Canada’s Pioneering Experience with a Flexible Exchange Rate in the 1950s: (Hard) Lessons Learned for Monetary Policy in a Small Open Economy.

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This presentation represents the views of the authors, not the Bank of Canada.
Context

- Canada’s lengthy postwar experience with a flexible exchange rate (62 out of 75 years)
- The flexible exchange rate is an integral part of the Bank of Canada’s monetary policy framework
- Monetary policy framework consists of:
  1. Flexible exchange rate
  2. Inflation targeting (provides the nominal anchor)
- Central bank experience (sometimes by painful trial and error) has often lead academic research
Objective of the Presentation

• Analyse Canada’s initial postwar experience with a flexible rate
• Summarize two papers:
  1. Bordo, Gomes and Schembri (forthcoming 2010) “Canada and the IMF: Trailblazer or Prodigal Son”
Motivation

• Canada was a founding member of the IMF and the first major member to abandon the Bretton Woods system

• Canada – Flexible exchange rate “pioneer”; October 1950 – June 1962

• Started & ended in controversy: Severe criticism by the IMF & the firing of Bank of Canada Governor James Coyne (1955-61)

• Canada & US also had integrated capital markets

• Unique policy experiment; very influential; subject of numerous studies: Friedman, Mundell et. al.
Friedman’s Perspective

– …floating rates are not a guarantee of sensible internal monetary policy. … All floating rates do is make it possible for you to have a sensible internal monetary policy without considering the rest of the world.

– The reason Canada went off floating rates [in 1962] was because they were working so well, and their internal monetary policy was so bad
Mundell’s Perspective

– “whether insulation is achieved or not depends on the precise behaviour of the monetary authorities”

– “…the tight monetary policy … suggests a faulty understanding of how the advantages of a flexible exchange rate system can be exploited.”
Coyne’s Perspective

- “To the extent that the phrase (“tight monetary policy”) might be taken to imply a contraction in the availability of money, it is not applicable. In this sense of the phrase there has never been a ‘tight monetary policy’” in Canada….”

- “[I] have always felt the special responsibility as Governor … to protect the value of the Canadian dollar.”
Outline

1. Historical narrative
   • The decision to float: 1945-51
   • Heyday of the float: 1952-1956
   • The prodigal son: 1957-62
2. Counterfactual experiments
3. Impact on research: Mundell-Fleming or Fleming-Mundell?
Historical Narrative
Decision to Float: 1945-51

- The decision to float in October 1950 was motivated by:
  1. The inability to find a stable pegged rate in the face of volatile commodity prices
  2. Fear of intense inflationary pressure from the end of postwar controls and increasing commodity prices
  3. A desire to avoid more controls and more intervention

- The decision was justified as being temporary until market forces could arrive at the correct rate
CDN$: Revalued, devalued & floated - 1945-51
Monthly Average Noon Rates, U.S. Dollars Per Unit
Commodity prices were volatile - 1945-51

Annual (1953=100)

Source: Bank of Canada
Canadian reserves also fluctuated - 1945-51

Billions of U.S. Dollars

Source: Bank of Canada
What happened after the float?

• CDN$ appreciated by 15% over the next year, helping to check inflationary pressures.
• Nonetheless, inflation rose to over 12%.
• Two lessons:
  1. Bank of Canada did not have all the instruments necessary to conduct monetary policy under a flexible exchange rate.
  2. Mexico was talked into keeping a fixed rate by the IMF; inflation went to over 20% for 2-3 years.

-> Flexible rate has useful insulation properties.
Heyday of the Floating Rate: 1952-56

- The flexible exchange rate accelerated financial market development: capital controls were eliminated; T-Bill market develops; monetary policy rate floats with T-Bill rate
- CDN$ stable – 4 cent (US) range – Too stable?
- Conduct of monetary policy improves, but still sluggish and unresponsive over the cycle
- Flexible exchange rate on a leash, not able to play fully its shock absorber role
GDP: Korean War boom, bust and recovery - 1952-56
Quarterly, Year-Over-Year Growth Rate (1997 Prices)

Source: U.S. Bureau of Economic Analysis and Statistics Canada

Source: Statistics Canada
CDN$ 1952-56: Too stable?
Monthly Average Noon Rates, U.S. Dollars Per Unit
Policy Misunderstandings: 1957-61

- James Coyne becomes Governor in 1955; monetary policy shifts and becomes more focused on inflation and even less countercyclical
- Interest rates and unemployment rates higher than US levels
- Increasing criticism about Bank monetary policy and growing political tension
- Government responded with expansionary fiscal policy
- Interest rates and exchange rates rise further; economy slows
- Role and response of the exchange rate not well understood
Interest rates were volatile: 1957-61
Monthly

Source: Statistics Canada and the Bank for International Settlements
CDN$ 1957-61: Appreciated because of policy mix

Monthly Average Noon Rates, U.S. Dollars Per Unit
Unemployment rate rose above the US: 1957-61

Monthly

Inflation was very stable: 1957-61
Monthly (1997=100), Year-Over-Year Growth Rate

Prodigal Son Returns: 1961-62

• Coyne forced to resign: July 1961
• Rasminsky takes over on the condition that the responsibility for monetary policy be clarified in the Bank of Canada Act
• Government wants the dollar to depreciate; tries to talk it down; nothing happens
• Bank of Canada starts to intervene; amounts increase; CDN$ has a free fall
• Canada borrows from the IMF and re-peggs at US$0.925 – June 1962
IMF Reaction

• 1950-51: IMF: Canada was demonstrating a “lack of discipline” and flouting the rules of the BW system
• IMF: Canada should revalue (to what level?), impose controls on inflows (too distortionary) or sterilise the inflows (need to issue more debt)
• 1952-56: Stability of CDN$ over this period – a surprise; economists had predicted instability; consistent with Friedman’s argument for stabilising speculative flows
• IMF: “Canada is a special case”; experience cannot be generalised
IMF Reaction

- IMF conclusions from Canadian experience
  1. Flexible rates are only useful as a temporary measure
  2. Conduct of monetary policy is too difficult under a flexible rate
  3. Capital flows lead to instability and are better managed under a fixed rate
Counterfactual Exercises: Purpose

• To “test” the validity of the joint hypothesis:
  1. The Canadian flexible ER was successful
     • Helped stabilize the Canadian economy & was largely determined by fundamentals
  2. Inappropriate monetary policy was responsible its demise.
Counterfactual Experiment #1

- Assume that the pre-Coyne monetary policy remained in place during the Coyne era
  - Pre-Coyne: 1952:1–1956:12 (5 years)
  - Coyne: 1957:1–1961:12 (5 years)

- Two elements of the experiment:
  1. Monetary policy rule
  2. Structural shocks to the rule
Counterfactual Experiment #2

• Assume that the fixed rate was maintained at original parity
  – Canada assumes U.S. monetary policy (under perfect capital mobility)
  – Canadian short-term interest rate is set equal to the U.S. short-term rate
Methodology

1. DSGE model of small open economy
2. Bayesian estimation of structural parameters
3. Extraction of structural shocks
4. Counterfactual simulation of estimated model with structural shocks & modified monetary and/or exchange rate policies;
   - Estimate volatilities of endogenous variables
   - Caveat: Experiments bias upwards the volatilities because parameters unchanged
Theoretical Model: Key Equations

- Open economy dynamic IS curve
  - Output demand determined
- New Keynesian Phillips curve
  - Inflation depends on output gap
- Changes in the nominal exchange rate
  - PPP and uncovered interest rate parity
- Monetary policy reaction function
  - Taylor rule: policy rate a function of inflation and output gap
### Volatilities from Counterfactual Experiments

(Standard deviations in %)

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Data A Coyne MP Shocks</td>
<td>Data B Pre-Coyne MP Shocks</td>
</tr>
<tr>
<td>Output</td>
<td>2.54</td>
<td>2.16</td>
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<tr>
<td>Nominal interest rate</td>
<td>1.07</td>
<td>1.35</td>
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<td>CPI inflation</td>
<td>1.02</td>
<td>1.52</td>
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<tr>
<td>Δ(Nominal exchange rate)</td>
<td>0.69</td>
<td>1.72</td>
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</table>
Data and Counterfactual Series
Fixed Exchange Rate

Output
Nominal Interest

Inflation
Exchange rate

Data | Fixed exchange rate
Impact on Research

- Robert Mundell, J. Marcus Fleming and Rudolf Rhomberg
- Canada’s experience demonstrated that
  1. Flexible exchange rates are a viable alternative to fixed rates
  2. Macro stabilization policy is different under a flexible and fixed exchange rates
  3. Capital mobility adds an important dimension to the assignment problem
Robert Mundell

- Influenced by the Canadian experience, as he started working on the issue in the late 1950s and published a series of papers beginning in 1960-1963 – CJE (1963)
- The issues of exchange rate regimes, stabilization policy, capital mobility, and country size were critical to his work
- Key finding: Assignment problem: Under fixed rates use fiscal policy and under flexible rates, monetary policy to stabilise output
- Very insightful for understanding the Canadian experience (monetary & fiscal policy conflict) in the latter part of the floating rate period
J. Marcus Fleming

- IMF Research Department; 1954-76
- Key paper: 1962; clearly was aware of Mundell’s work and the Canadian experience, although Canada was not cited
- Also uses an open economy IS-LM model and obtains the key results of regarding the effectiveness of monetary & fiscal policy
- The depth of insight is not nearly as large as that provided by Mundell
- “Mundell-Fleming” ordering is appropriate
Rudolf Rhomberg

• Contribution undervalued
• Two important papers (JPE, IMF Staff papers)
• Key findings:
  1. Model of CDN$ market: Capital flows responded to interest rate differentials and were largely stabilizing;
  2. Expectations and flexible rates were not intrinsically volatile, as they depend on underlying fundamentals
  3. Econometric model of an open economy; applied to Canada; 40 data points; largely confirms Mundell’s theoretical findings
Concluding Remarks

• The flexible rate performed reasonably well, when it was allowed to adjust to shocks
• When the exchange rate did move, it moved according to the fundamentals (terms of trade; interest rate spreads).
• The regime’s demise was not due to the regime itself, but due to inappropriate monetary policy
• Canada abandons the BW system for good in 1970, under virtually the same circumstances as in 1950
Concluding Remarks

• Key lesson: Flexible rate under capital mobility needs to be supported by coherent macroeconomic policy to operate effectively as means of facilitating adjustment and absorbing shocks

• Canada’s experience played an important role in the development of theory and policy in open economies
Money supply was volatile - 1957-61

(M1) Monthly, Year-Over-Year Growth Rate

Source: UBC Department of Economics and the National Bureau of Economic Research
Data

- Data used are monthly (1952:1-1961:12)
- Growth of Canadian industrial production index
- 90-day T-bill interest rate
- CPI inflation;
- Nominal ($CDN/US$) exchange rate
- Terms of trade (price of domestic goods in terms of foreign goods)
Volatilities & Autocorrelations: Data & Estimated model

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<thead>
<tr>
<th>Variables</th>
<th>Volatilities</th>
<th>Autocorrelations</th>
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<tbody>
<tr>
<td></td>
<td>Data</td>
<td>Model</td>
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<tr>
<td><strong>A. Post-1957 period</strong></td>
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<tr>
<td>Output</td>
<td>2.54</td>
<td>2.76</td>
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<tr>
<td>Nominal interest rate</td>
<td>1.07</td>
<td>0.95</td>
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<td>CPI inflation</td>
<td>1.02</td>
<td>1.25</td>
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<tr>
<td>Dif (Nom. exchange rate)</td>
<td>0.69</td>
<td>1.53</td>
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<tr>
<td><strong>B. Entire floating period</strong></td>
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<td>Output</td>
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<tr>
<td>CPI Inflation</td>
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<tr>
<td>Dif (Nom. exchange rate)</td>
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<td>1.85</td>
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Data & Counterfactual Series
Pre-1957 Monetary Policy

Output

Nominal interest

Inflation

Exchange rate

- Data  Pre-57 MP  Post-57 MP