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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"
 2. Bordo, Dib and Schembri (2009)
"Canada's Pioneering Experience with a Flexible Exchange Rate in the 1950s: (Hard) Lessons Learned for Monetary Policy in a Small Open Economy"

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?

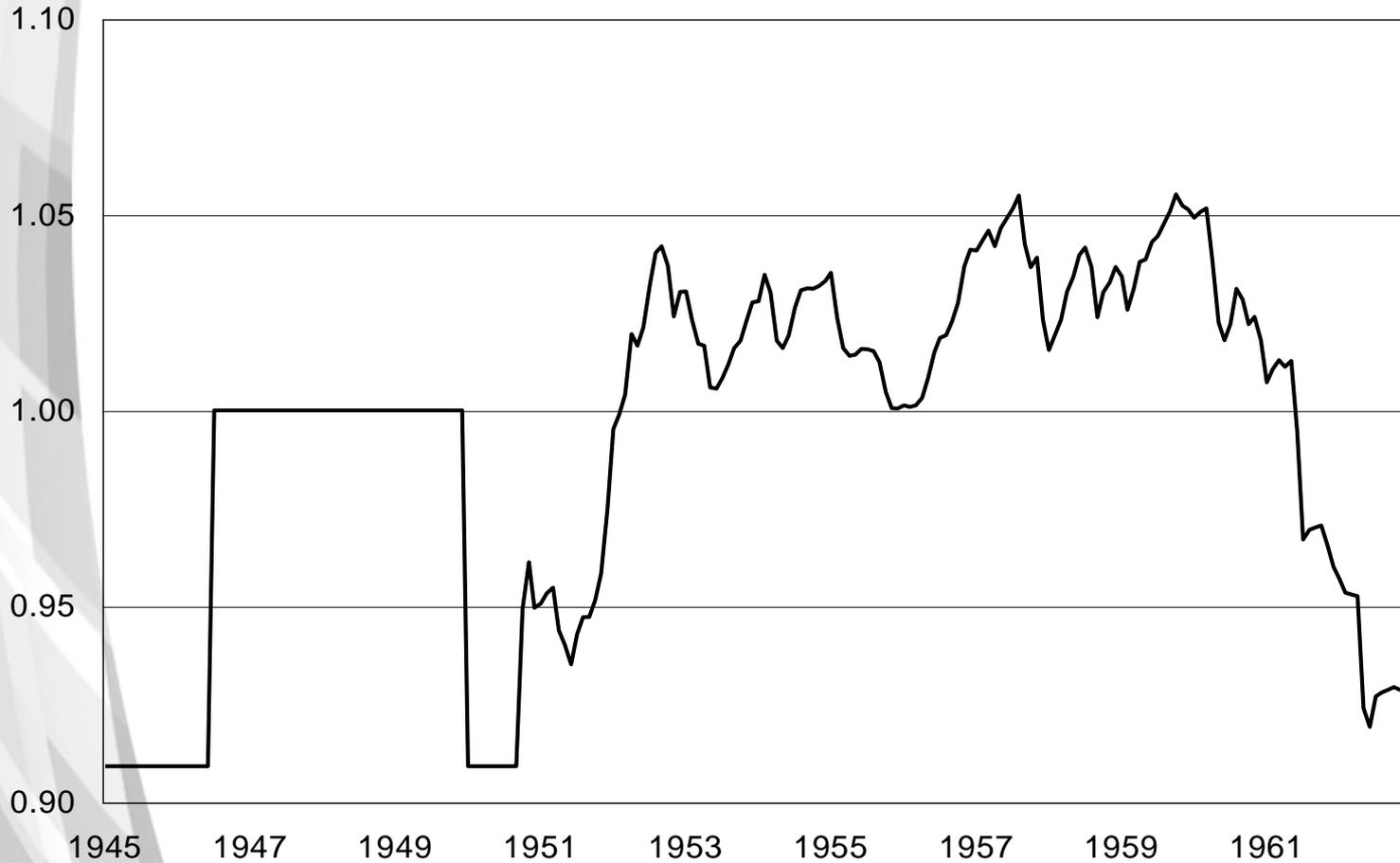
Historical Narrative

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

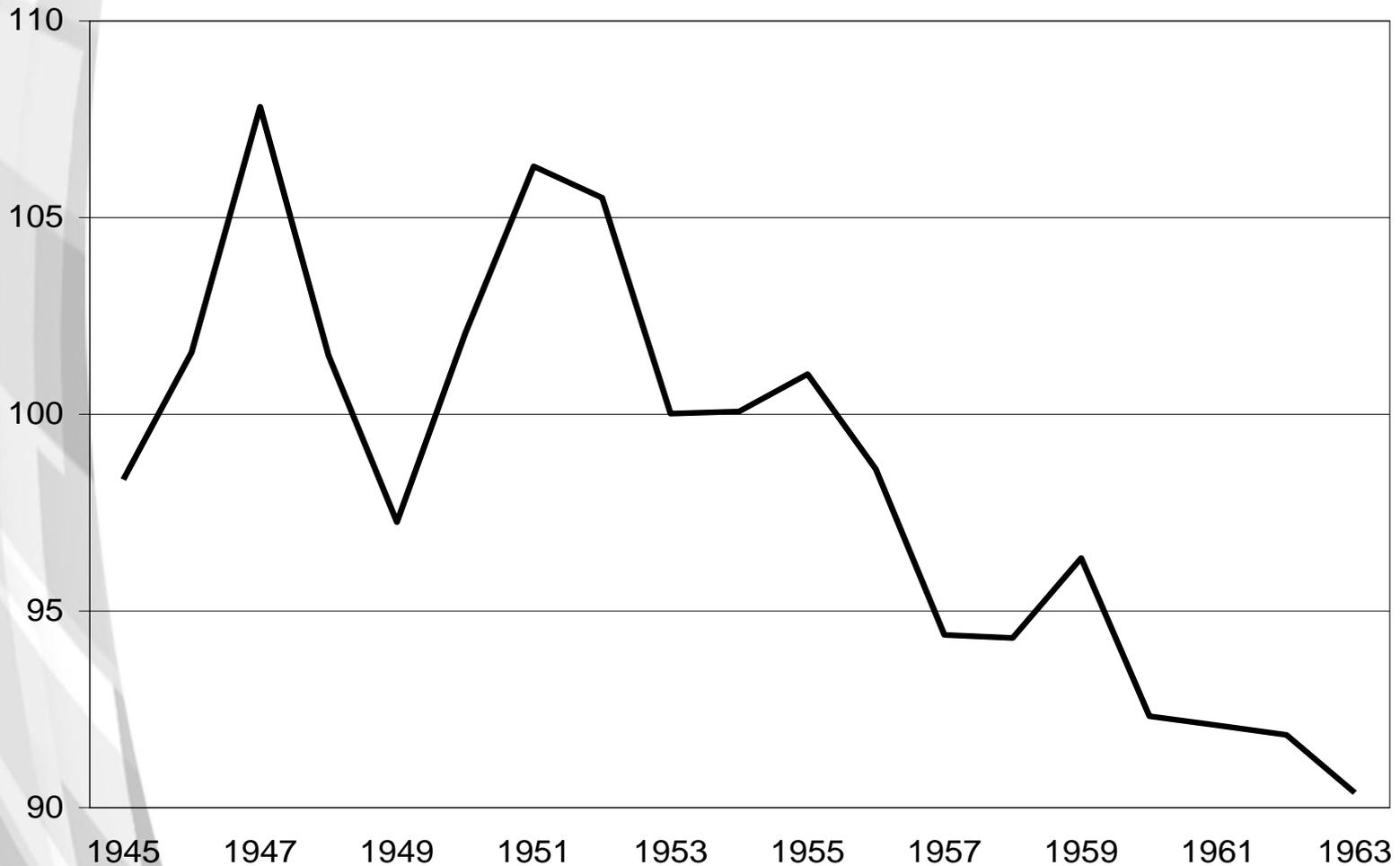
CDN\$: Revalued, devalued & floated - 1945-51

Monthly Average Noon Rates, U.S. Dollars Per Unit



Commodity prices were volatile - 1945-51

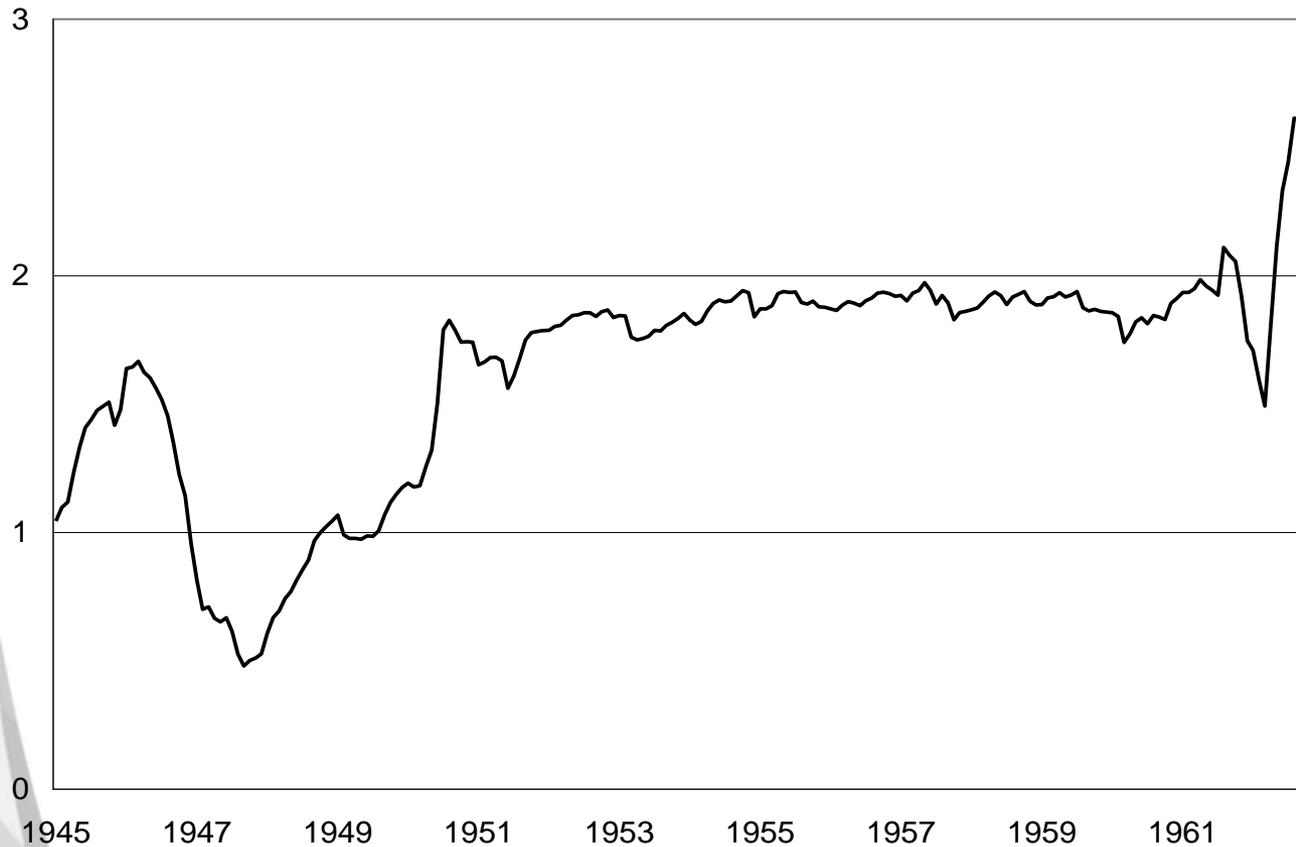
Annual (1953=100)



Source: Bank of Canada

Canadian reserves also fluctuated - 1945-51

Billions of U.S. Dollars



Source: Bank of Canada

What happened after the float?

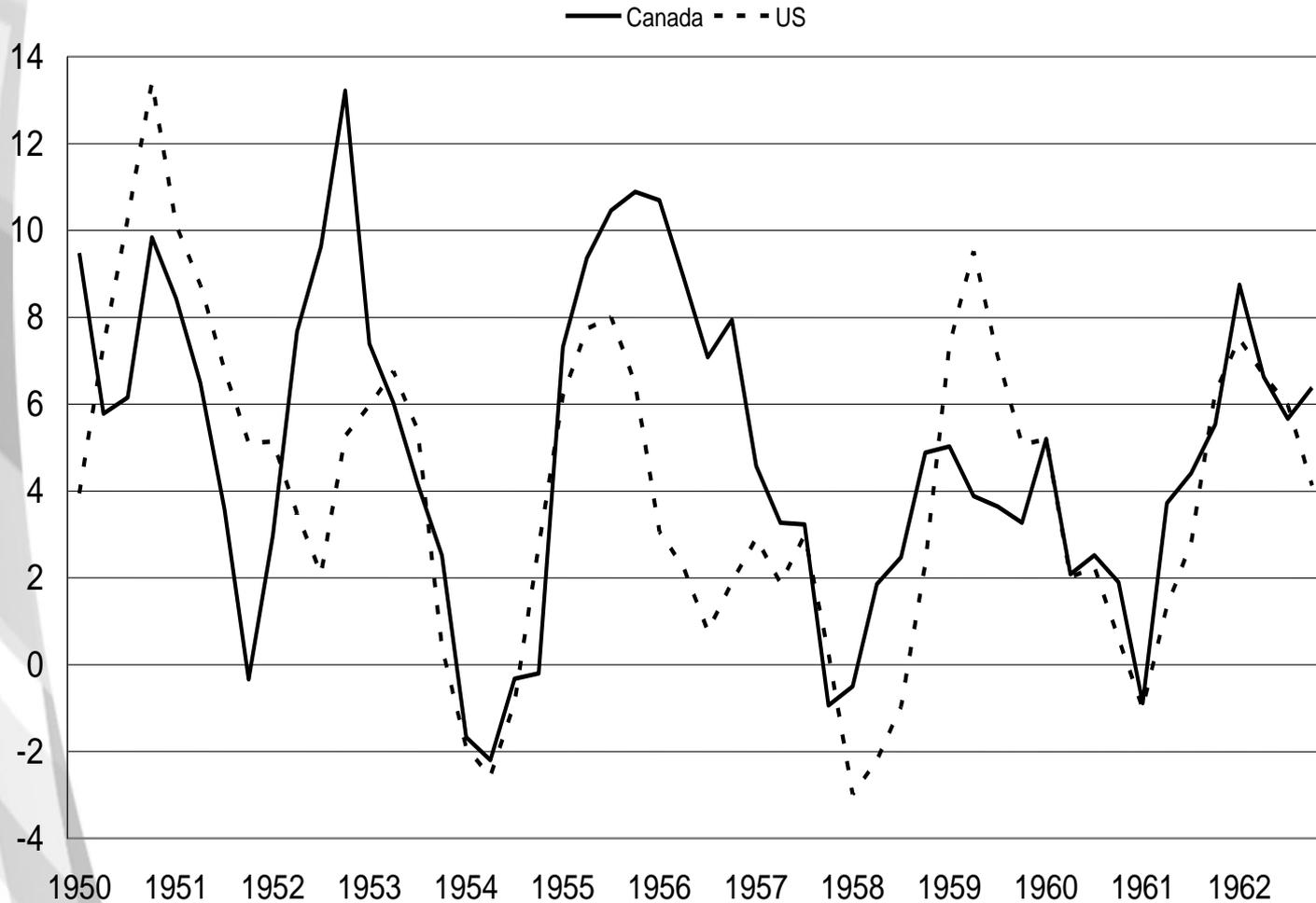
- CDN\$ appreciated by 15% over the next year, helping check inflationary pressures
 - Nonetheless, inflation rose to over 12%
 - Two lessons:
 1. Bank of Canada did not have all the instruments necessary to conduct monetary policy under a flexible exchange rate
 2. Mexico was talked into keeping a fixed 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?
- Short, “V” shaped post-Korean War recession: 1953-54; strong growth resumes 1954-56 – investment-led resource boom
- 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

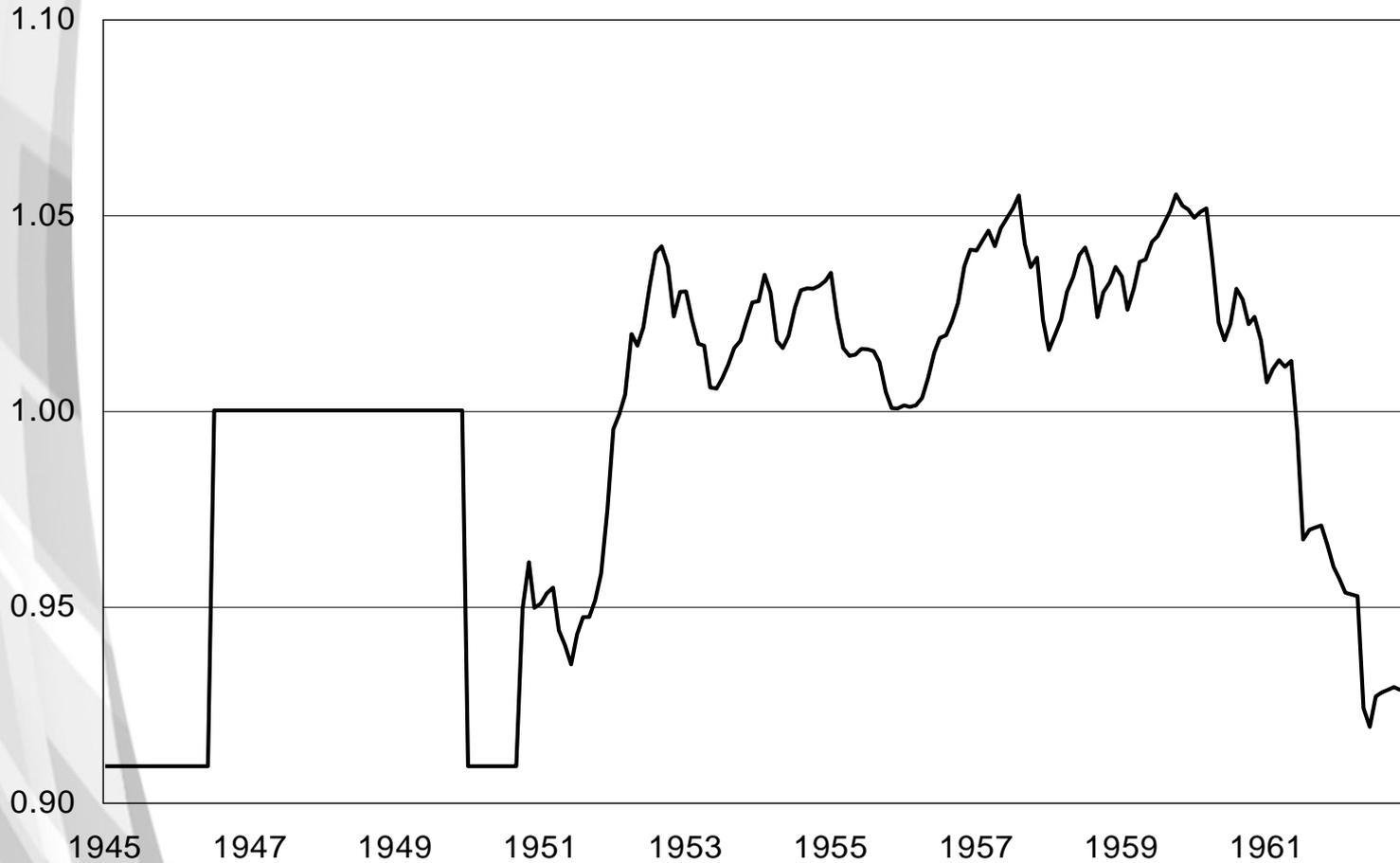
Quarterly, Year-Over-Year Growth Rate (1997 Prices)



Source: Statistics Canada

CDN\$ 1952-56: Too stable?

Monthly Average Noon Rates, U.S. Dollars Per Unit

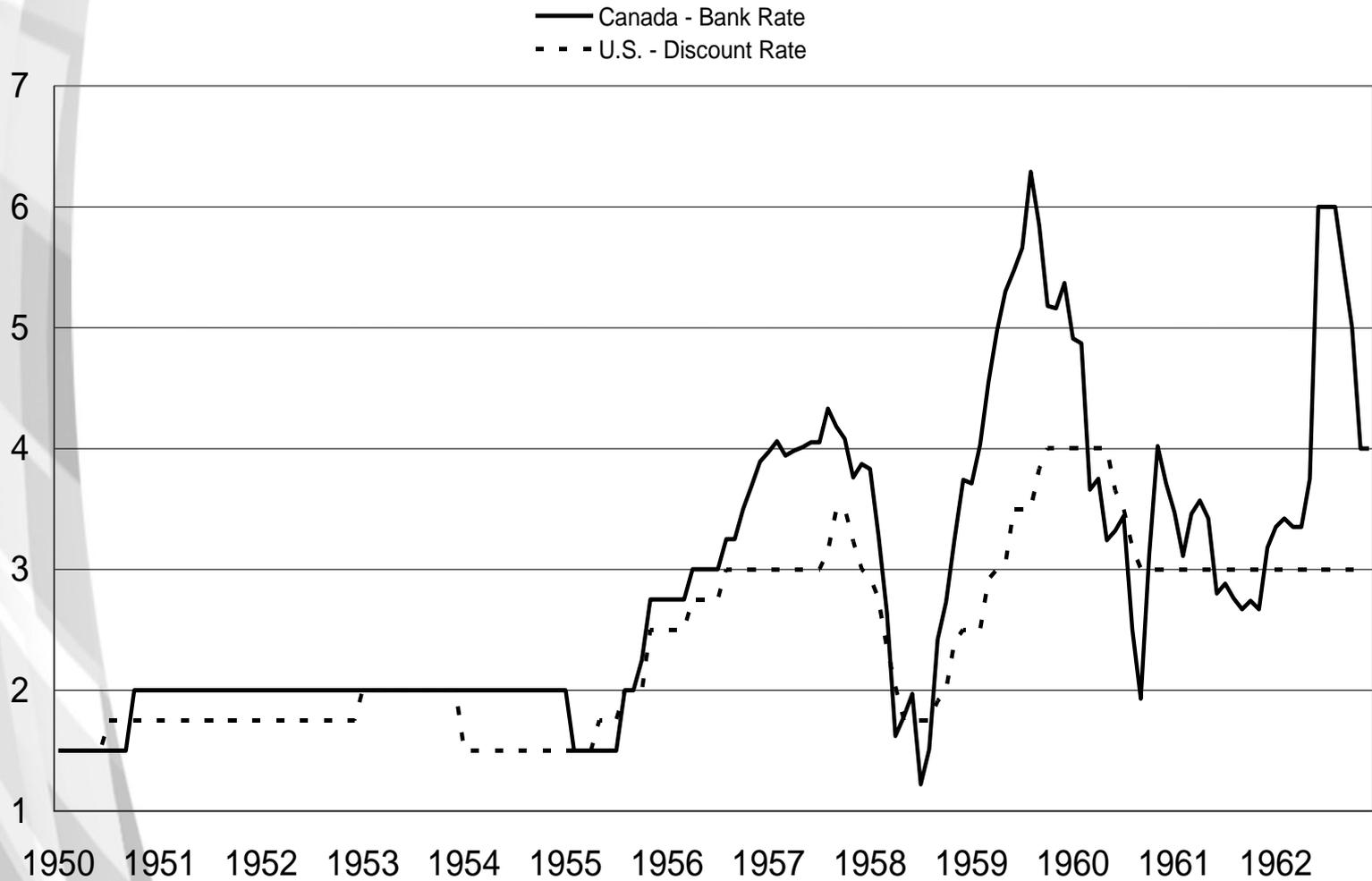


Policy Misunderstandings: 1957-61

- 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

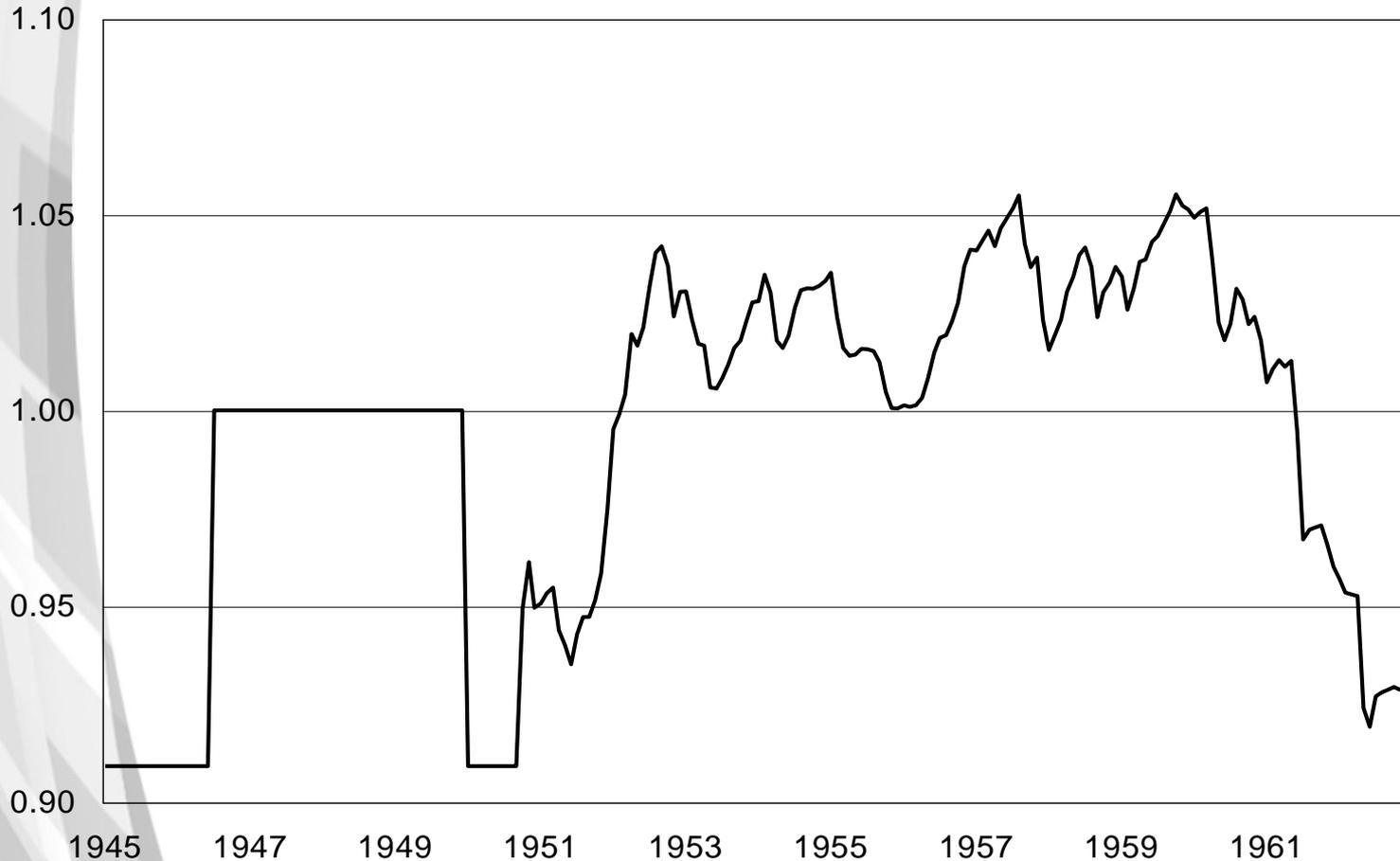
Monthly



Source: Statistics Canada and the Bank for International Settlements

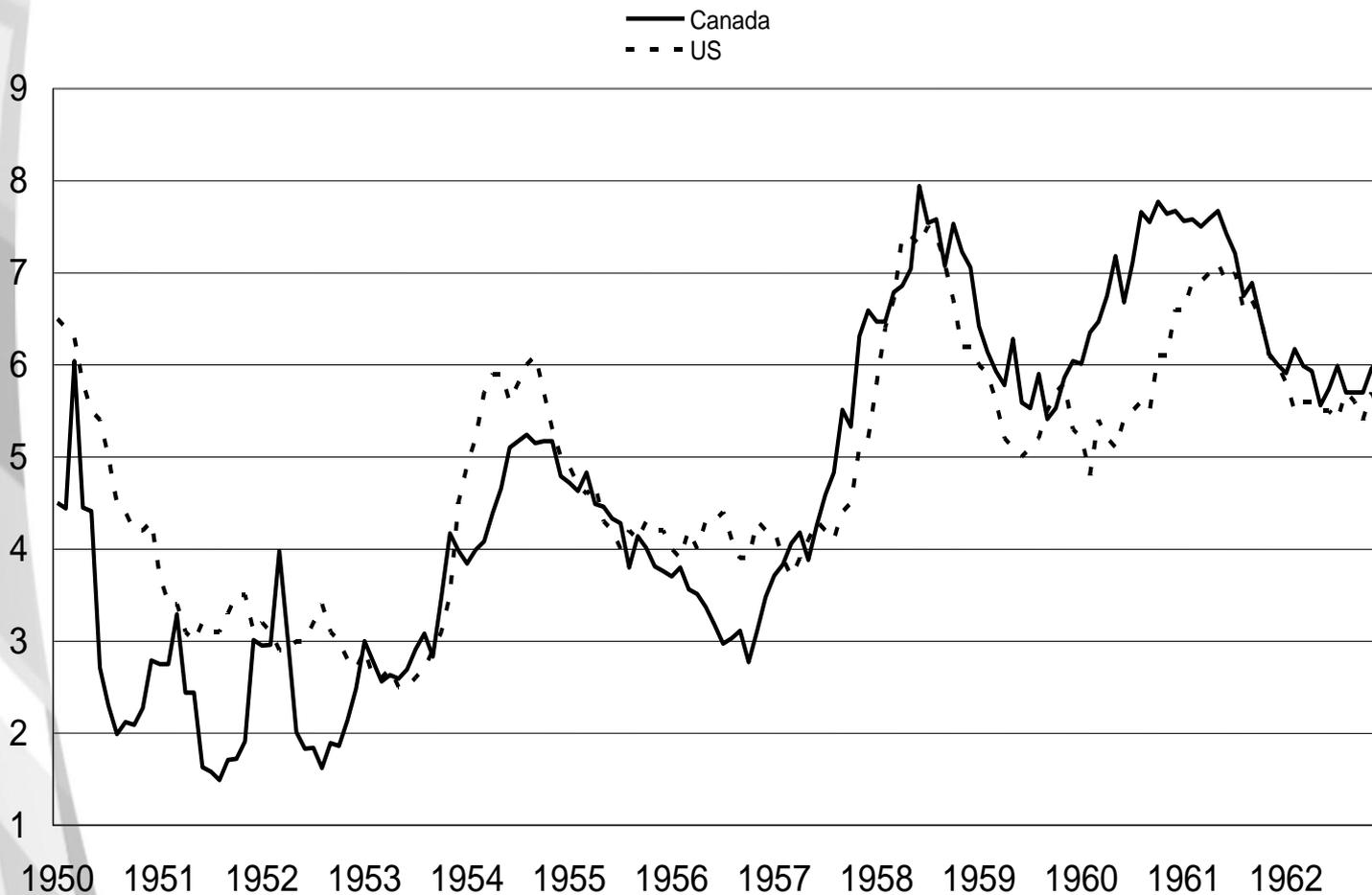
CDN\$ 1957-61: Appreciated because of policy mix

Monthly Average Noon Rates, U.S. Dollars Per Unit



Unemployment rate rose above the US: 1957-61

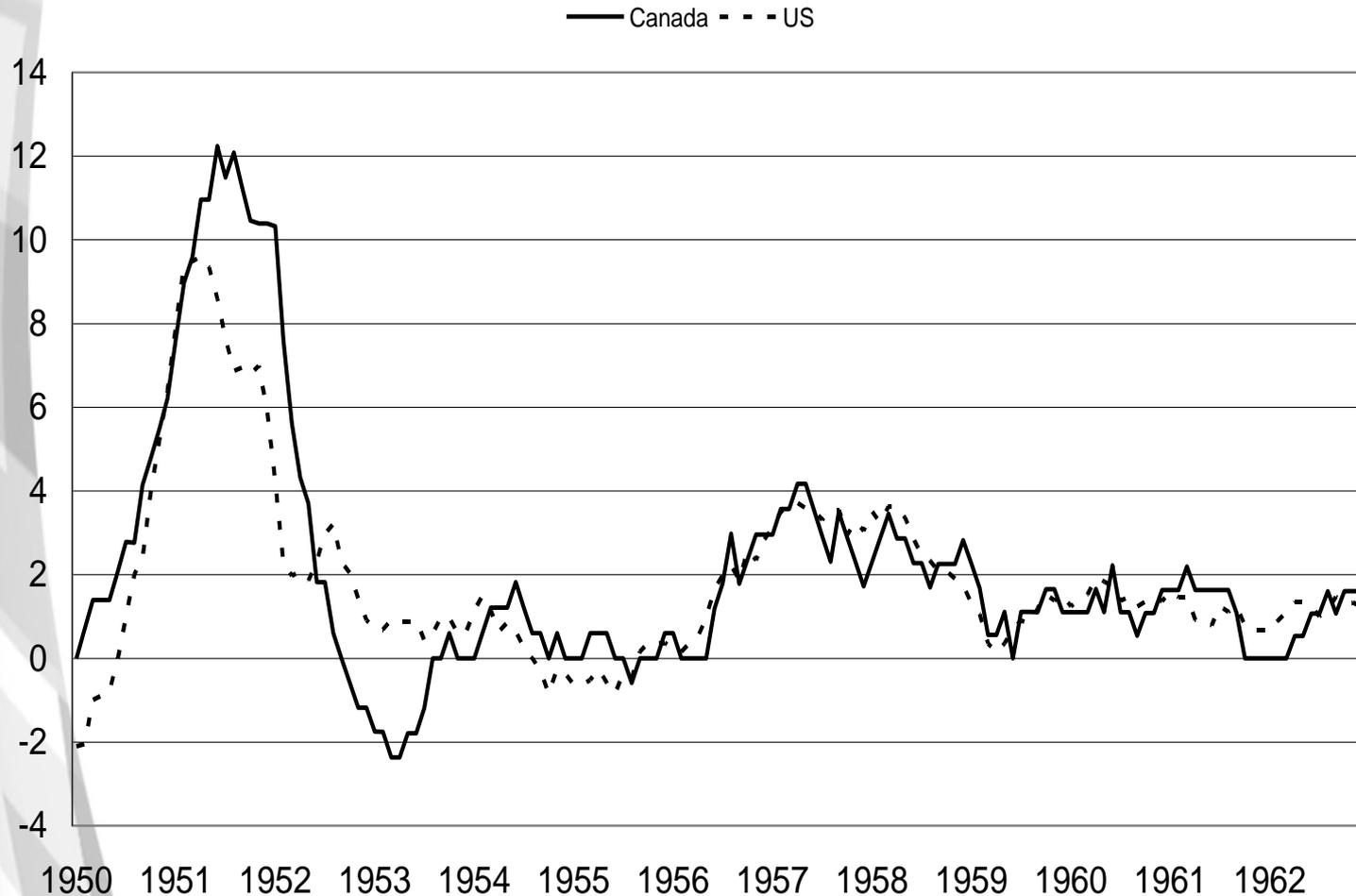
Monthly



Source: Statistics Canada and U.S. Bureau of Labor Statistics

Inflation was very stable: 1957- 61

Monthly (1997=100), Year-Over-Year Growth Rate



Source: Statistics Canada and U.S. Bureau of Labor Statistics

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-pegs 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 %)

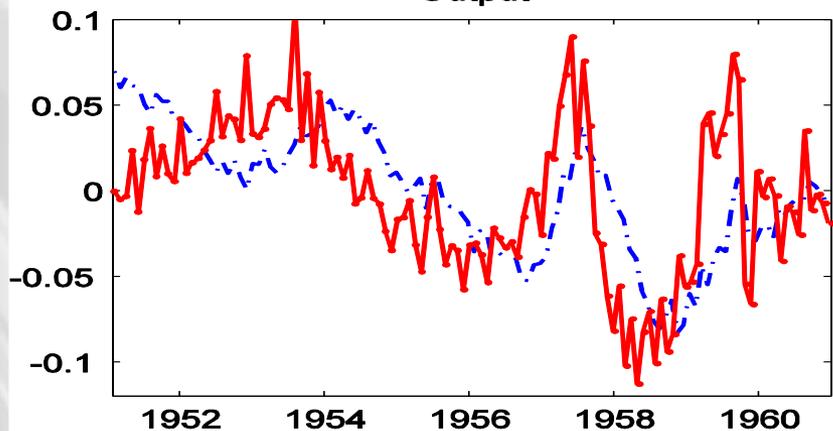
Variables	Monetary Policy (1957M1-1961M12)				Fixed NER (1952M1-1961M12)	
	Data	A Coyne MP Shocks	B Pre- Coyne MP Shocks	C No MP Shocks	Data	FNER
Output	2.54	2.16	1.75	1.50	3.51	4.41
Nominal interest rate	1.07	1.35	0.29	0.20	1.22	1.01
CPI inflation	1.02	1.52	0.95	1.65	1.77	5.24
Δ (Nominal exchange rate)	0.69	1.72	0.86	1.34	0.65	0

Data and Counterfactual Series

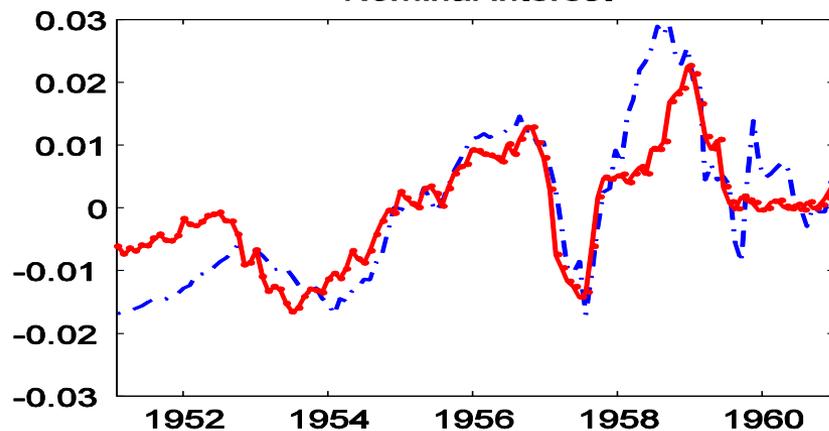
Fixed Exchange Rate

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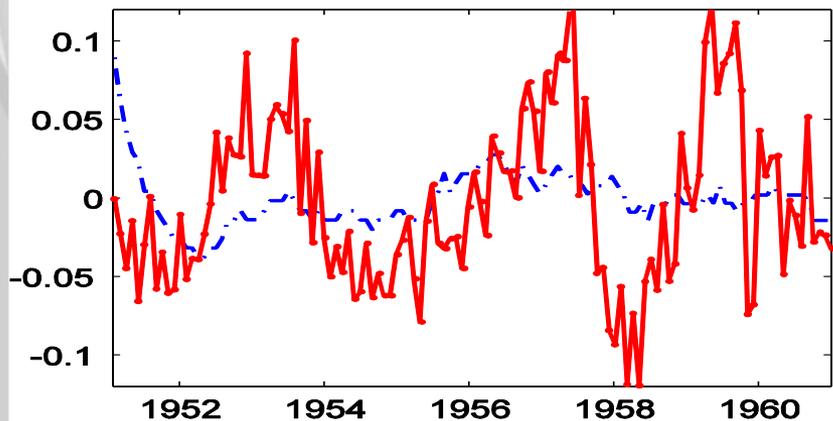
Output



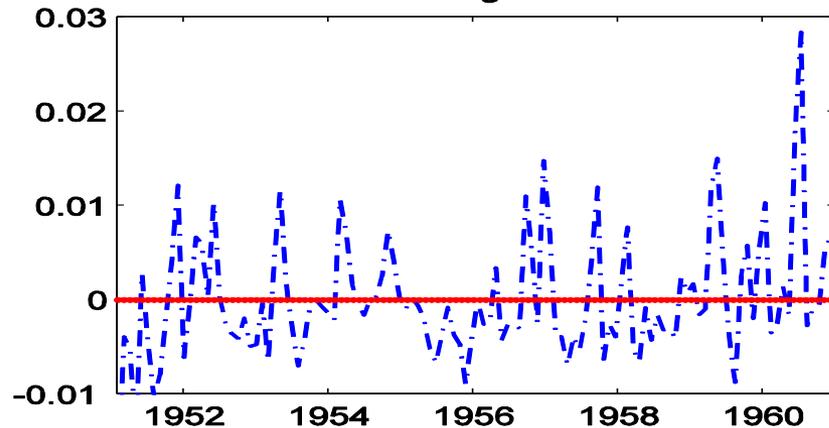
Nominal interest



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

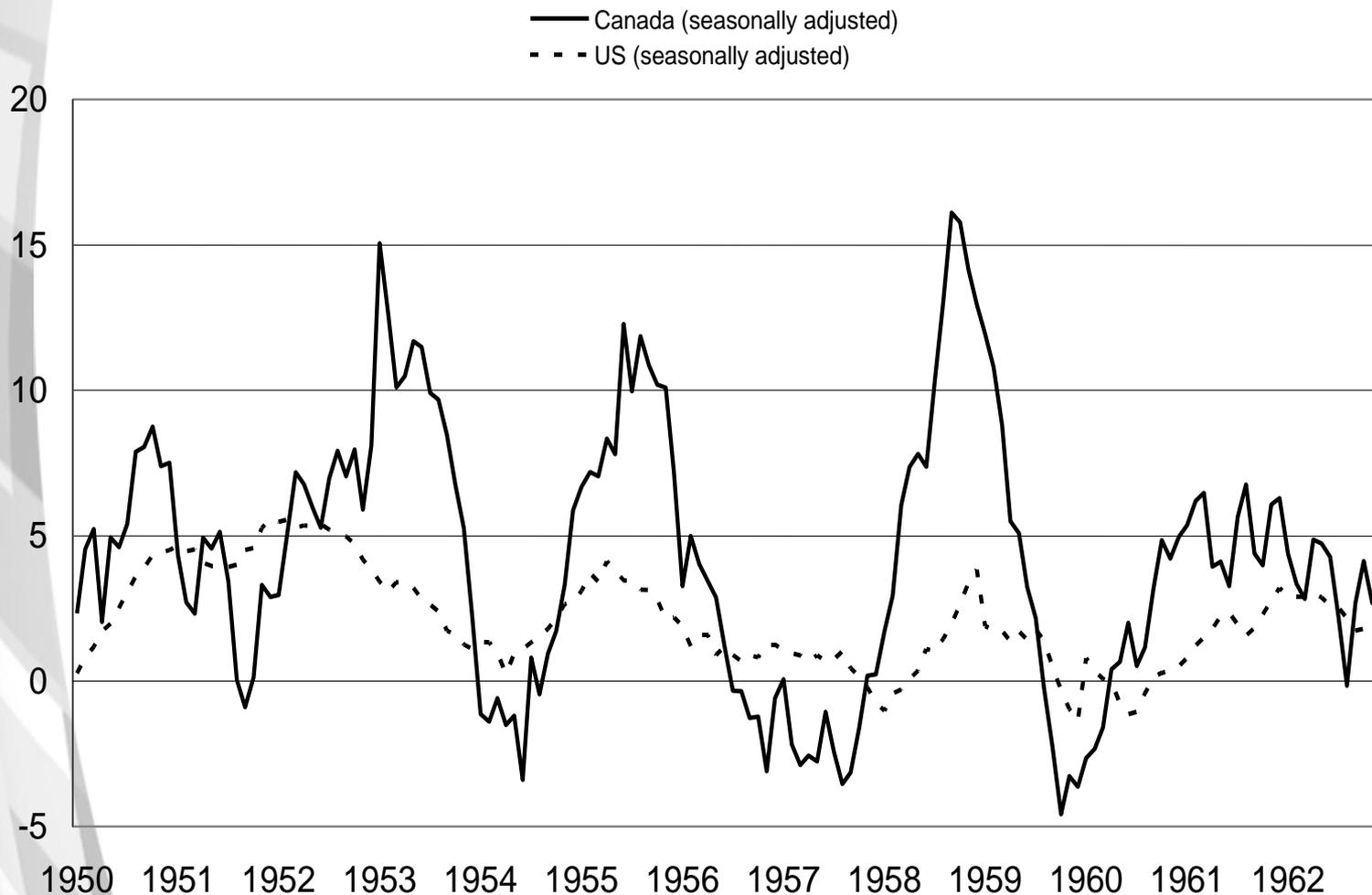
- The flexible rate performed reasonably well, when it was allowed to adjust to shocks
- When the exchange rate did move, it moved according to the fundamentals (terms of trade; interest rate spreads).
- The regime's demise was not due to the regime itself, but due to inappropriate monetary policy
- 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)

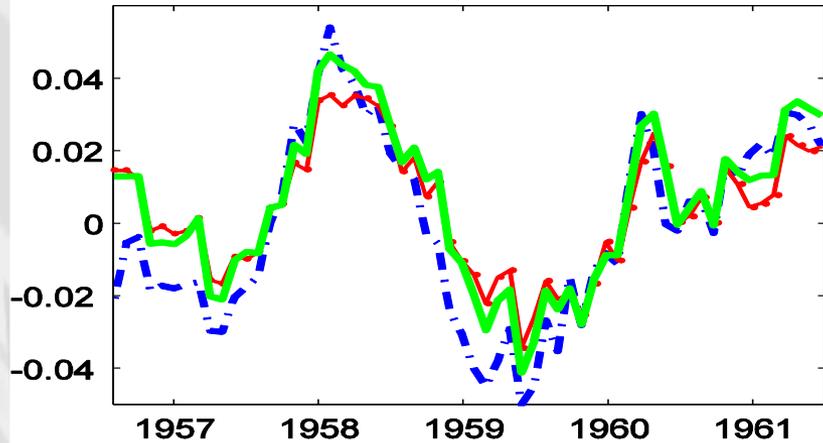
Volatilities & Autocorrelations: Data & Estimated model

Variables	Volatilities		Autocorrelations	
	Data	Model	Data	Model
A. Post-1957 period				
Output	2.54	2.76	0.90	0.89
Nominal interest rate	1.07	0.95	0.90	0.79
CPI inflation	1.02	1.25	0.84	0.67
Dif (Nom. exchange rate)	0.69	1.53	0.28	0.61
B. Entire floating period				
Output	3.68	4.07	0.95	0.94
Nominal interest rate	1.22	1.25	0.96	0.93
CPI Inflation	1.77	1.78	0.93	0.72
Dif (Nom. exchange rate)	0.65	1.85	0.33	0.68

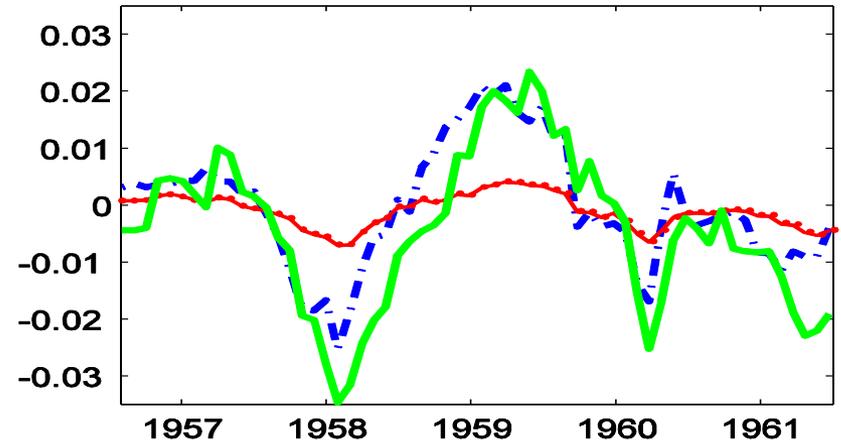
Data & Counterfactual Series

Pre-1957 Monetary Policy

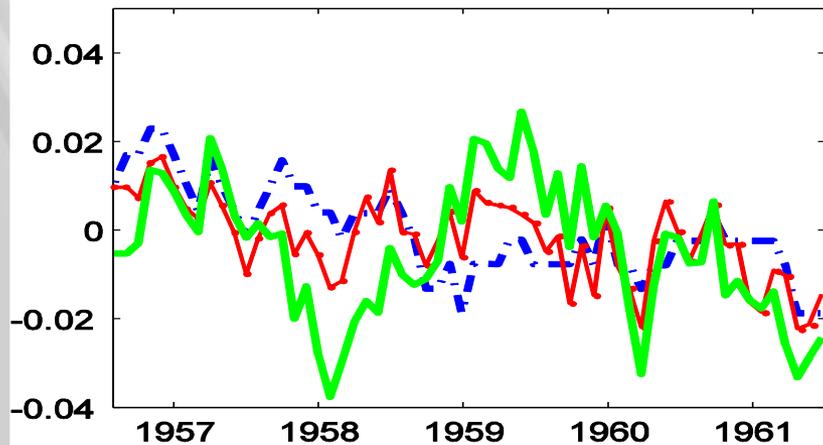
Output



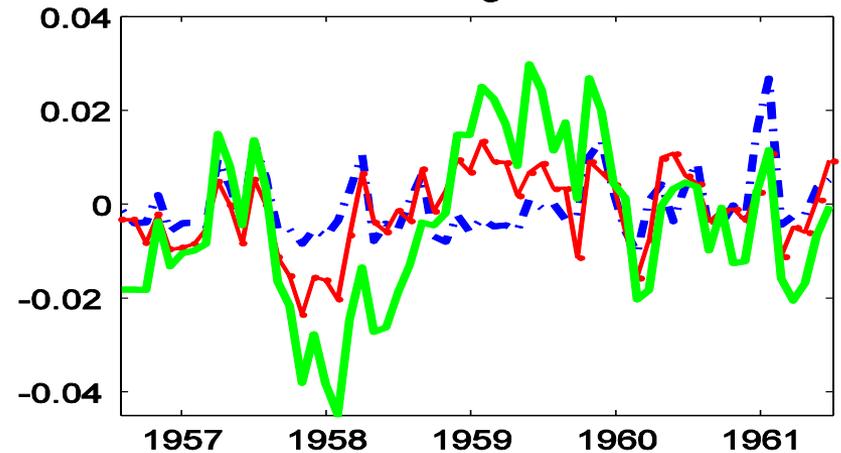
Nominal interest



Inflation



Exchange rate



--- Data — Pre-57 MP — Post-57 MP