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Michael Bordo,¹ Tamara Gomes,² and Lawrence Schembri³

¹Department of Economics
Rutgers University

²Financial Stability Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9

³International Economic Analysis Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9
lschembri@bankofcanada.ca

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Abstract

Canada played an important role in the postwar establishment of the International Monetary Fund (IMF), yet it was also the first major member to challenge the orthodoxy of the Bretton Woods par value system by abandoning it in 1950 in favour of a floating, market-determined exchange rate. Although the IMF heavily criticized this decision, Canada's trail-blazing experience demonstrated that a flexible exchange rate could operate in a stable and effective manner under a high degree of capital mobility. Equally important, it showed that monetary policy needs to be conducted differently under a flexible exchange rate and capital mobility. The remarkable stability of the dollar during the 1950s contradicted previous wisdom on floating exchange rates, which had predicted significant volatility. In May of 1962, Canada returned to the Bretton Woods system as a "prodigal son" after a period of controversial monetary policy and a failed attempt to depreciate the value of the Canadian dollar. The authors critically analyze the interaction between Canadian and IMF officials regarding Canada's exchange rate policy in view of the economic circumstances and the prevailing wisdom at the time. They also examine the impact on IMF research and policy, because the Canadian experience influenced the work of Rudolf Rhomberg as well as Robert Mundell and Marcus Fleming, resulting in the development of the Mundell–Fleming model. Thus, the Canadian experience with a floating exchange rate not only had important implications for the IMF and the Bretton Woods system, but also for macroeconomic theory and policy in open economies.

JEL classification: F41, F55, N72, E52, E58

Bank classification: Exchange rate regimes; Exchange rates; Monetary policy framework

Résumé

Le Canada a été un acteur important de la création du Fonds monétaire international (FMI) durant l'après-guerre, mais il a aussi été le premier membre influent de cette institution à faire une entorse à l'orthodoxie du système de taux de change fixes de Bretton Woods, en abandonnant ce régime en 1950 au profit d'un taux de change flottant déterminé par le marché. Même si le FMI en critiqua vivement le principe, cette expérience canadienne pionnière a démontré qu'un taux flottant pouvait être un mécanisme stable et efficace en contexte de forte mobilité des capitaux. Leçon tout aussi marquante, le Canada montra qu'un régime de changes flexibles et des capitaux mobiles nécessitaient une conduite différente de la politique monétaire. La stabilité remarquable du dollar dans les années 1950 récusait l'idée reçue selon laquelle des taux de change flottants induiraient une grande volatilité. Le Canada, en fils prodigue, réintégra le système de Bretton Woods en mai 1962 à la suite d'une politique monétaire controversée et d'une tentative avortée de

dépréciation de sa monnaie. À la lumière de la conjoncture économique et des préceptes de l'époque, les auteurs analysent d'un œil critique la relation entre les autorités canadiennes et les dirigeants du FMI relativement à la politique de change du pays. Ils examinent également l'incidence de l'expérience canadienne sur la recherche et la politique du Fonds, en particulier sur les travaux de Rudolf Rhomberg ainsi que ceux de Robert Mundell et Marcus Fleming, à qui l'on doit le modèle Mundell-Fleming. En définitive, l'expérience à laquelle s'est livré le Canada a eu des implications notables non seulement pour le FMI et le système de Bretton Woods, mais aussi pour le développement de la théorie et des politiques macroéconomiques en économie ouverte.

Classification JEL : F41, F55, N72, E52, E58

Classification de la Banque : Régimes de taux de change; Taux de change; Cadre de la politique monétaire

1 Introduction

Despite playing a critical role in establishing the International Monetary Fund (IMF), Canada was the first major member country to challenge the orthodoxy of the Bretton Woods par value system by abandoning it in September 1950 in favour of a floating, market-determined exchange rate. Canada's trail-blazing experience, which was later widely documented and studied, demonstrated that a flexible exchange rate can operate in a stable and effective manner under a high degree of capital mobility, as foreseen by Friedman (1953).^{1,2} Equally important, the Canadian experience also showed that monetary policy needs to be conducted differently under a flexible exchange rate and capital mobility.³

Canada returned to the Bretton Woods system in May 1962 as a “prodigal son,” when the Canadian floating exchange rate came under severe downward market pressure as the government's efforts to gradually depreciate the Canadian dollar failed.⁴ This exchange rate instability and resultant change in regime, were, however, not caused by an inherent flaw in the flexible rate regime per se, but by monetary policy that was insufficiently counter-cyclical in the latter half of the 1950–62 flexible rate period. In particular, the evidence indicates that the monetary policy selected did not fully incorporate its impact on the real economy via the exchange rate channel.⁵ This error in the implementation of monetary policy under a flexible rate and the conflict with fiscal policy that occurred over this period served as an inspiration for Mundell's contribution to the Mundell–Fleming model. The Canadian experience also influenced the work of J. Marcus Fleming and Rudolf Rhomberg at the IMF. Thus, the Canadian flexible rate experience in the 1950s had important implications not only for the IMF and the Bretton Woods system, but also for the development of macroeconomic theory and policy in open economies.

Our main purpose in this paper is to consider the impact on the IMF of the Canadian flexible rate experience. We critically analyze the interaction between Canadian and IMF officials regarding

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1. Friedman's “The Case for Flexible Exchange Rates” (1953) is normally viewed as his main contribution to the debate on exchange rate regimes. Friedman also contributed, however, to the discussion within Canada by participating in a 1948 radio debate with the Deputy Governor of the Bank of Canada, Donald Gordon (Friedman, Gordon, and Mackintosh 1948).
 2. After the United States, Canada was the next major Western industrialized country to remove all war-time capital and exchange controls, in December 1951.
 3. See Bordo, Dib, and Schembri (2007) for a counterfactual analysis of the conduct of monetary policy in Canada during the 1950–62 floating rate period.
 4. The authors are grateful to Jacques Polak for suggesting the “prodigal son” analogy.
 5. See Bordo, Dib, and Schembri (2007).

Canada's exchange rate policy in view of the economic circumstances and the state of economic thought at the time, and also examine the impact on IMF research and policy.

Our analysis finds that Canada's unique characteristics, particularly its dependence on commodity production and exports, and its trade and financial openness, especially relative to the United States, made it well suited as the trial case for a flexible exchange rate. Therefore, Canada's decision to float in 1950 was appropriate, given the economic circumstances of large relative (commodity) price shocks, concerns about domestic inflation, and the high mobility of capital. Indeed, the IMF viewed the Canadian floating rate as a special case and did not recommend it as an example to other countries. Despite the fact that Canada abandoned its experiment with a flexible exchange rate in 1962 as a consequence of inappropriate monetary and fiscal policies, Canada's experience sparked numerous studies and a rapid development of economic thought that strengthened the case for floating exchange rates as a viable alternative to the Bretton Woods system. Canada's experience in the 1950s foreshadowed its next exit from the Bretton Woods system in 1970, before the system's eventual collapse a few years later.⁶

This paper is organized chronologically around the two changes in Canada's exchange rate regime, in 1950 and 1962. Section 2 provides the historical narrative until 1949 that briefly reviews Canada's important contribution to the founding of the IMF; it also examines Canada's experience with exchange rate policy in the years leading up to 1949. Section 3 investigates the economic circumstances surrounding Canada's decision to float in 1950, the rationale given for it, and the IMF's reaction of reluctant acquiescence. The floating rate was partly motivated as a temporary solution to the problem of finding the appropriate par value. Initially, there was a flurry of interaction between the Canadian authorities and IMF officials, but that subsided as the flexible exchange rate quietly did the job of sheltering Canada from imported inflationary pressure. Section 4 examines the period 1952–56, which was the heyday of Canada's floating rate as it continued to be relatively stable, perhaps too stable, and the Canadian economy performed reasonably well. Consequently, the Canadian political authorities saw no reason to return to the Bretton Woods system and the IMF essentially suspended judgment and ignored Canada's flexible rate. Nonetheless, other countries, none as prominent as Canada, also started experimenting with a floating rate and the IMF began to do research on the issue. Section 5 covers the period 1957–62, which was characterized by the Bank's controversial monetary policy that was widely criticized as being insufficiently counter-cyclical. This criticism and the

6. In June 1970, Canada again was the first major industrialized country to abandon the Bretton Woods system, under virtually the same set of economic circumstances, higher commodity prices, and inflationary pressure as in September 1950. Despite sustained efforts to keep the system together, it collapsed for good in March 1973.

resultant political pressure set off a chain of events that led to the collapse of the flexible rate regime. This section examines these events, focusing on Canadian monetary policy, the interaction with fiscal policy, and the IMF-assisted return to the Bretton Woods regime. Section 6 reviews the impact of the Canadian experience on IMF research on exchange rate regimes and stabilization policy. This research began in earnest in the late 1950s and focused on exchange rate policy, capital mobility, and the assignment problem, and led to the birth of the Mundell–Fleming model. Section 7 provides some concluding remarks.

2 Historical Background until 1949

Canada's decision to float in 1950, and the IMF's reaction to it, can be explained in part by Canada's experience with exchange rate policy to that point, and Canada's prominence as a founding member of the IMF. Canada was a strong proponent of the IMF and had actively participated in the two years of negotiations leading up to the signing of the Bretton Woods agreement in July 1944. In particular, the Bank's Louis Rasminsky, the first Canadian IMF Executive Director (1946–62), played a key role in these negotiations. According to Plumptre (1977) and Muirhead (1999), Rasminsky acted as a mediator between John Maynard Keynes and Harry Dexter White in the deliberations before the Bretton Woods conference. Most notably, the Canadian plan, drafted in June 1943 by Rasminsky and others, was a variant of White's plan for a United Nations Stabilization Fund. It led to several key changes in the White plan (an increase in the Fund from \$5 billion to \$10 billion, the right of the IMF to borrow from particular members, and more flexibility in exchange rate arrangements [Horsefield 1969; Plumptre 1977, 39]). Moreover, at the Bretton Woods conference, Rasminsky served as chairman of the Committee to Draft the Articles of Agreement and as official rapporteur to the Planning Conference on matters related to the IMF (Plumptre 1977, 42). In summary, Canada's key contribution to the founding of the IMF was its service as the "honest broker" between the competing views of the United States and the United Kingdom.

Canada's decision to adopt a floating rate in 1950 was, therefore, a significant event for the IMF given Canada's stature as a prominent founding member. For Canadian officials, however, it was not a complete leap of faith, since Canada had acquired some experience with a flexible exchange rate in the 1930s. Canada left the gold standard *de facto* in 1929 and *de jure* in October 1931, when gold exports were banned. The Canadian dollar immediately depreciated to the range of US\$0.85 to US\$0.90 in 1932, but then recovered to about parity after the United States left gold in 1933. Subsequently, the Canadian dollar floated in a fairly tight range close to parity with the U.S. dollar until it was fixed with the advent of war in September 1939 (Bordo and Redish 1990; Powell 2005). Although Canada's earliest experience with a floating

exchange rate came at a time of great economic tumult across the world, there is little evidence that it made the economic depression worse. Indeed, it could be argued that the flexible rate helped accelerate the recovery, as it had done in the United Kingdom and in other countries that had left the gold standard during this period (Choudhri and Kochin 1980).

During World War II, Canada had a fixed exchange rate at US\$0.909. However, in late 1944 there was strong sentiment that the peg was unsustainable because of increasing capital inflows, rising official reserves, and higher inflationary pressure (Powell 2005, 56). Consequently, speculation about an impending revaluation mounted, despite authorities' attempts to quell the rumours. In July 1946, the dollar was revalued to parity with the U.S. dollar, just two months after the IMF began operations (Chart 1). The Canadian balance of payments was deemed to be in fundamental disequilibrium and the IMF's Executive Board approved the revaluation of the pegged rate.

Prior to World War II, Canadian imports from the United States had been largely financed by Canadian exports to the United Kingdom. As the reconstruction of Europe dragged on, however, Europe, including the United Kingdom, soon lacked the means to pay for its imports. Consequently, European countries imposed import restrictions against the "dollar area" group of countries, which included Canada.⁷ As a result of these restrictions on Canadian exports and growing imports from the United States, Canadian reserves started declining soon after the revaluation in 1946, causing deflationary pressure (Chart 2).

In an effort to staunch the outflow of U.S. dollars, Canada imposed import restrictions and controls.⁸ Despite these measures, pressure on the peg continued to mount. This pressure surfaced in the unofficial market for Canadian dollars that had been established in New York to avoid wartime exchange controls. In 1946, the Canadian dollar was trading at a discount to the official rate of between 3.5 and 4 per cent; by 1948, the discount had reached 9 per cent. Although the authorities appeared to be unconcerned by the growing discount, it only fuelled speculation that the dollar was overvalued.

By 1949, the idea of floating the dollar was viewed as a viable solution to Canada's dilemma of selecting a pegged nominal rate consistent with external balance. Recognizing, however, that such a policy could be viewed as a serious breach of IMF protocol, consideration was given by Bank of Canada officials (Coyne 1949) to the alternative of incorporating a flexible exchange

7. See, for example, Skadden 1947.

8. Friedman, Gordon, and Mackintosh (1948) discuss this problem.

rate into an exchange control system in which the Bank would intervene only to prevent large fluctuations.⁹

In 1949, the British pound was devalued by over 30 per cent. Other sterling area countries, as well as many Western European countries, also devalued their currencies by sizable amounts (Powell 2005). Canada was one of them, and on 20 September the dollar was lowered to US\$0.909, its wartime level. Although this was a substantive devaluation, it was largely anticipated and generally considered necessary to avoid severe contractionary pressure on the Canadian economy. As with the revaluation in 1946, this devaluation was approved by the IMF's Executive Board after consultation between Canadian officials and IMF staff.

3 Canada's Decision to Float and the IMF's Reaction

Canada's second experiment with a flexible exchange rate, beginning in 1950, was much more significant than the first one in the 1930s, not only because Canada went it alone,¹⁰ but also because floating meant departing from the rules of the Bretton Woods par value system. Thus, Canada's 1950 float was seen as a breaking, or at least a flaunting, of the rules by an important IMF member. Consequently, serious concerns were expressed that other member countries might follow suit and jeopardize the existence of the newly founded system and, possibly, the IMF.

The Canadian government decided to allow its currency to float in October 1950 after two unsuccessful attempts to establish a sustainable Bretton Woods par value. As noted earlier, in July 1946 the Canadian dollar was revalued from a wartime discount at U.S.\$0.909 to parity, and, in September 1949, Canada devalued its currency back to the pre-July 1946 level. After this devaluation, international economic conditions improved and the beginning of the Korean War in June 1950 contributed to a strong economic expansion in the United States and Canada. Demand for commodities and other Canadian exports increased and the wartime discounted level proved to be too low. Foreign direct investment into the Canadian resource sector also increased. The rise in capital inflows began in 1949 and accelerated in 1950, which led to a significant increase in international reserves and the money supply, especially in the third quarter of 1950, when reserves grew by 43 per cent (Charts 2, 3, and 4). These accelerating inflows were likely speculative, driven by the expectation that the Canadian dollar would again be revalued as it had

9. It was also suggested that the Bank of Canada use open market operations, instead, to sterilize the impact of the reserve loss on the Canadian money supply and stem the deflationary pressure (Lawson 1949).

10. Belgium's proposal to float its exchange rate was approved by the IMF's Executive Board on 19 September, but two days later Belgian officials decided to devalue, instead, which was readily approved by the Board (Horsefield 1969).

been in 1946. The Canadian authorities were very concerned about the inflationary pressure, but had few options available to manage it. Moreover, they did not want to pick another par value, only to find out, as in 1946 and 1949, that it could not be easily maintained. The decision to float was presented as a temporary move, presumably with a return to the par value system once a new “fundamental equilibrium” had been reached.

By the time Canada had decided to adopt a flexible exchange rate in September 1950, the IMF had already faced proposals for floating rates from Belgium and Peru, but the Canadian proposal was the first from a major trading country, and IMF officials feared that this would disrupt the international economy and possibly unsettle the newly founded Bretton Woods par value system. IMF policy until this point was to permit the adoption of a flexible rate as a temporary measure, but the staff usually advocated instead the use of exchange or capital controls and other restrictions, as well as reserve sterilization, to maintain the fixed par value. Although the elimination of controls was seen to be one of the goals of the IMF, fluctuating exchange rates were considered to be highly unstable. Controls were viewed as the lesser of the two evils, since they would limit negative spillover effects on other members. Canadian officials, however, were reluctant to impose controls on capital inflows or issue more debt to sterilize their impact on the domestic money supply.

Furthermore, given Canada’s and Louis Rasminsky’s intimate involvement in the establishment of the IMF, Canada’s proposed exit from the par value system was seen as a sign that the IMF was incapable of achieving exchange rate stability, one of its primary goals. While some academic economists, most notably Meade (1951) and Friedman (1953), advocated the use of fluctuating rates, officials at the IMF would accept only their temporary use. Given that the par values had been established in 1944 in some haste, and that the postwar macroeconomic conditions were generally much more stable than those of the interwar period, the IMF permitted, without penalty, the use of a market-determined flexible rate as a means of helping to determine a sustainable par value. In addition, the IMF had left the wording of the Articles deliberately vague: fluctuating rates were permitted to correct “fundamental disequilibria” in balance-of-payments accounts, a term that was never explicitly defined, leaving the door open for individual interpretation by member countries.

On 9 September 1950, Rasminsky and the Bank of Canada’s Governor, Graham Towers, met with the IMF Managing Director, Camille Gutt, to discuss the sharp rise in capital inflows. In light of the recent difficulties that Canadian officials had encountered in finding a sustainable level for the Canadian dollar, Rasminsky and Towers put Gutt “on notice” that the Canadian government was considering floating the dollar. When Gutt reminded Rasminsky and Towers of

Canadian opposition to the Belgian proposal to free the Belgian exchange rate in the previous year, the Canadians noted that the opposition had been to an explicit approval by the IMF and that Canada, accordingly, would not seek formal IMF approval for its action.

On 29 September, Rasminsky attended a meeting with senior IMF staff. He noted that, while the staff were hostile to the decision, they did not put forward a viable alternative. Additionally, senior members of the staff were “deeply resentful of what they regarded as the cavalier treatment by Canada of the IMF in giving it so little notice and presenting the decision as a fait accompli, rather than as a request,” although Rasminsky maintained that key officials knew that the Managing Director had been given three weeks warning (Rasminsky 1950).

An IMF staff study concluded that Canada clearly needed to take action to curb inflationary pressures arising from the massive capital inflow. Three possible courses of action were cited: sterilization, capital controls, and/or revaluation. While staff acknowledged that neither of the first two options would be easy, it was concluded that these risks posed less of a threat “both to Canada and to the IMF in general” than a fluctuating exchange rate (IMF European and North American Department 1950).

At the IMF’s Executive Board Meeting on 30 September, Rasminsky informed the Executive Directors (EDs) of Canada’s decision. He stated that the Minister of Finance had considered the measures proposed by the IMF staff and had rejected them as inadequate for the Canadian economy. Since allowing the exchange rate to fluctuate would entail non-compliance with the IMF’s Articles of Agreement, Canada was not seeking the formal approval of the IMF (IMF Executive Board 1950).

The IMF Research Director, Edward Bernstein, felt that the exchange rate was being used as an instrument of monetary policy. He believed that the problem was persistent and that the temporary solution of floating the exchange rate would not address the underlying fundamental disequilibrium; he advocated the use of capital controls.

One of the main objections to the Canadian proposal was the impact it would have on the IMF as a whole. The Canadian proposal could lead to a slippery slope, since other member countries might soon follow suit. Rasminsky countered that the paramount objective of the IMF was the external stability of its members, and that freeing the exchange rate would help the Canadian economy to achieve this objective.

Many EDs found Rasminsky’s arguments persuasive. The American ED, Frank Southard, stated that there was “little to be lost and much to be gained” by the proposal and that a floating

Canadian dollar “was preferable to parity” (Rasminsky 1950). George Bolton, the U.K. ED, stated that, although he feared the difficulties that a fluctuating rate could entail, he supported the Canadian proposal because he knew that the decision had been reached after much consideration of the alternatives.

Gutt did not agree with the positions taken by these EDs, since they essentially amounted to a negation of the principles of the IMF; he believed that Canada was acting irresponsibly towards other members. Careful attention was paid to the wording of the final IMF decision, although Rasminsky felt that the staff’s proposed language was less favourable than that used in the case of Belgium a year earlier.

On 30 September 1950, the Minister of Finance, Douglas Abbott, announced that, due to the “growing tide” of capital inflows into Canada and the difficulty in determining a new par value, the Canadian government would free the exchange rate and that all remaining import and quota restrictions would be removed as of 2 January 1951 (Office of the Minister of Finance 1950). Abbott stressed that the decision was a temporary measure to permit the exchange rate to find its equilibrium level, and that the government would remain in consultation with the IMF and ultimately establish a new par value. The IMF’s press release simply recognized the “exigencies of the situation” and noted that it would remain in consultation with the hopes of re-establishing a par value “as soon as circumstances warrant[ed]” (Horsefield 1969).¹¹

Two IMF officials came to Ottawa in October 1950 in order to receive a stronger commitment from the Canadian government to return to a par value exchange rate. They returned to Washington, according to A. F. W. Plumptre, of the Canadian External Affairs Department, “wondering whether Canada will ever again be a member of the Fund in good standing. They regard this [Canada’s decision to float] as a severe blow – perhaps even a mortal blow to the Fund” (Muirhead 1999, 143). Rasminsky and Governor Towers advised the Finance Minister that the Canadian dollar should not return to a fixed parity until there was further liberalization of controls to achieve convertibility and non-discrimination with a large number of countries (Muirhead 1999, 143). Canada’s unusually open position with the United States made the

¹¹ Following the announcement, a newspaper article quoted “a number of experts” at the IMF as saying that the Canadian float “involved such great disadvantages [sic] that it should be avoided” (Nichols 1950). It further maintained that not only had the Canadian government given insufficient warning, but that Minister Abbott had informed the U.S. Treasury of the proposed action only on the day the government abandoned the par value. Rasminsky sent a copy of this article to Gutt, expressing his concern that it gave the impression that the IMF only reluctantly acquiesced to the decision. Suspecting that the (incorrect) information came from sources inside the IMF, he urged Gutt to deal with this matter internally.

Canadian economy vulnerable to U.S. economic shocks, and those could be most easily transmitted via a fixed exchange rate.

Goforth (1950) noted a divergence of opinion between the U.S. and U.K. Treasuries. The Sterling Bloc representatives “strongly opposed” floating rates, while the U.S. Treasury favoured the decision and found the actions legitimate within the spirit of the Articles. It was “hoped and believed” that other IMF members would not follow Canada’s example, “causing chaos on the exchanges.”

Canada’s decision ignited debate not only among the EDs, but also in the IMF Research Department. A departmental memorandum maintained that reserve adjustment was the ideal instrument to correct temporary balance-of-payments deficits or surpluses. The only solution to a sustained external imbalance, however, was a devaluation of the exchange rate. In contrast, fluctuating rates could provide stabilizing effects by serving as an automatic adjuster to economic conditions (IMF Research Department 1951).

The memo also noted that, while a system of pegged exchange rates had been adopted to help avoid the unstable economic conditions that prevailed after World War I, pegged rates often hampered the performance of individual economies, notably those of Canada and the United Kingdom. It suggested that the IMF may consider whether fluctuating rates were more effective in resolving external imbalances, especially in situations where the exchange rate was not fixed at a rate appropriate to the underlying fundamentals of an economy. Nonetheless, it is important to emphasize that the IMF Research Department viewed a flexible rate as a promising temporary solution to balance-of-payments difficulties; that is, once stability had been restored, a country should return to a pegged rate.

As one of the chief architects and proponents of the IMF, Rasminsky faced a difficult task in responding to the ongoing criticisms from the EDs and IMF staff. He argued that the adoption of a flexible rate allowed Canada to fulfill some of the IMF’s primary objectives, such as the removal of import restrictions and the stabilization of capital flows (IMF Executive Board 1951a). In addition, he stated that, due to “general world uncertainties,” Canada would not seek to establish a new par value at this time (IMF Executive Board 1951b).

Most EDs continued to be supportive of the decision. Jean de Largentaye, the ED from France, concluded that, for a major trading economy, an improper fixed rate represented a continuously misaligned rate, and that “the rules of the IMF should not be a further obstacle preventing members from adopting fluctuating rates, if they wish to do so.” He met with opposition from

several other EDs, who made a distinction between fluctuating rates in theory, which may be justified, and those in practice, where they could prove to be too volatile. The temporary nature of the fluctuating rate was made explicit and viewed, by some, to be a privilege; it was further suggested that perhaps the IMF had not been “tough enough” with those members seen to be abusing it (Rasminsky 1951). The Belgian ED, Ernest de Selliers, stated that the only test the IMF should apply in the case of fluctuating rates is whether it was harming other members. It was suggested that, if a country did not eventually fix a new par value, the IMF should pursue the case, but that the IMF’s arguments should be “based on both substance and principle” (Rasminsky 1951). George Bolton, the U.K. ED, took a harder line, concluding that the issue came down to the survival of the IMF. Ultimately, although Canada was found to be in technical violation of the Articles, the Executive Board recommended that the IMF refrain from imposing penalties.

As 1951 progressed, the IMF became increasingly concerned that Canada showed no signs of returning to the Bretton Woods system. It feared that other small countries could follow Canada’s lead and that the IMF would be forced to offer “no objection,” as it had to Canada, thereby threatening the stability of the international monetary system and the existence of the IMF. Consequently, IMF officials initiated discussions with Canadian officials, and in September 1951, Ivar Rooth (the IMF’s new Managing Director) met with Finance Minister Abbott to informally discuss the situation at the IMF Governors’ Meeting. Abbott later indicated that Canada was unable to return to a fixed par while other countries continued their uncertain exchange control policies.

The most comprehensive statement of the IMF’s position can be found in their 1951 *Annual Report*. The report first noted that allowing market forces to determine the equilibrium exchange rate was “a simple solution for a very complex problem,” and that the appropriate rate would depend upon the policies followed by the country concerned and by other countries with which it had important economic ties. The annual report also stated that the par value system was “one of stability of rates rather than rigidity” and that the Articles were sufficiently broad to permit any necessary and justifiable changes in par values; moreover, any assessment of the use of fluctuating rates should be in the interests of the IMF members as a whole. The report concluded that, while fluctuating exchange rates were not a “satisfactory alternative” to the par value system, their temporary use may be desirable when “important uncertainties” exist. In such a situation, if the IMF found that the arguments were persuasive, it could accept them although it could not give explicit approval to the action. The desired temporary nature of a floating regime was again stressed, noting that the members in question would be required to remain in

consultation with the IMF, with a goal of re-establishing a new par value as soon as circumstances permitted. If the IMF found that the justification for the action of the member no longer existed, the IMF must state this explicitly and then decide whether any action under the Articles would be necessary or desirable.

The discussion in the 1951 *Annual Report* on fluctuating rates was summarized as follows: “The par value system is based on lessons learned from experience. There is ample evidence that it continues to be supported by the members of the IMF. Exceptions to it can be justified only under special circumstances and for temporary periods. The economic and financial judgment of the IMF in such cases must be tempered by recognition of its responsibilities in the wider field of international relations.” With respect to Canada’s decision, the report noted that the objective of the Canadian action differed from previous exchange rate adjustments taken by most other countries, since Canada’s action was taken to address an excessive capital inflow, rather than to address a current account deficit.

Chart 1 shows that, over the next 18 months, the Canadian dollar appreciated markedly from US\$0.909 to US\$1.02, a 12 per cent increase. This rapid appreciation was largely due to the increased U.S. demand for Canadian exports during the Korean War expansion, and to substantial capital inflows, largely in the form of foreign direct investment, from the United States to develop Canada’s natural resources (Yeager 1976, 544) as shown in Chart 3. Canada experienced rapid real growth over the duration of the war, June 1950 to July 1953, which put upward pressure on Canadian interest rates and provided further support for the appreciating currency.

4 1952–56: The Stability of the Canadian Float – The IMF Suspends Judgment

In the years immediately after Canada’s decision to float the dollar, the IMF’s initial fears of undue repercussions from Canada’s exit from the Bretton Woods system were not realized. Indeed, the Canadian dollar was remarkably stable; it fluctuated in a narrow range of roughly 5 cents (US) over the years 1952–56 (Chart 1). This stability flew in the face of much conventional wisdom that flexible exchange rates were inherently unstable because they were driven by expectations, and thus served to fuel the debate on fluctuating rates, from a theoretical and a policy perspective, inside and outside the IMF. Moreover, the floating Canadian dollar was not inconsistent with internal and external stability. The inflation rate soon stabilized at a low level after the initial burst of inflationary pressure due to the monetary expansion of 1950, output

grew rapidly (apart from the brief post-Korean War slowdown), and official reserves levels stabilized (Charts 2, 5, 6, 7, and 8).

By September 1952, the Canadian dollar had peaked at US\$1.04, largely supported by a substantial net inflow of long-term capital. The IMF's 1952 *Annual Report* contained a brief description of the performance of the Canadian dollar, noting that all remaining exchange controls were eliminated and that the stability of the Canadian dollar required minimal intervention by the authorities. In a statement in the Budget Speech of 1953, the Minister of Finance responded to rumours that official intervention was responsible for this unanticipated stability, maintaining that the government intervened only to prevent "excessive short-run fluctuations" (Porter Commission 1962).

Discussion of exchange rate regimes was not limited to North America; many Europeans were also engaged in the fixed-versus-flexible debate; specifically, favourable views of fluctuating rates were growing in the United Kingdom. In 1953, the IMF's Rooth arranged for an informal discussion with officials from most Western European countries, the United States, and Canada. The opinions expressed were consistent with the IMF's 1952 *Annual Report of the Executive Directors*, which recognized the potential value of a fluctuating rate as a transitional device, but remained in favour of fixed rates. However, when the discussion turned to dealing with countries contravening the Articles in this respect, the U.S. ED, Frank Southard, noted that "he had no illusions about the extent to which the Canadians would be influenced by IMF views," stating that they would return to a fixed rate only when they deemed it was in their best interest. With regards to the legal status of countries such as Canada, he stated that it was "probably an error" that the Articles did not allow the IMF to approve officially the use of fluctuating rates for special cases. When asked to speak to Canada's experience thus far, Rasminsky noted that Canada was a special case and he could not "safely generalize" this experience to other countries (Rasminsky 1953). As noted earlier, Rasminsky likely felt that Canada was special because of its open trade and financial channels to the United States in a world in which most countries had not yet adopted current and capital account convertibility.

In reviewing Canada's experience with the float, the IMF's 1953 *Annual Report* highlighted that the Canadian dollar had remained relatively stable despite large fluctuations in capital flows, conceding that movements in Canada's floating rate had been "equilibrating rather than disturbing."

As noted, the Canadian and U.S. economies experienced a recession over the second half of 1953 and the first half of 1954. However, the spillover to Canada from the United States was mitigated

by some weakness in the Canadian dollar. There were suggestions from the press that the decline of the exchange rate over the past year had resulted from official intervention. When the IMF sent a technical mission to Canada in late 1955 to investigate these rumours, Rasminsky denied them. He maintained that the decline was due to three factors: the narrowing of the spread between long-term interest rates in Canada and the United States, which had led to a decline in long-term capital inflow; smaller foreign purchases of Canadian stocks; and a worsening of the current account due to lower exports to the United States (Dirks 1955).

Over this period, the Bank of Canada responded somewhat sluggishly to spillovers from the U.S. recession with looser monetary policy, but began to tighten soon thereafter. During this time, Canada was also taking steps to develop an active money market, making monetary policy easier to implement via a short-term interest rate.

In 1956, the IMF began openly supporting programs of fluctuating rates (when coupled with exchange reforms and stabilization plans) in countries such as Bolivia, Chile, Paraguay, and Argentina (de Vries and Horsefield 1969).¹² In 1958, Managing Director Per Jacobsson stated that, when the IMF supported a fluctuating rate, it had chosen the “lesser evil” versus systems of multiple rates or stringent restrictions in order to stabilize a fixed exchange rate (Jacobsson 1964a).

Although 1952–56 was a period of economic growth and stability in Canada, including exchange rate stability, the following years would witness monetary and fiscal policy errors that reflected a lack of understanding of how macroeconomic policy should be conducted under a flexible rate and capital mobility. These policy errors would eventually undermine the stability of the flexible exchange rate and lead to a collapse of this regime.

5 1957–62: The Prodigal Son Returns

The Canadian business cycle that began with the post-Korean war recession followed by the investment-led boom of the years 1955–56 indicated that Canadian monetary policy was insufficiently counter-cyclical over both phases of the cycle (Bordo, Dib, and Schembri 2007). Consequently, the ability of the exchange rate to play a stabilizing role was hindered. This misunderstanding of the role of a flexible exchange rate as an adjustment mechanism in an open

12. However, by 1953, enough member countries were already using flexible exchange rates that the IMF drew up rules for official transactions in currencies with fluctuating exchange rates (van Campenhout 1953, 1954).

economy had important consequences for the 1957–62 period, especially as the cyclical movements became more pronounced.

Most notably, in 1957, after two years of relatively robust growth, the Canadian economy decelerated rapidly, due in part to slowing U.S. growth, and the unemployment rate rose from 3 to 8 per cent by the spring of 1958 (Charts 6 and 7). During this period, the Bank of Canada was criticized for placing too much emphasis on inflation by continuing to tighten monetary policy while the economy was slowing; the money supply contracted, the Bank of Canada's short-term policy rate (the Bank Rate) increased, and the Canadian dollar appreciated to US\$1.06 (Charts 8, 9, and 1).

Both the Canadian and U.S. economies recovered rapidly in the second half of 1958 as interest rates were cut sharply in both countries, primarily to help facilitate the rollover of government debt issued to finance World War II expenditures. However, in 1959, as the Canadian economic activity increased, the Bank of Canada again aggressively sought to contain anticipated inflationary pressure: the Bank Rate rose by more than 500 basis points in 18 months, from mid-1958 to the end of 1959, and again the money supply contracted (Charts 8 and 9). Consequently, the Canada–U.S. short-term interest differential swelled to over 150 basis points, well above historic norms (Chart 10), and the Canadian dollar remained elevated. The IMF attributed the strength of the exchange rate during 1959 to strong demand for Canadian dollars for both long- and short-term investment purposes, offsetting the deterioration in Canada's current account balance. There was growing concern, however, that the strength of the dollar, which continued to float at a premium to the U.S. dollar, was eroding Canada's competitiveness as the Canadian unemployment rate rose well above the U.S. level in 1960 (Chart 7). As the Canadian economy slowed, political pressure increased and the federal government responded with expansionary fiscal budgets in 1959 and 1960.

James Coyne, the Governor of the Bank of Canada, resisted the political pressure to ease monetary policy. He believed that Canadians desired an excessive and unsustainable rate of growth and was too dependent on foreign borrowing to finance domestic consumption and investment (Granatstein 1986; Powell forthcoming). Coyne maintained that his primary concern was the ongoing inflationary pressure and the only solution was tighter monetary policy (Thiessen 2000).

On 20 December 1960, while introducing a supplementary budget, Finance Minister Donald Fleming declared the government's intention to moderate the capital inflow and lower the value of the dollar (Plumptre 1977). With an upcoming election, reducing unemployment was a

priority and some action to depreciate the Canadian dollar was seen as essential. Political pressure on the government to take action on monetary policy mounted. This pressure, in conjunction with other policy differences between Governor Coyne and the government, forced the government to declare vacant the position of Governor of the Bank of Canada (Powell forthcoming). Mr. Coyne subsequently decided to resign.

Rasminsky succeeded Coyne as Governor on 24 July 1961. As a condition of his appointment, Rasminsky had stressed that the government's powers regarding monetary policy be clearly defined (the Bank of Canada Act was amended in 1967), and he underlined the need for co-operation between the government and the Bank (IMF Western Hemisphere Department and the Exchange Restrictions Department 1961).

In 1961, the IMF staff performed an assessment of Canada's experience with fluctuating exchange rates to that point; they concluded that the first half of Canada's experience with the fluctuating rate was largely successful, but the latter half was disappointing owing to misguided policies. The IMF staff argued that the Canadian authorities had not considered the exchange rate transmission mechanism when formulating domestic monetary and fiscal policies. According to the staff, this exclusion of the external sector in shaping Canadian policies was fostered by the nature of the fluctuating rate, which was market rather than policy determined (IMF Western Hemisphere Department 1961). They urged close consultation between Canada and the IMF, and the re-establishment of an effective par value "as soon as circumstances warrant."

At the subsequent IMF Executive Board meeting, Rasminsky stated that the staff paper was a "highly competent and imaginative piece of work," but nevertheless he held some reservations. Rasminsky conceded that the fluctuating exchange rate arrangement had not worked well for Canada in the last few years, but argued that the capital movements, and not misguided policies, were the real source of difficulty (IMF Executive Board 1961). He argued that efforts directed toward managing capital inflows were not only in Canada's own interests, but in the interest of the world community, more generally.

Rasminsky outlined two alternatives considered by the Canadian authorities: first, to adopt restrictive policies and controls to relieve current and capital account pressures, perhaps combined with a fixed exchange rate, and second, to try to depreciate the Canadian dollar with foreign exchange market intervention and to boost growth with expansionary fiscal policy via budget deficits. The Canadian government chose the latter option. Several EDs, however, expressed uneasiness about this policy choice and warned of the dangers of competitive

depreciation. Rasminsky emphasized that the goal of a managed depreciation was a lower current account deficit and reduced capital inflows.

The EDs also asked that Canada consider the interests of other members in formulating its policies. In particular, the U.S. ED believed that the par value system was an essential element in the world monetary system, and was not convinced that Canada represented a unique case. Several EDs stressed that it should be one of the pressing aims of the Canadian authorities to arrive at a stable exchange rate. Rasminsky countered that the difficulty in establishing a new par value was in determining a rate that would be appropriate for both the current account and capital accounts.

During 1961 Article VIII consultations, the IMF team was critical of Canada's economic circumstances. They argued that, in hindsight, it might have been preferable for Canada to have established a lower par value during the 1951–57 period than to have let the exchange rate float. The Canadian authorities countered this criticism by again emphasizing Canada's uniqueness and the difficulty in choosing an appropriate pegged rate. Nonetheless, the IMF staff noted that the Canadians were "no longer enamored" of the fluctuating rate, but were reluctant to repeg the dollar; they preferred to peg the Canadian dollar within wider bands of fluctuation than currently permitted by the IMF. While IMF staff argued that policy mistakes were, in part, responsible for Canada's weak performance, Rasminsky maintained that the economy had been influenced by "factors not amenable to control through policy action" (IMF 1962b). Due to the large budget deficit, the IMF staff did not recommend the immediate establishment of a new par value, but suggested using official reserves to engage in market experimentation in order to help identify an exchange rate appropriate for long-run equilibrium (IMF 1962a).

At the Executive Board meeting in February 1962, many EDs continued to question whether Canada still had a case for continued non-compliance with the IMF Articles (de Vries and Horsefield 1969). The EDs concluded that Canada's monetary policy had been difficult to implement successfully under a floating rate. Moreover, the experience revealed another danger of flexible rates: authorities tended to ignore the external effects of their domestic policies because, unlike the fixed rate, the flexible rate gave them a false sense of security by depriving them of the symptoms of movements in reserves (*Economist* 1962).

In early April 1962, the government reaffirmed its intention not to set a fixed rate through any action which might prove premature or impossible to sustain. Nonetheless, at the same time, the government was undertaking concerted foreign exchange market intervention to lower the value of the Canadian dollar. By the end of April, this intervention activity had sparked a run on the

Canadian dollar; to halt the free fall, the government was forced on 2 May 1962 to repeg the exchange rate at US\$0.925. The Finance Minister maintained that the action had been precipitated by the speculative pressures and by the IMF's desire that Canada re-establish a par value. He stated that, while fluctuating rates had certain advantages, the government was more concerned with giving "firm assurance of [the] stability" of the exchange rate (Office of the Minister of Finance 1962).

During the 2 May Executive Board meeting to discuss Canada's action, Rasminsky explained that a continued attempt to stabilize the floating rate would result in very large depletions of Canada's reserves, and that the new pegged rate was necessary to correct a fundamental disequilibrium. In selecting the new rate, Rasminsky said there was consensus that a par value of 95 cents was too high, whereas the rate of 90 cents was lower than the Canadian economy required and Canada could not count on its international acceptance. Consequently, the new rate of US\$0.925 was proposed (IMF 1962c). Ideally, the Canadian authorities would have desired a longer period of experimentation before proposing a fixed par value, but contemporaneous events influenced the timing of their decision. Although some EDs complained about the short notice, they all warmly welcomed Canada's return to the Bretton Woods system.

Downward pressure on the dollar continued even after it was repegged, and defence of the new par value demanded emergency action. An application to the IMF for a drawing of \$300 million was made on 24 June 1962. The Executive Board quickly agreed to the drawing and the support operation was successful. During the December 1962 Article VIII Consultations, the Canadian authorities agreed with IMF staff to move towards a balanced fiscal budget and reduce the current account deficit (IMF 1962d). Nevertheless, after a short period of stability, downward pressure on the Canadian dollar returned, leading to an accelerating drain on reserves in June 1962. On 24 June 1962, a major economic and financial program to restore confidence in the Canadian dollar was announced: fiscal and monetary policy was tightened and temporary import surcharges were imposed. These measures halted the reserve outflow and the Managing Director concluded that this experience was proof of the effectiveness of the IMF and international co-operation in a time of crisis (Jacobsson 1964b).

The IMF's 1962 *Annual Report* restated, almost verbatim, the IMF's policy on fluctuating exchange rates from its 1951 *Annual Report*, and added that experience since that time had confirmed the views expressed therein. In particular, the 1962 report stated that, in specific cases, a short period of fluctuation may be a means of identifying a rate that can achieve external balance. A fluctuating rate may have an upward tendency only in exceptional circumstances, such as the large capital inflow into Canada in the early 1950s. However, general postwar

experience suggested that such cases were unusual and flexible exchange rates usually depreciated, often aggravating inflationary pressures.¹³

By November 1962, Canadian disenchantment with the fixed rate system had reappeared. Although the Bank of Canada's staff still felt that there were strong theoretical arguments in favour of a floating rate, their analysis showed the "impossibility of the alternative as a practical measure" at the time (Watts 1962). Any return to a floating rate system would incur "international hostility" and would make it impossible to maintain Canada's "international influence" (Handfield-Jones 1962). Canada remained on a pegged rate until June 1970, when inflationary pressures from the United States again forced Canada to exit from the Bretton Woods system and adopt a floating rate; these pressures eventually caused the system to collapse in 1973.

6 Canada's Experience and IMF Research

The Canadian experience with floating exchange rates from 1950 to 1962 had an important impact on research at the IMF and elsewhere. It inspired the development of the Mundell–Fleming model, which became the workhorse model of the IMF for three decades and a fundamental building block of the new field of open-economy macroeconomics. The IMF research connection with Canada in the 1950s and 1960s was primarily through the work of Robert Mundell, J. Marcus Fleming, and Rudolf Rhomberg.

Robert Mundell

The Canadian flexible rate experience influenced the thinking of Robert Mundell, a Canadian who decades later received the Nobel Prize in economics in part for his work done in this period. Mundell spent a year, from 1961 to 1962, in the Research and Statistics Department at the IMF, but his work on issues inspired by the Canadian experience complemented and influenced that of two senior IMF researchers: J. Marcus Fleming and Rudolf Rhomberg.

In two recent retrospectives on his work, Mundell reflects on the impact of the Canadian experience on the development of his contribution to the Mundell–Fleming model:

It was around this time [1956–57] that I shifted research topics from working about and further refining the pure classical model to thinking about the way to write down the general equilibrium equations for an open economy taking into

13. The IMF's 1962 *Annual Report* cited movements in exchange rates and prices in small open economies such as Argentina, Brazil, Chile, Indonesia, Peru, and Uruguay as evidence.

account monetary variables, exchange rates, and capital movements. The fact that Canada had a flexible exchange rate and capital flows between Canada and the United States were significant background influences but there was absolutely no model in the literature that was capable of dealing with the subject. (Mundell 2002, 4)

In a 2001 paper, when describing the model that he had developed in Mundell (1960), Mundell states that:

One implication of the model was that a domestic boom (shift up and right of the *XX* curve) would raise interest rates, attract capital inflows, appreciate the real exchange rate, and worsen the balance of trade, a conclusion that would hold under either fixed or flexible exchange rates. This was very relevant to an understanding of the economy of Canada, which was the only major country with a flexible exchange rate in the 1950s. (Mundell 2001, 221)

In two articles by leading international economists that describe Mundell's Nobel achievements, the connection to Canada is emphasized. According to Rudiger Dornbusch,

By 1960 . . . Mundell was fully caught up in the work on the implications of international capital mobility. The Canadian experience of shifting back and forth from floating to fixed rates may have been the impetus. (Dornbusch 2000, 201)

Andrew Rose states that:

. . . taking floating exchange rates seriously would have seemed a matter of only academic (i.e., trivial) interest when the work was done in the early 1960s. The same could be said of capital mobility in an era when virtually all OECD countries placed severe restrictions on the ability to trade assets or foreign exchange freely across international borders. In this context Mundell took full advantage of some of the many advantages to being Canadian. Canada had removed all exchange and capital controls in 1951, the first country to give up "the transition period" excuse after controls were imposed

during World War II. The Canadian dollar had also floated with minimal intervention since 1950. (Rose 2000, 217)

Mundell's key papers that represent his main contribution to the open-economy macro model are Mundell (1961a,b; 1962; 1963). His articles that deal directly with the Canadian experience with floating and capital mobility are Mundell (1961a) and (1963), and the one most often cited for the Mundell–Fleming model is Mundell (1963). In this analysis, based on an IS-LM framework with rigid wages and prices and with perfect capital mobility, Mundell compares the use of monetary and fiscal policy under fixed and flexible exchange rates and obtains the well-known result that, under fixed rates, fiscal policy is an effective macroeconomic stabilization tool while monetary policy is impotent, whereas the reverse is true under a flexible exchange rate regime.

This analysis is extremely insightful because it accurately represents the Canadian experience of the late 1950s. At that time, the Bank of Canada was conducting a monetary policy that was not sufficiently counter-cyclical. Consequently, Canadian interest rates rose to about the U.S. level and the Canadian dollar appreciated. Growth in Canada slowed and the unemployment rate increased. Political pressure, however, forced the Canadian government to adopt an expansionary fiscal policy in an attempt to boost demand and reduce unemployment. These policies largely offset each other and served only to raise domestic interest rates and appreciate the Canadian dollar, exactly as Mundell's model would have predicted.¹⁴

J. Marcus Fleming

J. Marcus Fleming was in the Research Department at the IMF from 1954 to 1976 and became Deputy Research Director. His contributions to the development of the open-economy macro model covered much of the same ground as that of Mundell. Although Fleming was much less prolific than Mundell, Boughton (2003) argues that Fleming should be viewed as an equal contributor to the model because the two researchers conceived of it independently and approximately contemporaneously.

Although Fleming does not motivate his study by citing the Canadian example in his 1962 paper, he clearly was aware that Canada was on a flexible exchange rate, as were a few other countries, including Peru. He was also aware of Mundell's work and that of his colleague, Rhomberg (Mundell 2002). Fleming states that:

14. In addition, Mundell (1964) argues that Governor Coyne's restrictive monetary policy, in response to his concerns about inflation and capital inflows from the United States, actually had the opposite effect on capital flows, since they increased with the rise in the interest rate differential.

. . . as shown in a paper by Mr. Rudolf Rhomberg, expounding an econometric model of the Canadian economy (Rhomberg 1964), the responsiveness of individual capital movements to changes in interest rates, and the responsiveness of interest rates to changes in money income, have probably been sufficiently great in that country over a large part of the postwar period relative to the marginal propensity to imports, for a rise in government expenditure at a constant money stock to have tended to produce such a result. (Fleming 1971, 240)

Fleming (1962) also cites Mundell (1961a). Mundell (2002), however, questions this choice of citation, since other papers were more relevant. Fleming (1962), produces results similar to Mundell's analysis using a standard IS-LM fixed-price (money wages) model with endogenous current and capital accounts. Under fixed exchange rates, expansionary fiscal policy (increased government expenditure, holding taxes constant) stimulates real output and leads to a current account deficit. Mundell (2002) criticizes Fleming for the assumption that the money stock is held constant when there is a fiscal expansion. Mundell's criticism is correct, because the central bank must allow the money supply to increase to maintain the fixed exchange rate when money demand and interest rates rise due to the fiscal expansion. Under a flexible rate, the increase in government expenditure when the capital account is interest elastic (and Fleming cites Rhomberg [1960] as evidence that capital flows in Canada were sensitive to interest rate movements) appreciates the currency, which deteriorates the trade balance. In this case, fiscal policy is more potent under a fixed than a flexible rate. Like Mundell, Fleming finds the opposite is true for an increase in the money supply.

Rudolf Rhomberg

Canadian experience also influenced Rudolf Rhomberg, who joined the IMF Research Department in 1959. His doctoral research at Yale was on Canada's experience with capital mobility in the 1950s.

In his work, Rhomberg models the short-run balance-of-payments adjustment process in an open economy and uses it to empirically test for the determinants of the remarkable stability of the Canadian floating exchange regime. Rhomberg finds, and subsequent IMF staff reports have also found, that speculative movements are, on the whole, equilibrating, and that they contributed to the stability of the Canadian dollar during the floating rate period. He also notes that the floating rate was more effective in insulating Canada against foreign inflation than as serving as a

counter-cyclical adjustment mechanism. The reason for the latter observation is that monetary policy during the 1950s was, on the whole, relatively unresponsive to changes in economic activity, and thus not effectively counter-cyclical. In his thesis (Rhomberg 1959), he briefly reviews the IMF's attitude towards floating rates and notes that, although the Fund was initially critical of the Canadian policy, the "conviction of the Fund officials as to the correctness of their earlier position on fluctuating exchange rates [had] weakened." Rhomberg's work refuted earlier propositions on the stability of flexible rates, such as Machlup (1949), Harberger (1950), and Laursen and Metzler (1950), who stated that flexible exchange rate systems would be unstable unless strict capital controls were in place (Canada removed all capital controls in 1951). Rhomberg incorporated the forward exchange rate market into traditional balance-of-payments theory, allowing short-term capital movements to play a role in the adjustment process. He pointed out that earlier theory was based on the incorrect assumption that exchange rates were determined by short-term capital movements, which could be highly volatile, because they were largely driven by expectations of future exchange rate movements. The Canadian experience demonstrated that a flexible exchange rate is not inherently fragile. Expectations were stable because the macroeconomic policies in the United States and Canada were primarily aimed at achieving stable inflation and output growth. In addition, shocks within the two economies were similar and relatively small, by historical standards.

Rhomberg's work on Canada led to two important publications. The first (Rhomberg 1960) was an econometric analysis of the foreign exchange market in Canada under floating rates from 1950–57. In particular, Rhomberg examined the impact of large capital inflows from the United States to finance the resource investment boom in Canada in the 1950s, and considered the question of whether the floating exchange rate regime accommodated these capital flows in a stable fashion. The key relationship he investigated was between short-term capital flows and the exchange rate. His analysis finds that short-term capital flows responded quickly and strongly to Canada–U.S. interest differentials, and that the exchange rate adjusted in a stabilizing manner to these flows.

Rhomberg's second publication (1964) had a significant impact in the 1960s, because it was one of the first studies to develop a fairly complete econometric model of an open economy. The model was estimated with Canadian data over the period 1950–62, and its originality stems from the fact that, in addition to including the usual macroeconomic aggregates, it also incorporated several open-economy variables to capture external adjustment. These included the current account, short- and long-term capital flows, the exchange rate, and international reserves.

With the model, Rhomberg examines the relative effectiveness of monetary policy under fixed and flexible exchange rates in an environment of capital mobility, as well as the insulation properties of a floating rate. He finds, based on calculated multipliers from the model solution and from model simulations, evidence that is largely consistent with the Mundell–Fleming model’s implications that monetary policy is most effective under flexible rates while fiscal policy is most effective under fixed rates. Rhomberg also finds that, under floating rates, the domestic real economy is well insulated from foreign output shocks.

Rhomberg (1964) cites Mundell (1961a) and Fleming (1962); Mundell (1961a) cites Rhomberg’s 1959 doctoral thesis. Anne Krueger (1965, 195–96) also cites Rhomberg’s work and combines his 1964 model with that of Fleming (1962) into the Rhomberg–Fleming view that “the use of fiscal policies under flexible exchange rates may result in a smaller increase in employment and income than under a fixed exchange rate.”

7 Conclusion

Canada’s decision to adopt a flexible exchange rate in September 1950 and to maintain it for over a decade was an important event in the history of the Bretton Woods system and the International Monetary Fund. Canada’s exit from the Bretton Woods system was significant because Canada was one of the charter IMF members and a key player in the establishment of the IMF in 1944.

The IMF’s reaction was initially negative: Canada’s decision was perceived as a potential threat to the Bretton Woods system and the IMF itself. Nonetheless, there was an appreciation that Canada’s circumstances were unique and that this departure could be justified on a temporary basis as a mean to identify a new equilibrium exchange rate. Thus, the general feeling at the IMF in the 1950s was that Canada’s departure from par values represented the actions of a prodigal son who would, upon understanding the errors of his ways, ultimately return to the fold. In addition, although the Fund considered the first half of Canada’s floating rate period as a success, because the Canadian dollar had remained relatively stable, they attributed the stability to Canada’s close integration with the United States. The IMF thus felt that Canada’s experience was unique and could not be used as an example for other countries. Outside the IMF, Canada’s experience helped crystallize the debate over fixed versus floating rates, which began in earnest after Friedman’s (1950) seminal article, and it encouraged interest in the pursuit of similar actions by other countries, especially the United Kingdom, as evidenced by its ROBOT plan of 1952 (Bordo 1993).

In addition to the debate at the official level that we document in this paper, Canada's experience with both an open capital account and floating was a catalyst for research at the IMF, in the work of Rhomberg, Fleming, and Mundell, that led to the Mundell–Fleming model and the creation of the field of open-economy macroeconomics.

References

- Bordo, M. D. 1993. "The Bretton Woods International Monetary System: A Historical Overview." In *A Retrospective on the Bretton Woods System*, 3–98, edited by M. Bordo and B. Eichengreen. Chicago: University of Chicago Press.
- Bordo, M. D., A. Dib, and L. Schembri. 2007. "Canada's Pioneering Experience with a Flexible Exchange Rate in the 1950s: (Hard) Lessons Learned for Monetary Policy in a Small Open Economy." NBER Working Paper No. 13605.
- Bordo, M. D. and A. Redish. 1990. "Credible Commitment and Exchange Rate Stability: Canada's Interwar Experience." *Canadian Journal of Economics* 23 (2): 357–80.
- Boughton, J. M. 2003. "On the Origins of the Fleming-Mundell Model." *IMF Staff Papers* 50 (1):1–9.
- Choudhri, E. U. and L. A. Kochin. 1980. "The Exchange Rate and the International Transmission of Business Cycle Disturbances: Some Evidence from the Great Depression." *Journal of Money, Credit and Banking* 12 (4): 565–74.
- Coyne, J. E. 1949. "A Method of Combining a Free Exchange Rate with the Present System of Exchange Controls in Canada." Bank of Canada memorandum, 31 January, Bank of Canada Archives GM89-1-3.
- de Vries, M. and J. K. Horsefield. 1969. *The International Monetary Fund, 1945–1965: Twenty Years of International Monetary Cooperation, Volume II: Analysis*. Washington: International Monetary Fund.
- Dirks, F. C. 1955. "Report on our Trip to Canada, attached 'Report of Technical Mission to Canada October 30–November 4 1955.'" IMF memorandum to I. Rooth, IMF Archives, 16 November.
- Dornbusch, R. 2000. "Robert A. Mundell's Nobel Memorial Prize." *Scandinavian Journal of Economics* 102 (2): 199–210.
- The Economist*. 1962. "Inquest on a Floating Rate." 12 May: 573–74.
- Fleming, J. M. 1962. "Domestic Financial Policies under Fixed and under Floating Exchange Rates." *IMF Staff Papers* 9 (3): 369–80.

- Fleming, J. M. 1971. *Essays in International Economics*. London: Allen and Unwin.
- Friedman, M. 1953. "The Case for Flexible Exchange Rates." In *Essays in Positive Economics*, 157–203. Chicago: University of Chicago Press.
- Friedman, M., D. Gordon, and W. A. Mackintosh. 1948. *Canada and the Problems of World Trade. A Radio Discussion*. The University of Chicago Round Table No. 526. Chicago: University of Chicago Press.
- Goforth, W. 1950. "Reactions to the New Canadian 'Floating' Rate." Memorandum. Bank of Canada Archives Int. 4B-220 Vol. 1. 18 October.
- Granatstein, J. L. 1986. *Canada 1957–1967: The Years of Uncertainty and Innovation*. Toronto: McClelland and Stewart.
- Handfield-Jones, S. J. 1962. "Notes on the Case for the Fixed Exchange Rate." 26 November.
- Harberger, A. C. 1950. "Currency Depreciation, Income and the Balance of Trade." *Journal of Political Economy* 58 (1): 47–60.
- Horsefield, J. K. 1969. *The International Monetary Fund, 1945–1965: Twenty Years of International Monetary Cooperation, Volume I: Chronicle*. Washington: International Monetary Fund.
- International Monetary Fund (IMF). 1951, 1952, 1953, 1962. *Annual Report*.
- _____. 1952. *Annual Report of the Executive Directors for the Fiscal Year Ended April 30, 1952*. Washington, D.C. 4 September, p. 66.
- _____. 1962a. "Staff Report – 1961 Article VIII Consultations." IMF Archives, 29 January.
- _____. 1962b. "Report on the 1961, Article VIII Consultations with Canada (SM/62/7)." IMF Archives, 16 February 1962.
- _____. 1962c. "Canada – Change in Par Value." EBM/62/20 – 5/2/62, IMF Archives, 2 May.
- _____. 1962d. "Minutes of IMF Article VIII Consultations with Canada, Fifth Meeting." 1962. Bank of Canada Archives 5A-220, 7 December.

- IMF European and North American Department. 1950. "Canada: The Problem of Capital Imports." IMF Archives, 29 September.
- IMF Executive Board. 1950. "Minutes of Executive Board Meeting 604." 30 September.
- _____. 1951a. "Minutes of Executive Board Meeting 671." 30 April.
- _____. 1951b. "Discussion of Exchange Position of Canada." 30 April.
- _____. 1961. "Minutes of Executive Board Meeting 61/41." 21 July.
- IMF Research Department. 1951. "Fixed or Fluctuating Exchange Rates." Res-46, IMF Archives, 25 January.
- IMF Western Hemisphere Department. 1961. "Exchange Rate Policy and Economic Developments in Canada." SM/61/62,-7/14/61, IMF Archives, 14 July.
- IMF Western Hemisphere Department and the Exchange Restrictions Department. 1961. "Briefing Paper – Article VIII Consultations with Canada." 31 October.
- Jacobsson, P. 1964a. "The IMF in 1957/58." In *International Monetary Problems 1957–1963: Selected Speeches of Per Jacobsson*. Washington, D.C.: IMF.
- _____. 1964b. "The IMF in 1962/63." In *International Monetary Problems 1957–1963: Selected Speeches of Per Jacobsson*. Washington, D.C.: IMF.
- Krueger, A. O. 1965. "The Impact of Alternative Government Policies Under Varying Exchange Systems." *Quarterly Journal of Economics* 79 (2): 195–208.
- Laursen, S. and L. A. Metzler. 1950. "Flexible Exchange Rates and the Theory of Employment." *Review of Economics and Statistics* 32 (4): 281–99.
- Lawson, R. 1949. "The Unofficial Market (response to March 18 memo by Turk)." Bank of Canada Archives, 16 May.
- Machlup, F. 1949. "The Theory of Foreign Exchange." In *Readings in the Theory of International Trade*, edited by H. S. Ellis and L. A. Metzler. Philadelphia: Blakiston.
- Meade, J. E. 1951. *The Theory of International Economic Policy*. 2 Volumes. London: Oxford University Press.

- Metcalf, C., A. Redish, and R. Shearer. 1996. "New Estimates of the Canadian Money Stock: 1871–1967." Department of Economics, University of British Columbia Discussion Paper No. 96-17.
- Muirhead, B. 1999. *Against the Odds: The Public Life and Times of Louis Rasminsky*. Toronto: University of Toronto Press.
- Mundell, R. A. 1960. "The Monetary Dynamics of International Adjustment under Fixed and Flexible Exchange Rates." *Quarterly Journal of Economics* 74 (2): 227–57.
- _____. 1961a. "Flexible Exchange Rates and Employment Policy." *Canadian Journal of Economics and Political Science* 27 (4): 509–17.
- _____. 1961b. "The International Disequilibrium System." *Kyklos* 14 (2):153–72.
- _____. 1962. "The Appropriate Use of Monetary and Fiscal Policy under Fixed Exchange Rates." *IMF Staff Papers* 9 (1): 70–79.
- _____. 1963. "Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates." *Canadian Journal of Economics and Political Science* 29 (4): 475–85.
- _____. 1964. "Problems of Monetary and Exchange Rate Management in Canada." *National Bank Review* 2 (1): 77–86.
- _____. 2001. "On the History of the Mundell–Fleming Model." *IMF Staff Papers* 47: 215–27.
- _____. 2002. "Notes on the Development of the International Macroeconomic Model." In *The Open Economy Macromodel: Past, Present, and Future*, 1–16, edited by A. Arnon and W. Young. Boston: Kluwer Academic Publishers.
- Nichols, C. T. 1950. "Dangerous Results Seen from Free Dollar Here – IMF Frowns on Canadian Decision." *The Hamilton Spectator*. 13 October.
- Office of the Minister of Finance (Canada). 1950. Press release by Douglas Abbott, Minister of Finance, cancelling official fixed exchange rate, Bank of Canada Archives, 30 September.
- _____. 1962. "Immediate Release." Bank of Canada Archives, 2 May.

Plumptre, A. F. W. 1977. *Three Decades of Decision: Canada and the World Monetary System, 1944–75*. Toronto: McClelland and Stewart.

Porter Commission. 1962. “Statements of the Minister of Finance Regarding Exchange Rate Policy.” References for the Porter Commission, December.

Powell, J. 2005. *A History of the Canadian Dollar*. Ottawa: Bank of Canada.

_____. Forthcoming. “The Bank of Canada Comes of Age: The Governorship of James Elliot Coyne, 1955–1961.” Unpublished manuscript.

Rasminsky, L. 1950. “Report on Washington Discussion re: Floating the Canadian Dollar.” Bank of Canada memorandum, 28–30 September.

_____. 1951. “Fluctuating Exchange Rates.” Bank of Canada memorandum, Bank of Canada Archives 220-25C-3. 17 May.

_____. 1953. “Fluctuating Exchange Rates.” Bank of Canada memorandum. Bank of Canada Archives 220-25C-3 #16. 17 September.

Rhomberg, R. R. 1959. “Fluctuating Exchange Rates in Canada: Short-Term Capital Movements and Domestic Stability.” Doctoral Thesis. Yale University.

_____. 1960. “Canada’s Foreign Exchange Market: A Quarterly Model.” *IMF Staff Papers* 7 (3): 439–56.

_____. 1964. “A Model of the Canadian Economy Under Fixed and Fluctuating Exchange Rates.” *Journal of Political Economy* 72 (1): 1–31.

Rose, A. K. 2000. “A Review of Some of the Economic Contributions of Robert A. Mundell, Winner of the 1999 Nobel Memorial Prize in Economics.” *Scandinavian Journal of Economics* 102 (2): 211–22.

Skadden, A. 1947. “The Canadian Exchange Problem” and covering memorandum, Bank of Canada Archives, 15 and 18 August.

Thiessen, G. 2000. “Can a Bank Change? The Evolution of Monetary Policy at the Bank of Canada 1935–2000.” In *The Thiessen Lectures, Lectures delivered by Gordon G. Thiessen, Governor of the Bank of Canada 1994 to 2001*. Ottawa: Bank of Canada.

van Campenhout, A. 1953. Letter to I. Rooth. Bank of Canada Archives 220-25C-3. 4 December.

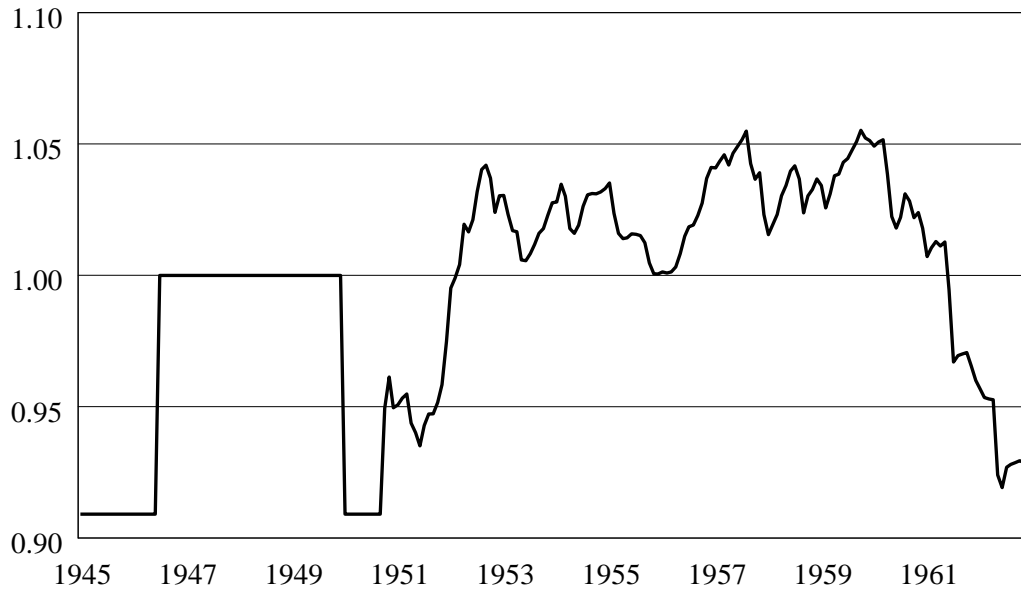
_____. 1954. Letter to S. Turk enclosing "Draft rules re: transactions of the IMF in fluctuating rates." Bank of Canada Archives 220-25C-3. 23 February.

Watts, G. S. 1962. "Fixed vs Floating Exchange Rates." Bank of Canada Archives 4B-200 v.5. 29 November.

Yeager, L. B. 1976. *International Monetary Relations: Theory, History, and Policy*. New York: Harper and Row.

Chart 1 Exchange Rate

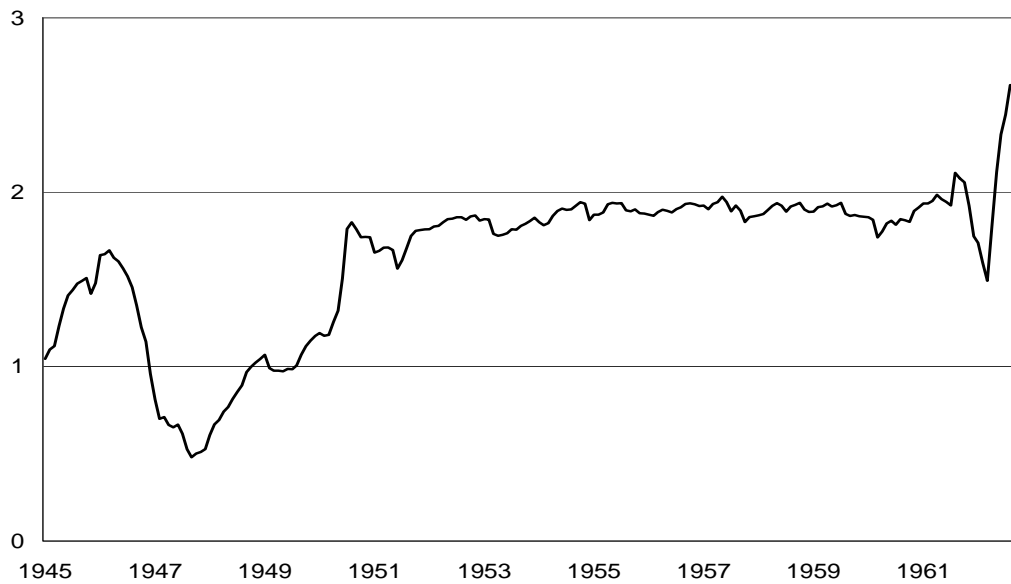
Monthly average noon rates, U.S. dollars per unit



Source: Bank of Canada

Chart 2 Canadian Official Holdings of Gold and U.S. Dollars

Billions of U.S. dollars

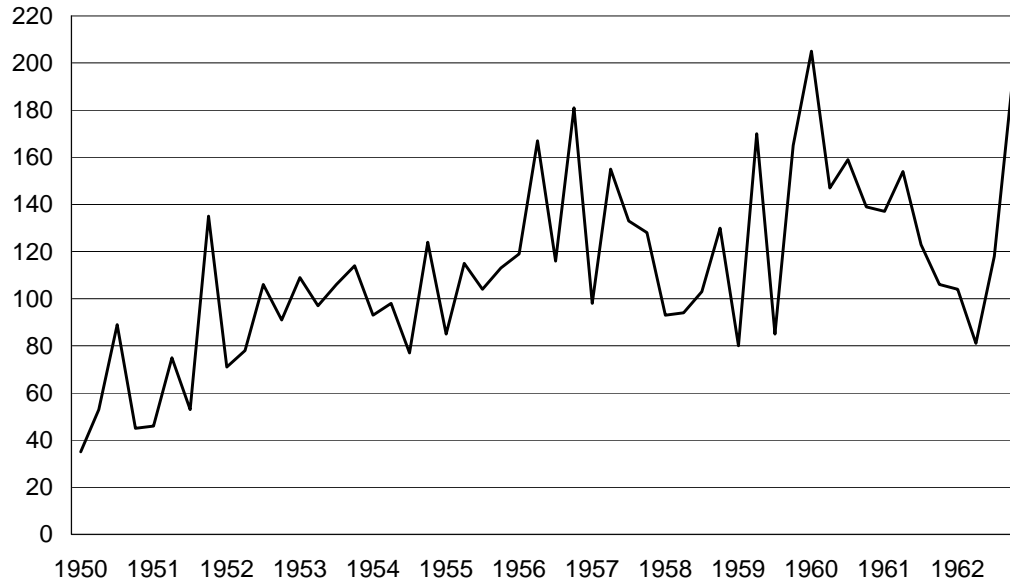


Source: Bank of Canada

Chart 3

Direct Investment in Canada

Quarterly, millions of Canadian dollars

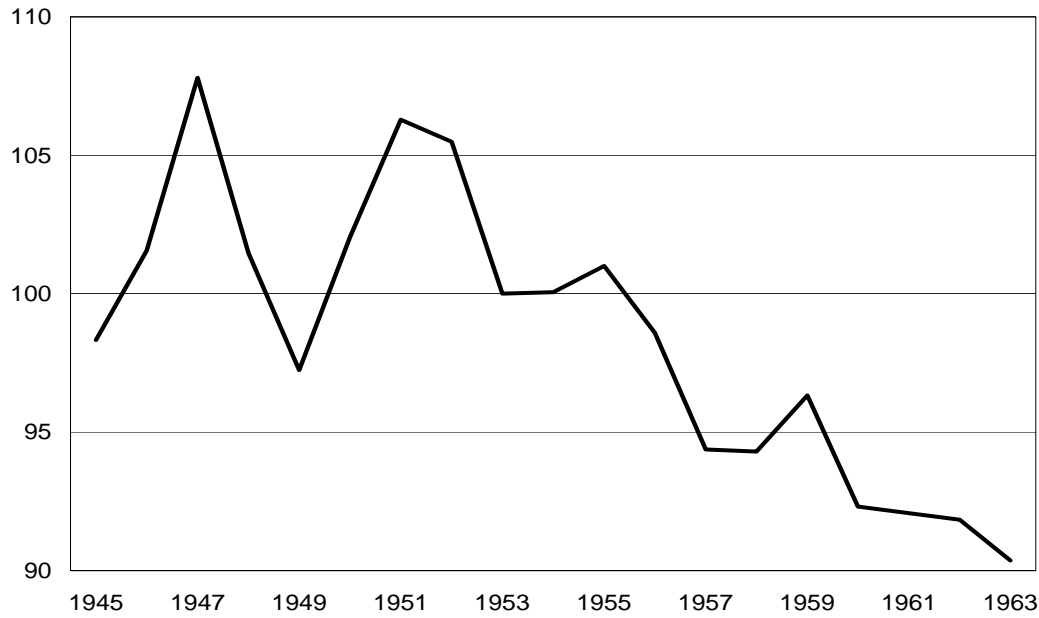


Source: Statistics Canada

Chart 4

Canadian Real Commodity Price Index

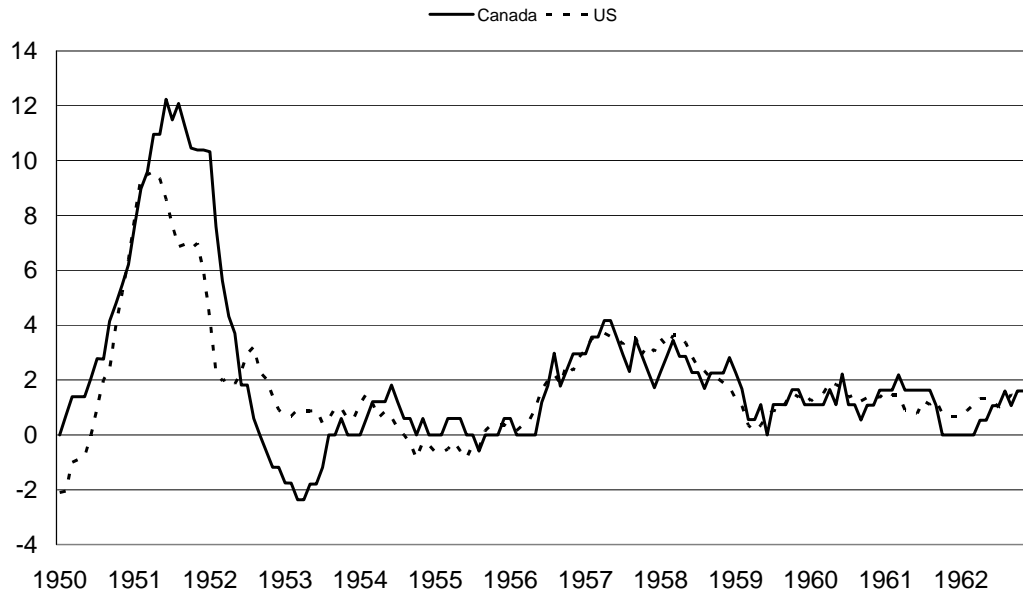
Annual (1953=100)



Source: Bank of Canada

Chart 5
Consumer Price Index

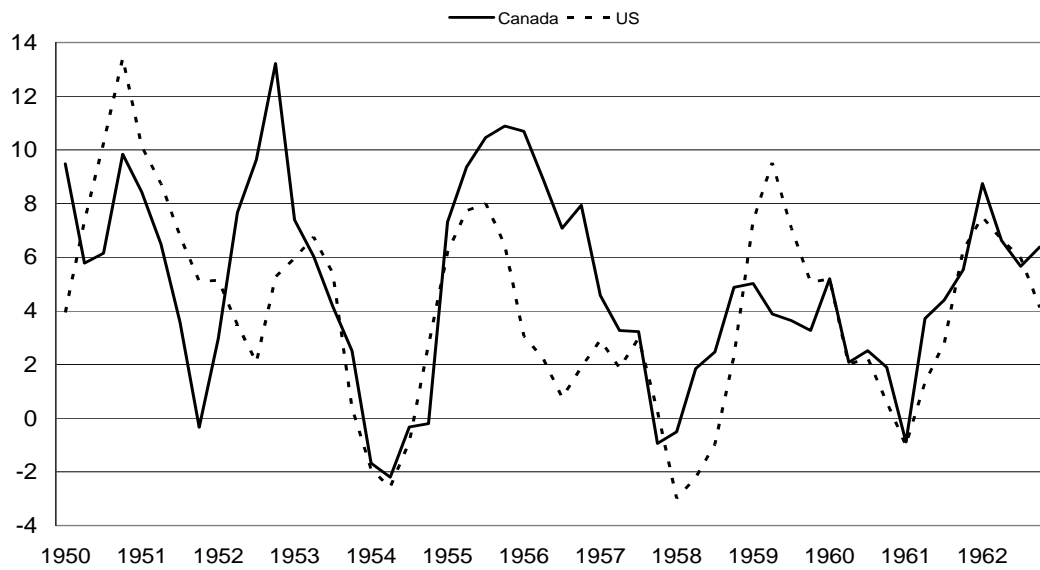
Monthly (1997=100), year-over-year growth rate



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

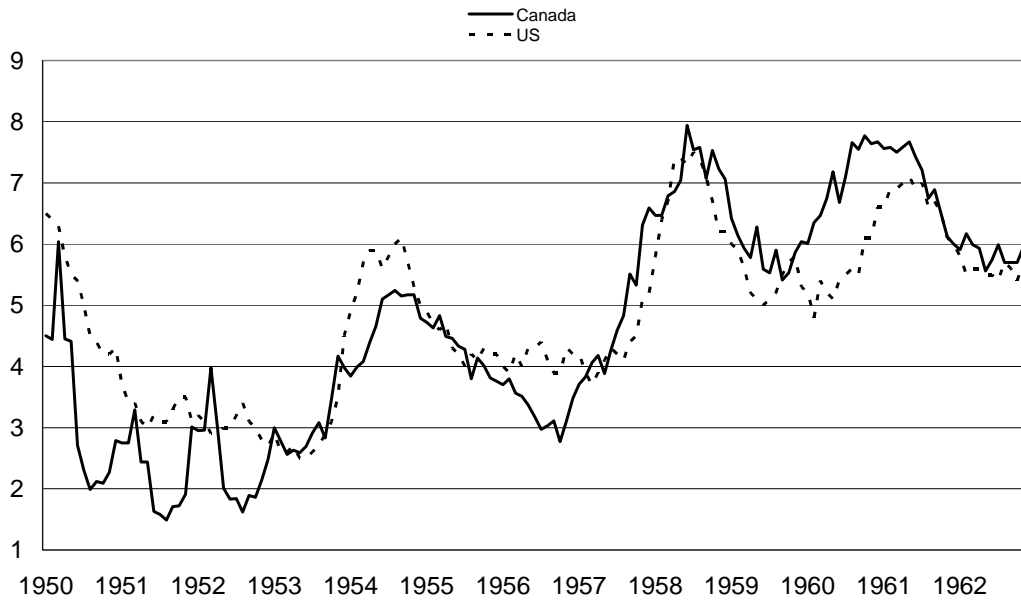
Chart 6
Real Gross Domestic Product (1997 Prices)

Quarterly, year-over-year growth rate



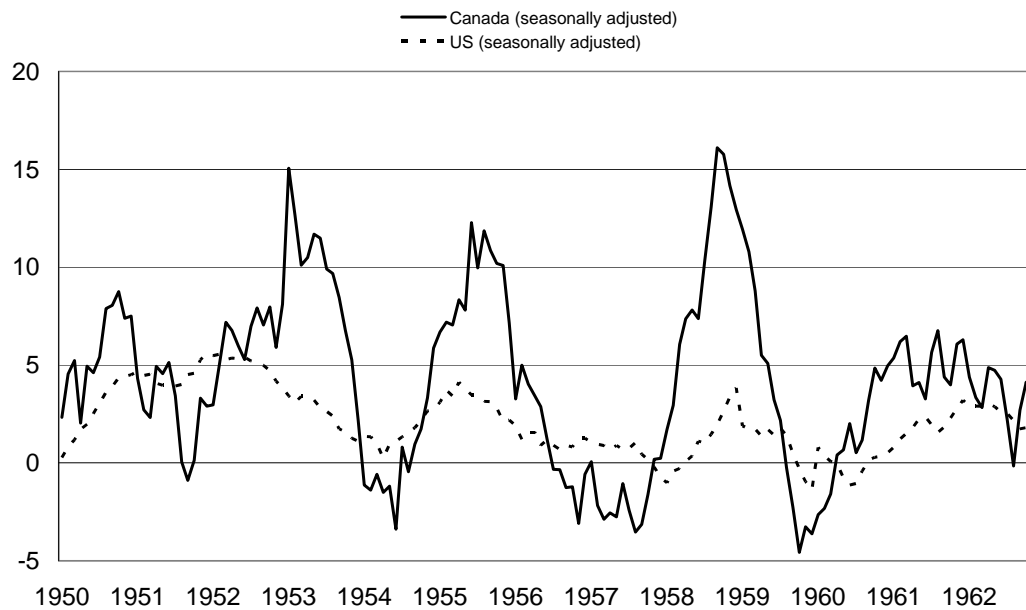
Source: Statistics Canada

Chart 7
Unemployment Rate
 Monthly



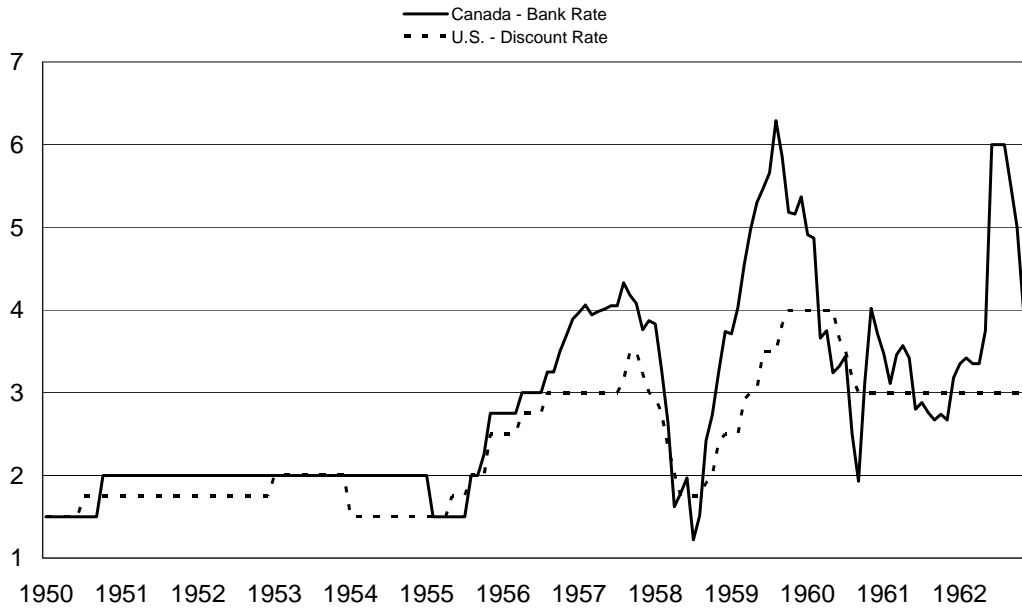
Source: Statistics Canada and U.S. Bureau of Labor Statistics

Chart 8
Money Supply (M1)
 Monthly, year-over-year growth rate



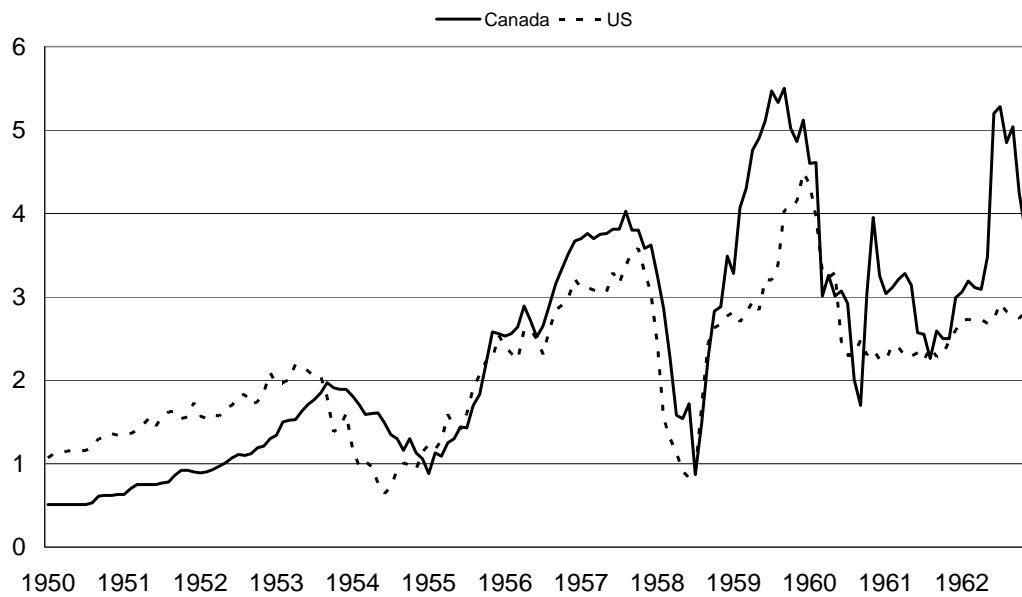
Source: Metcalf, Redish, and Shearer (1996) and the National Bureau of Economic Research

Chart 9
Interest Rates
 Monthly



Source: Statistics Canada and the Bank for International Settlements

Chart 10
3-Month Treasury Bill Market Yield
 Monthly



Source: Statistics Canada and the Bank for International Settlements