, as well as a press conference by the Governor and Senior Deputy Governor.

Chart 1
Economic Model



inflation. The exchange rate also has a direct effect on inflation through its impact on the prices of imported goods. The model highlights the very indirect nature of the central bank's influence on inflation and the reality that the lags in transmission are long. The effects of changes in the policy rate on aggregate demand build up over the following four to six quarters, and the impact on inflation takes slightly longer—six to eight quarters.

In addition to tracing the link from the policy rate to inflation, the model is also used to predict the consequences of various economic developments or “shocks” that can affect the Canadian economy. These include financial shocks, such as shifts in investor preferences between Canadian-dollar assets and those denominated in foreign currency; shocks to spending on Canadian goods, such as fluctuations in foreign demand; shocks to the productive capacity of the Canadian economy, such as changes in labour productivity; and direct shocks to inflation, such as fluctuations in energy prices. The model is used to understand the implications of these shocks for output growth and inflation and to determine the path for interest rates that will keep inflation on target.

The projection exercise begins by looking beyond Canada's borders. The Bank's International Department assesses developments and future prospects in

the overseas economies, drawing on the analyses and forecasts of the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), and the private sector consensus forecast.

The International Department also develops a more detailed projection for the United States. This is largely based on an in-house model of the U.S. economy that contains the same basic channels outlined for Canada. This model-based forecast is combined with staff judgment that takes into account IMF, OECD, and consensus forecasts, as well as information from private sector consultants.

The second step in developing the staff projection is a detailed analysis of the current state of the Canadian economy and its near-term prospects. Official data on quarterly output growth is published with a considerable lag.⁴ Fortunately, a wide range of partial information is published on a more timely basis. This information includes high-frequency indicators such as car sales, housing starts, employment, manufacturers' shipments, retail sales, and merchandise trade. The Bank's Research Department closely monitors this

4. The national accounts measure of quarterly output is published about two months after the end of the quarter. For example, quarterly output growth for the first quarter of 2002 was published on 31 May 2002.

type of information for Canada, and the International Department monitors similar information for the United States and other major economies.

While very helpful, high-frequency data must be handled with care. These data are extremely volatile, partly because of sampling errors and, more importantly, because of very temporary special factors such as labour disruptions, unusual weather, and special promotions such as sales or financing incentives. Thus, a key challenge is to figure out whether the latest movement in the data simply reflects short-term volatility or is indicative of the direction in which economic activity and prices are headed.

When trying to distinguish volatility from underlying trends, economists draw on historical relationships, as well as on anecdotal information and the near-term analyses of others. This includes the interpretation of economic developments by other central banks and treasuries, private sector analysts, academic economists, government departments, and industry contacts across the country.

Staff judgments about the current state of the economy and its prospects in the very near term, the interpretation of the shocks, and the influence of any special or unusual factors are combined with the economic model to produce the staff economic projection. This is the *staff's assessment* of the most likely path for the economy—the base-case projection—and includes a recommendation to the Governing Council on the appropriate path for the overnight interest rate to bring inflation back to the 2 per cent midpoint of the inflation-control range.

Following the presentation of the projection, the Council meets and begins to discuss its views about the most likely path for the economy and the main risks and uncertainties around the outlook.

The Major Briefing

About a week before the announcement, the Governing Council receives four additional important pieces of information⁵:

- i) An analysis of the risks around the staff projection and the implications of alternative paths for interest rates;

- ii) The perspective from the regional offices, including a national forecast constructed from individual regional forecasts;
- iii) An analysis of the information coming from money and credit; and
- iv) Financial market expectations about policy actions.

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Risks and alternatives

The staff projection is the staff's view about the most likely path for the economy. There is, of course, considerable uncertainty around this outlook. The economic model is used to assess the implications of the main risks to this outlook as chosen by the Governing Council, based partly on the staff's recommendation. Typical examples of risks include different assumptions about the current amount of slack in the economy or the growth rate of economic capacity, different assessments of the prospects for the U.S. economy, and alternative views on the future path for the price of oil or other important commodities. These "risk analyses" provide an assessment of the sensitivity of the baseline forecast to various sources of uncertainty and provide the Governing Council with a range of forecasts and associated policy recommendations.

In addition to risk analyses, the staff also consider "alternative policy scenarios." These involve replacing the standard policy reaction function for setting the overnight interest rate, which is part of the economic model, with an alternative policy reaction function; for example, a scenario in which interest rates are held constant for a period of time. This gives an indication

5. Starting a week before the announcement, the Bank refrains from making public comments on issues related to monetary policy. This is a sensitive period, and comments could be misinterpreted.

of the consequences of delaying the interest rate response proposed by the standard reaction function. Staff might also consider an interest rate reaction function that performs well in a variety of models, even if it is not the best reaction function in the staff's main model.⁶ These alternative scenarios provide the Governing Council with several additional paths for interest rates that will bring inflation back to the target but at various speeds and with different dynamics.

Regional survey and forecast

Information on economic activity gathered from industry contacts across the country provides a very different lens through which to view the economy. The main source of this information is an industry survey conducted by staff working out of the Bank's five regional offices.⁷ Four times a year, regional representatives visit about 100 companies. Typically, they conduct face-to-face interviews, usually with a senior executive at the firm. They ask a set of standard questions—questions on past and expected future sales growth, investment intentions, inventories, employment plans, wage growth, and product prices. Because it covers only about 100 companies, the survey is small, but it is designed to reflect the diversity of the Canadian economy by region, by type of activity, and by size of firm.⁸ The information gathered through this exercise gives the Council insight into what business people are seeing and planning and provides insight into the real-world stories and business decisions that underlie the official statistics.

Based on their survey, discussions with associations and provincial governments, and other information, regional staff provide a forecast of growth in each region of the country for the current year and for the next year. These forecasts are then aggregated to produce a national forecast that can be compared with the staff economic projection.

Money and credit

The economic model used in the staff projection focuses on the links from interest rates to spending by households and firms. Information on various holdings of money and credit provide yet another view of what

consumers and firms are doing and planning to do. In order to spend, consumers and firms need money or credit, so the evolution of the monetary and credit aggregates provides clues to spending plans. In practice, these aggregates are also affected by portfolio shifts and other purely financial developments, so, as with other high-frequency indicators, the challenge for the staff is to separate the genuine signals about economic activity and inflation from volatility related to other factors. Regular contact with financial institutions provides useful insight into the particular developments that appear to be affecting the growth of money and credit at the time. Information is also obtained on credit spreads in bond markets and on any changes in the conditions under which banks are lending to businesses and households as indicators of changes in credit quality and availability.

The staff in the Bank's Department of Monetary and Financial Analysis assemble this information to provide an overall view from the financial side of the economy on the outlook for output growth and inflation, as well as on the risks surrounding this outlook. Based on this analysis, they also make a recommendation to the Governing Council on the setting of the target overnight interest rate at the next fixed announcement date.

Financial market expectations

The Financial Markets Department provides an assessment of market expectations for interest rates—in particular, what action the Bank of Canada is expected to take on its upcoming fixed announcement dates and what the Federal Reserve is expected to do at their next few meetings. This assessment is based on interest rate futures, expectations implicit in the term structure of interest rates, and on market commentary from polls, from the published reports of investment banks, and from our own interaction with dealers and investors. The discussion highlights what the market is expecting and what factors participants are focusing on. The market perspective acts both as a reference point against which to compare the staff's analysis and as a guide to the issues that may need to be addressed when communicating the decision.

The Final Briefing and Recommendations

With different staff looking at different information, they can, not surprisingly, make different recommendations. The challenge is to bring all the information and analysis together.

6. See Côté et al. (this issue) for a thorough discussion of the search for a "robust" interest rate reaction function and the use of various simple monetary policy rules at the Bank.

7. These offices are located in Vancouver, Calgary, Toronto, Montréal, and Halifax.

8. For more information on the industry survey, see Amirault and Lafleur (2000) and Brady and Novin (2001).

At the final briefing, the Governing Council meets with the other members of the Monetary Policy Review Committee, which includes the six advisers,⁹ the chiefs of the four economics departments, and the financial markets directors in Montréal and Toronto.¹⁰ This meeting typically takes place on the Friday morning preceding a fixed announcement date.

The meeting begins with an update on any economic or financial information received since the staff completed its analysis. The Chief of the Research Department then reviews various indicators of capacity pressures and inflation for Canada. These include indicators of activity and capacity in the goods, labour, and real estate markets, as well as various measures of wage and price inflation, and measures of inflation expectations.

This is followed by a wide-ranging discussion of the economic outlook, the balance of risks, and of the appropriate setting for interest rates. Each of the advisers, chiefs, and financial markets directors provides his or her assessment and makes a recommendation on the appropriate interest rate setting.

The Chief of the Financial Markets Department then discusses market expectations regarding the Bank's upcoming decision. This discussion highlights what market participants see as the factors weighing on the decision and how key messages should be communicated.

Decision and Communication

Friday afternoon, following the final briefing and recommendations, the Governing Council gets down to its own deliberations in earnest. The Council operates on a consensus basis. This means that although differing views and interpretations are expressed, the process of debate and discussion moves towards a shared view that all Governing Council members can support. The Council members begin by developing a common view on the most likely future path for the economy and the underlying trend in inflation. They then come to a common view on the main risks around this outlook, and the overall balance of risks. Finally, they begin their deliberations on the appropriate target overnight rate.

With forecasts coming from several different economic models and advice based on a wide variety of data,

the Governing Council has to decide how to integrate all the information it receives. As the various forecasts and indicators often differ, the Governing Council has to decide how much weight to give to the various pieces of information. This will depend on the judgments of the members of Governing Council as to which factors are the most relevant in the current situation, the track records of the various models and indicators, and the lessons Council members have drawn from past experience. Thus, in the end, the decision reflects the Council's best judgment.

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The Council reconvenes the following Monday, and by the end of the day, reaches a consensus decision on the setting of the target overnight interest rate. With support from a senior communications staff member, they then prepare the press release that outlines the reasons behind the decision. Early Tuesday morning, the decision is confirmed. At 9 a.m., the target overnight interest rate is announced. A short media lock-up under secure conditions at the Bank allows reporters to prepare their stories in advance for prompt release when the target rate is announced.

Four times a year, the Bank of Canada also releases its *Monetary Policy Report* or *Monetary Policy Report Update* a week after the fixed announcement date. These documents provide details on the Governing Council's outlook for economic activity and inflation, the key risks around this outlook, and the reasons for the recent monetary actions. The release of the *Report* or *Update* is accompanied by background briefings to the media by the Deputy Governors and a press conference by the Governor and Senior Deputy Governor. The full *Report* is also followed by testimony before parliamentary committees and by presentations by Deputy Governors and other senior staff across the country and in international financial centres.

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In the world of economic forecasting there is no crystal ball. Even forecasts based on the best information and analysis will be wrong. The key to a successful

9. One of whom is the Special Adviser, a visiting-economist position that is filled by a new incumbent each year.

10. The General Counsel and two senior members of the Communications Department also attend this meeting.

monetary policy is looking ahead to the most likely outcome and reacting promptly and appropriately to surprises, so that inflation is kept on target or brought back to target over a year or two.

The process of reaching monetary policy decisions has changed over time and will no doubt continue to evolve. At the same time, certain key elements have endured and are likely to remain. The conduct of

monetary policy must combine the rigorous analysis of economic and financial data and trends with judgments about how much weight to give to different analytic approaches, all against the background of a changing economic landscape. Looking at the economy through a variety of lenses leads to more comprehensive rigorous analyses, while at the same time informing judgments.

Literature Cited

- Amirault, D. and L.-R. Lafleur. 2000. "Recent Performance of the Canadian Economy: A Regional View." *Bank of Canada Review* (Autumn): 13–23.
- Brady, B. and F. Novin. 2001. "Factors Affecting Regional Economic Performance in Canada." *Bank of Canada Review* (Autumn): 21–29.
- Coletti, D. and S. Murchison. 2002. "Models in Policy-Making." *Bank of Canada Review*, this issue.
- Côté, D., J.-P. Lam, Y. Liu, and P. St-Amant. 2002. "The Role of Simple Rules in the Conduct of Canadian Monetary Policy." *Bank of Canada Review*, this issue.
- Duguay, P. and S. Poloz. 1994. "The Role of Economic Projections in Canadian Monetary Policy Formulation." *Canadian Public Policy* 20: 189–99.
- Jenkins, P. and D. Longworth. 2002. "Monetary Policy and Uncertainty." *Bank of Canada Review*, this issue.
- Knight, M., R. Fay, and B. O'Reilly. 2002. "Information Requirements for Inflation Targeting: The Experience of the Bank of Canada." Paper presented at the conference, *The Statistical Implications of Inflation Targeting*, organized by the IMF, 28 February–1 March 2002. Proceedings forthcoming.
- Longworth, D. and C. Freedman. 1995. "The Role of the Staff Economic Projection in Conducting Canadian Monetary Policy," 101–12. In *Targeting Inflation*, A.G. Haldane, ed. London: Bank of England.
- . 2000. "Models, Projections, and the Conduct of Policy at the Bank of Canada." Paper presented at the conference, *Stabilization and Monetary Policy: The International Experience*, organized by Banco de México, 14–15 November. Proceedings forthcoming.
- Longworth, D. and B. O'Reilly. 2002. "The Monetary-Policy Transmission Mechanism and Policy Rules in Canada." In *Monetary Policy: Rules and Transmission Mechanisms*, 351–92. N. Laoyza and Klaus Schmidt-Hebbel, eds. Proceedings of the Third Annual Conference of the Central Bank of Chile. Santiago: Central Bank of Chile.
- Poloz, S., D. Rose, and R. Tetlow. 1994. "The Bank of Canada's New Quarterly Projection Model (QPM): An Introduction." *Bank of Canada Review* (Autumn): 23–38.