



Transparency and communication with forecast targeting

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Outline

- Flexible inflation targeting
- Forecast targeting
- Publish forecasts of target variables (inflation and unemployment) **and** policy instruments (**the policy rate**)
- Justify policy choice by showing **consequences of alternative policy-rate paths** (including mean squared gaps)
- When needed, show policy choices for alternative assumptions about exogenous variables and domestic and international shocks (alternative scenarios)

Flexible inflation targeting

- Price stability and full employment
- Stabilize inflation around the inflation target and resource utilization around full utilization
- Resource utilization: employment, **unemployment**, output [potential output problematic]
- Loss function $L_t = (\pi_t - \pi^*)^2 + \lambda_u (u_t - u_t^*)^2$
- Specify relative weight, for example, $\lambda_u = 1$
- **A balanced approach to limiting deviations of inflation from the inflation target and unemployment from its long-run sustainable rate**

Lags and expectations

- Inflation and unemployment respond with lags to policy actions (Friedman, “long and variable lags”): **Forecasts!**
- Private-sector **expectations of future policy rates** matter, current rate not so much (Blinder)
- Monetary policy is **management of expectations** (Woodford)
- Manage expectations of both target variables (inflation and unemployment) and policy instruments (policy rate)

Forecast targeting: Decision

- Choose policy rate path so the resulting inflation and unemployment forecasts “look good”
- “Look good”: Stabilize inflation around target and unemployment around long-run sustainable rate
- **Natural trinity:**
 - (1) Policy-rate path, (2) Inflation forecast, (3) Unemployment forecast
- Decision requires explicit discussion and selection of the policy-rate path;
otherwise incomplete decision process

Forecast targeting: Implementation (make credible)

- Make CB policy-rate path and inflation and unemployment forecasts “credible”
- “Credibility”: Private-sector expectations agree with CB policy-rate path and inflation and unemployment forecasts
- Distinguish *intended* monetary policy (CB policy-rate path) and *actual* monetary policy (market expectations/financial conditions)
- Publish and justify the natural trinity (Monetary Policy Report and other communication after each policy decision)
- Publication of the policy-rate path crucial;
otherwise hiding the most important information
- Also, don't forget minutes of the MPC

Bank of Canada's MPR on the policy-rate path

Box 1

Key Inputs to the Base-Case Projection

The Bank's projection is always conditional on several key assumptions, and changes to them will affect the outlook for the global and Canadian economies. The Bank regularly reviews these assumptions and assesses the sensitivity of the economic projection to them.

- Oil prices are assumed to remain near recent average levels. The per-barrel prices in US dollars for Brent, West Texas Intermediate and Western Canada Select are about \$50, \$45 and \$35, respectively, weaker than assumed in the April Report.
 - By convention, the Bank does not attempt to forecast the exchange rate in the base-case projection. Therefore, over the projection horizon, the Canadian dollar is assumed to remain close to its recent average of 76 cents. This assumption is broadly in line with the April Report.
 - The output gap is assumed to show excess capacity of 1/2 per cent in the second quarter of 2017, based on the midpoint of the Bank's estimate that excess capacity in the Canadian economy was in a range of 0 to 1 per cent.¹ This assumption compares with the April assumption of 3/4 per cent excess capacity for the first quarter of 2017.
- Annual potential output growth is assumed to average 1.4 per cent over the 2017-19 projection horizon, close to the midpoint of the Bank's estimated range (Table 2). This assumption is unchanged from April. Further details on the Bank's assessment of potential output are provided in the Appendix to the April 2017 Report.
 - The neutral nominal policy rate in Canada is estimated to be between 2.5 and 3.5 per cent. The current projection is based on the midpoint of this range, which is unchanged from the April assumption.

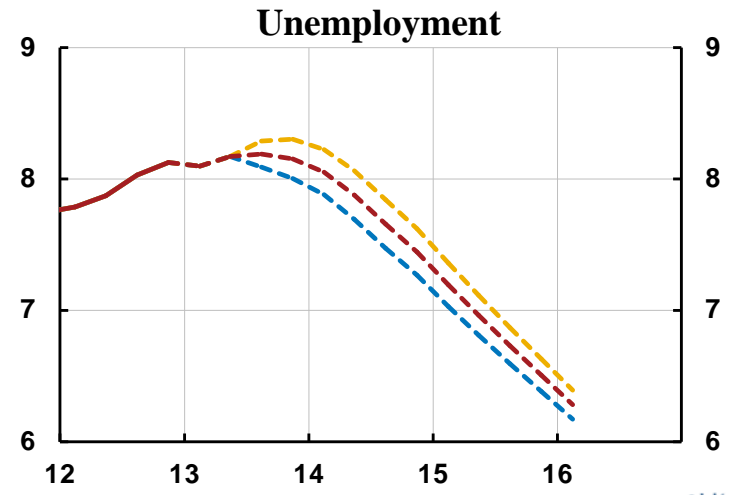
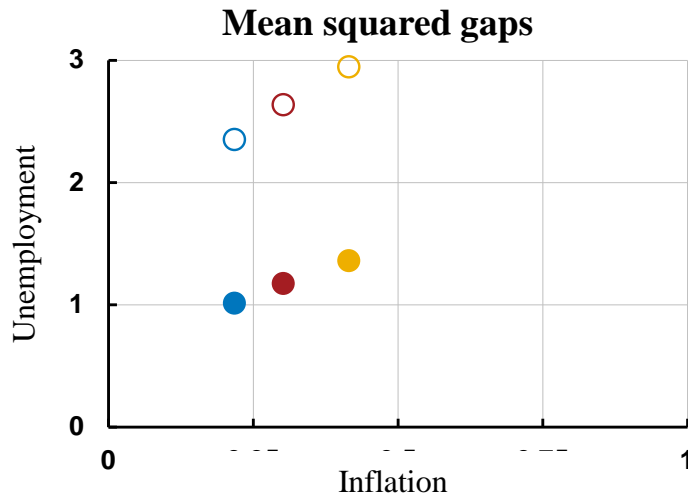
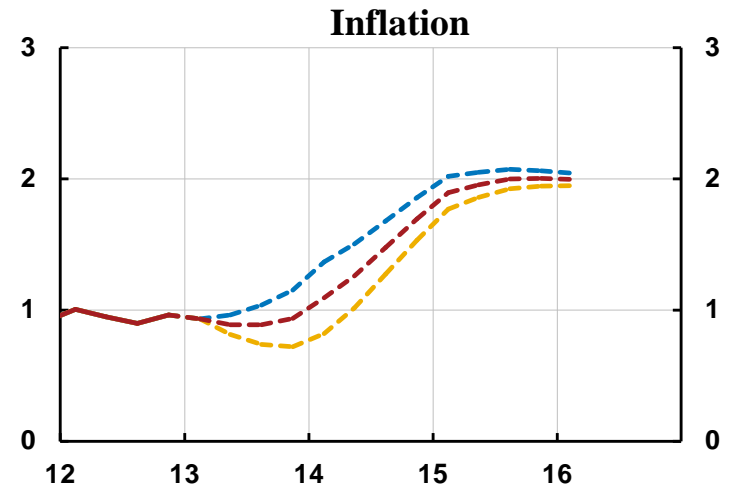
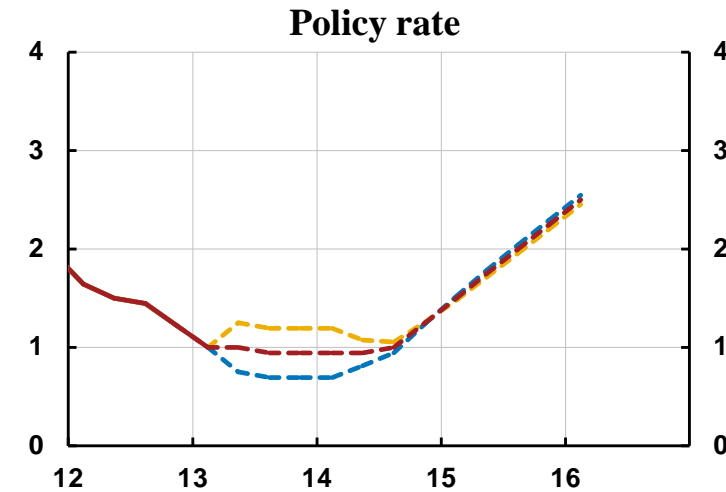
¹ The level of potential output in the first quarter of 2017 is unchanged relative to the April Report.

Forecast targeting: Justification and accountability

- Justify choice of policy-rate path by showing that alternative paths give worse target achievement
- Measure target achievement by mean squared gaps (MSGs)
- Show inflation and unemployment forecasts, policy-rate paths, and MSGs for chosen and alternative policy-rate paths
- Also minutes from the MPC

Forecasts and mean squared gaps, “Four-panel figure,” April 2013

Deputy Governor Karolina Ekholm showed that the majority choice did not look good



Majority choice Lower policy rate Higher policy rate

Filled (unfilled) circles, sustainable unemployment rate 6.25% (5.5%)

Source: Riksbank Deputy Governor Karolina Ekholm, LO Seminar, Stockholm, June 2013



Alternative assumptions about exogenous variables (alternative scenarios)

- If needed, illustrate effects of alternative assumptions about exogenous variables and domestic and international shocks by alternative 4-panel figures

Summary

- Flexible inflation forecast targeting: Choose a policy-rate path so the inflation and unemployment forecasts **look good**
- Explicit discussion and selection of policy-rate path; **otherwise incomplete decision process**
- Publish inflation and unemployment forecasts and, crucially, the policy-rate path; **if not the latter, hiding the most important information**
- Justify choice of policy-rate paths in “four-panel figures” for alternative policy-rate paths
- Don’t forget minutes of the MPC

Additional slides

Loss function, (mean) forecasts and mean squared gaps (MSGs)

Loss function: $L_t = (\pi_t - \pi^*)^2 + \lambda_u (u_t - u_{[t]}^*)^2$

Relative weight: $\lambda_u = 1$

(Mean) Forecasts:

$$\pi^t = \{\pi_{t+\tau,t}\}_{\tau=0}^T, \quad u^t = \{u_{t+\tau,t}\}_{\tau=0}^T, \quad i^t = \{i_{t+\tau,t}\}_{\tau=0}^T$$

Forecast loss function: $L_{t+\tau,t} = (\pi_{t+\tau,t} - \pi^*)^2 + \lambda_u (u_{t+\tau,t} - u^*)^2$

Intertemporal forecast loss function, **mean squared gaps**:

$$\begin{aligned} \frac{1}{T} \sum_{\tau=0}^T L_{t+\tau,t} &= \frac{1}{T} \sum_{\tau=0}^T (\pi_{t+\tau,t} - \pi^*)^2 + \lambda_u \frac{1}{T} \sum_{\tau=0}^T (u_{t+\tau,t} - u^*)^2 \\ &\equiv \text{MSG}_t^\pi + \lambda_u \text{MSG}_t^u \end{aligned}$$

MSGs, measure of **target achievement**

Forecast targeting: Handling new information

- New information relevant only if it changes the forecast for inflation or unemployment for an *unchanged policy-rate path*
- “Filter new information through the forecast”
- If new info shifts forecasts for inflation up (down) and/or unemployment down (up) for unchanged policy-rate path, shift policy-rate path up (down)
- Whole policy-rate path responds to all relevant information; **not simple Taylor-type rule**

References

Bank of Canada (2017), *Monetary Policy Report July 2017*, www.bankofcanada.ca.

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