BANK OF CANADA
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Modern Central Banking: A Canadian Perspective

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Outline

I. Characteristics of a modern central bank

II. Importance of a coherent policy framework

III. Canada's experience with inflation targeting

- as an inflation targeting pioneer
- convergence of inflation targeting frameworks
- improved economic performance

Outline

IV. Canada's recent renewal of the inflation-control target

- recent research
- two important outstanding questions
- research agenda for the next three years

V. Conclusion

I. Modern Central Banking

- A modern, credible central bank can be distinguished by five key characteristics:
  - legitimacy
  - clear policy objectives and effective tools
  - flexibility
  - expert decision-making
  - transparency and accountability
- How does the conduct of Canadian monetary policy match up against these five characteristics?

How Does Canada Look

- Legitimacy:
    - inflation-target is a joint agreement between government and the Bank of Canada
    - with experience under inflation targeting there is broad support among Canadians for low, stable and predictable inflation
- Clear objectives and effective tools:
    - one, clear objective - - 2 per cent target for CPI
    - one instrument - - overnight interest rate
- Flexibility:
    - 18 to 24 month policy horizon to achieve target
    - forward looking
    - regular decision-making (repeat game)
    - symmetric approach to upward and downward pressures on inflation

How Does Canada Look

- Expert decision-making:
  - consensus among six member Governing Council
  - assessment of information from diverse sources
  - strong reliance on staff, research-based inputs
  - full discussion and debate of all relevant information
- Transparency and accountability:
  - a clear objective helps explain why policy objective is important and holds the Bank accountable
  - a regular, continuous, and integrated program of communications with our target audiences
  - will come back to importance of communication

II. A Coherent Policy Framework

- A coherent policy framework is one where the component parts, working together, provide good policy outcomes and is robust to economic and financial shocks
- Three main elements make up Canada's monetary policy framework:
  - an explicit inflation target
  - a flexible exchange rate, with a clear view of the transmission mechanism
  - transparency and communications

Advantages of a Flexible Exchange Rate

- A flexible exchange rate:
  - Allows Canada to run an independent monetary policy suited to our own domestic situation
  - Facilitates the adjustment to economic disturbances by providing clear price signals
- Despite the extent of economic integration, the economic structures of Canada and the U.S. are very different
- And there is limited labour market mobility between Canada and the United States relative to mobility within Canada
- Given these differences, a straight cost/benefit analysis favours our existing monetary policy framework over some form of fixed exchange rate arrangement

III. Canada's Experience with Inflation Targeting

- Canada was among the first few countries to adopt inflation targeting, following New Zealand's lead
- Satisfaction with the performance of the present inflation-targeting arrangements, but a natural desire to look for further improvements
- Why this is a topic of particular interest in Canada -- renewal of our inflation-target agreement with the government late last year
- Sharing some of the ideas that the BoC has been examining in the hopes that others will join the research

Shifting International Opinion on Inflation Targeting

- Early scepticism of inflation targeting in both industrial and emerging market economies
- 23 countries are now inflation targeters, and the list is growing
- Many more countries and regions are inflation targeting unofficially or implicitly

Gradual Convergence of Inflation Targeting Frameworks

- Early differences in inflation-targeting frameworks, especially between industrial and emerging market economies
- Evidence that inflation-target frameworks are now converging on a common template: a 2 per cent target rate for headline CPI; a 2 per cent target band; and an extensive communications program
- Few changes in Canada from the initial framework

Evidence of Improved Economic Performance

- Inflation targeting neither necessary nor sufficient for improved economic performance
- Nevertheless, inflation-targeting countries seem to have experienced better results relative to non-inflation-targeting countries and relative to their own prior performance
- Notable studies include the extensive review by Klaus Schmidt-Hebbel and Rick Mishkin (2005)

Evidence of Improved Economic Performance

- Inflation targeters typically have:
    1) lower and more stable inflation
    2) less price-pass-through
    3) lower and more stable interest rates
    4) more firmly anchored inflation expectations
    5) greater policy independence
    6) more stable output growth

Table 1

Canadian Economy

Inflation Performance over Different Time Periods*					
	1975M1 to 1991M1	1991M2 to 2007M8	1995M12 to 2007M8	1995M12 to 2001M4	2001M5 to 2007M8
Average (%)	7.1	2.1	2.0	1.8	2.2
Standard deviation	2.9	1.2	0.8	0.7	0.9
Percentage of time within the control range	n.a.	72	82	83	80

*** Inflation is defined as the 12-month rate of increase in the total CPI.**

Table 2

Canadian Economy

Canada's Economic Performance	Average (%)				Standard deviation			
	1975M2 to 1991M1	1991M2 to 2007M8	1995M12 to 2007M8	2001M5 to 2007M8	1975M2 to 1991M1	1991M2 to 2007M8	1995M12 to 2007M8	2001M5 to 2007M8
CPI: 12-month increase	7.1	2.1	2.0	2.2	2.9	1.2	0.8	0.9
Real GDP growth[1]	2.9	3.1	3.3	2.6	3.8	1.9	1.8	1.5
Unemployment rate	8.9[2]	8.5	7.6	7.0	1.7[2]	1.7	1.0	0.6
3-month interest rate	10.9	4.7	3.9	3.2	3.0	1.8	1.1	0.8
10-year interest rate	10.8	6.1	5.3	4.7	2.0	1.6	0.9	0.5

1. Annualized quarter-over-quarter growth rate for periods: 1975Q1 to 1991Q1; 1991Q2 to 2007Q2; 1995Q4 to 2007Q2; 2001Q2 to 2007Q2
2. 1976M1 to 1991M1. The sample starts in 1976M1, owing to the introduction of a new labour force survey at that time

Table 3

Canadian Economy

Total vs Core CPI Inflation			
	1991M2 to 1995M11	1995M12 to 2001M4	2001M5 to 2007M8
12-month rate increase (%)			
Total CPI	2.2	1.8	2.2
Core CPI (CPIX)	2.1	1.5	2.0
Standard deviation			
Total CPI	1.8	0.7	0.9
Core CPI (CPIX)	0.4	0.4	0.4

Some Canada-US Comparisons

- The US has done well without (explicit) inflation targets
- Canadian and US experience might not be exactly comparable, as Canada is a (relatively) small open economy
- Some suggestive evidence, nevertheless, pointing to superior performance in Canada linked to inflation targeting
- Lower inflation, reduced variability, less persistence, and more firmly anchored expectations

Table 4

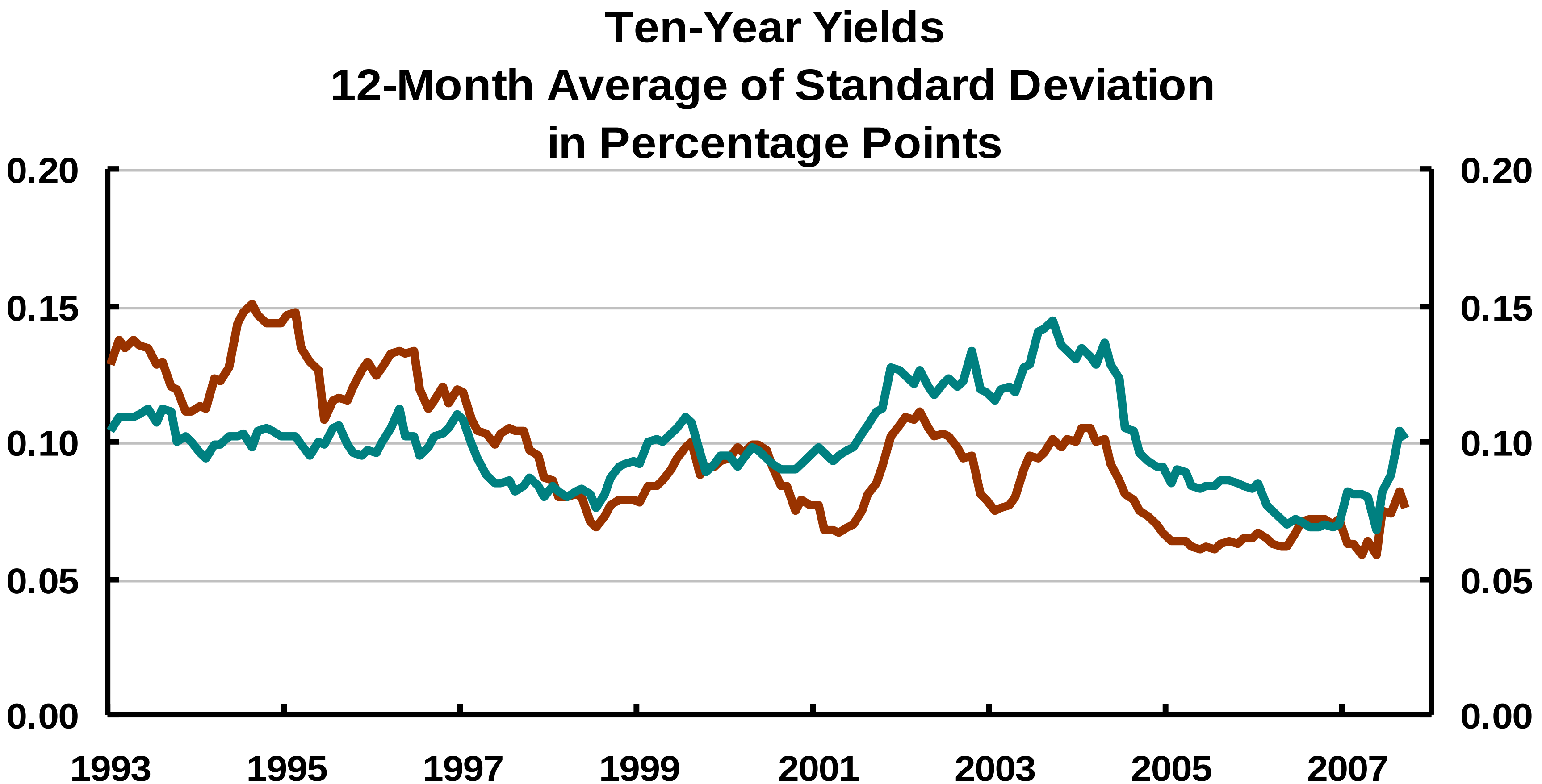
Comparison of Canadian and U.S. Economic Performance

	Canada	United States	Canada	United States	Canada	United States
	Average 1980 M1 to 1991 M1		Average 1991 M2 to 2007 M8		Average 1997 M1 to 2007 M8	
CPI - y/y	6.36	5.55	2.07	2.72	2.07	2.54
CPI core - y/y	4.06[1]	5.97	1.89	2.63	1.80	2.22
Real GDP[2]	2.44	2.80	3.06	3.08	3.38	2.98
3 month interest rate	11.69	9.06	4.71	4.22	3.86	3.98
10 year interest rate	11.42	10.19	6.14	6.06	5.08	5.43

1. 1985 M1 to 1991 M1.
2. Q/Q annualized, 1980 Q1 to 1991 Q1; 1991 Q2 to 2007 Q2, 1997 Q1 to 2007Q2.

Chart 1

Canada – U.S. Comparison Interest Rate Volatilities



What Have We Learned So Far?

1) Inflation targeting is seen as best practice for countries with their own currency and a flexible exchange rate

2) Inflation targeting frameworks across different countries have started to converge

3) Inflation targets have proven to be successful

IV. Renewal of Canada’s Inflation-Control Target

- In November 2006 Canada’s inflation-control target was renewed for a period of five years to the end of 2011
- Under this agreement the Bank will continue to conduct monetary policy aimed at keeping total CPI inflation at 2 per cent
- The Bank’s document, “Renewal of the Inflation-Control Target: Background Information”, describes Canada’s experience with inflation target, reviews some key issues and identifies issues warranting further research

Total Inflation and Core Inflation

- The inflation target will continue to be set in terms of the 12-month increase in the total CPI
- This reflects its role as the most commonly used indicator of inflation in Canada and the most relevant estimate of the cost of living
- Because the total CPI is subject to considerable variability, a measure of core inflation - - which removes volatile price components - - provides a useful guide for the conduct of monetary policy

Target Time Horizon

- Based on recent research, the Bank concluded that the present policy of bringing inflation back to the 2 per cent target within six to eight quarters following a shock is still appropriate generally
- However, specific occasions may arise in which a somewhat shorter or longer time horizon might be appropriate

Asset Price Shocks and Greater Flexibility

- The recent debate over asset price shocks
- Two sharply opposing camps in the early stages of the asset price debate
- View has emerged of the possible need for a more flexible target horizon in exceptional circumstances

Two More Fundamental Questions

- Two long-standing, but as yet unanswered, questions:
  1) Is 2 per cent the optimum inflation target, or should it be lower?
  2) Would price-level targeting be better than inflation targeting?

How Dangerous Is Price Deflation?

- Three reasons why central banks are reluctant to aim for lower inflation:
  1) Measurement bias in the CPI
  2) Downward wage rigidity–greasing the wheels
  3) Zero-bound on interest rates
- The BoC sees measurement error and downward wage rigidity as less of a constraint

Solving the Zero-Bound Problem

- Why the zero-bound remains a serious concern -- lessons from Japan
- Non-traditional monetary policy methods and more aggressive policy reactions as possible answers
- Price-level targeting as an intriguing and often ignored alternative

Price-Level Targeting Problems

- Traditional arguments against price-level targeting:
  1) Communication challenges -- the public will not understand it
  2) It will destabilize output growth and inflation
  3) It will lead to instrument instability

Price-Level Targeting Benefits

- Some counter arguments in favour of price-level targeting:
  1) Price-level targeting has considerable intuitive appeal
  2) Output growth and inflation might be more stable
  3) Reduces risk associated with zero-bound
  4) Greater price-level certainty might offer its own advantages in terms of increased efficiency

Price-Level Targeting Benefits

- There is reason to believe that price-level targeting might be both feasible and desirable. It might make a lower inflation target much easier to achieve and reduce the problems posed by the zero-bound

- This remains an open question, however, requiring further work

A Forward-Looking Research Agenda

- The Bank of Canada is initiating a new, ambitious, medium-term research agenda designed to address the following questions:
  1) How large are the improvements in economic welfare of a lower inflation target?
  2) Are there practical ways to avoid the zero-bound problem?
  3) What are the key frictions that give rise to transition costs in moving to a lower target?
  4) What are the benefits of reduced price-level uncertainty?
  5) What are the relative merits of inflation targeting versus price-level targeting in an open economy?
  6) Should the choice of a monetary policy framework in an open economy, such as Canada, be influenced by what other countries do?

Some Promising Early Results

- Here is what some of our research has shown so far:
  1) CPI measurement bias is less than 0.75 per cent at a maximum
  2) Downward wage rigidity is not economically significant
  3) The effectiveness of monetary policy might improve at lower inflation rates
  4) Price-level targeting might generate stabilizing expectations

Some Promising Early Results

- Not all of our results and those of other researchers have been so positive, however; and many more questions of both a theoretical and practical nature remain to be answered
- The Bank invites others, including academics and central banks, to join this research program
- A broad and open research effort will produce more robust findings

V. Conclusions

- Inflation targets have performed better than we had hoped
- Indeed, inflation targets have out-performed and outlasted all of the other systems that we have tried
- Still there may be room for further improvement

Conclusions

- Some important questions remain unanswered, and will not be easy to resolve
- Joint work involving a number of researches would no doubt make the task much easier
- Questions/comments/discussion