

# From Bonds to Banknotes: Central Banking and Public Finances in Canada

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## Abstract

This paper presents a summary of the Bank of Canada's finances from 1935 to the present, highlighting the interplay between the central bank and the federal government's fiscal operations. It explores the historical, political, and economic factors that led to the establishment and subsequent nationalization of the Bank of Canada. It also presents new data and analysis on the central bank's impact on Canadian public finances. By examining the evolution of the Bank of Canada's balance sheet, revenue streams, and expenditures, it underscores the importance of understanding these connections, particularly considering the COVID-19 pandemic and the subsequent implementation of quantitative easing. Understanding the financial position of the Bank of Canada separately from the broader consolidated position of the Government of Canada is valuable. For example, it allows one to construct a broader measure of federal debt service costs that today are materially larger than what is reported in the public accounts. It may also clarify the implications of monetary policy choices on the economic and financial welfare of the nation.

*Keywords:* Bank of Canada; central banks; monetary policy; public finance; public debt

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# Introduction

Though not always appreciated, monetary policy has always been a critical component of public finances. The connection is sometimes direct, with money creation in extreme circumstances—such as during World War I in Canada—bridging the difference between government expenditures and revenues. The inflationary consequences of this are, of course, highly problematic. But even during normal times in economies with responsible and independent central banks, where government deficits are not monetized, changes in interest rates directly affect the cost of servicing public debts. Operational activities of central banks, which normally earn profits, also contribute non-trivial revenues to national governments. In recent years, especially following the introduction of large-scale bond purchases during the COVID-19 pandemic and, more recently, the Bank of Canada incurring financial losses for the first time in its history, understanding the interaction between central banking public finance has become particularly important. This paper explores that interaction through key historical events, some of which are not widely known, and through new data on the Bank’s finances over time.

While fiscal and monetary policy are intertwined, and indeed the Bank of Canada’s finances are fully consolidated within the Public Accounts of Canada, there is value in understanding the Bank’s finances separately from the broader federal government. Indeed, some central banks—such as with the United States’ Federal Reserve System—are not consolidated. There is critical information within central bank financial statements. Changing the size and composition of assets and liabilities, such as by exchanging bonds for banknotes and vice versa, is central to monetary policy. Central bank revenues and expenditures also have direct implications for the

government's fiscal balance. The spread between the return on assets held at the Bank and the interest paid to service Bank liabilities matters for overall government debt service costs in a way that is lost within the consolidated statements. Federal debt charges, for example, include payments to the Bank of Canada, despite such payments being made by the government to itself, from a consolidated perspective. This paper clarifies some of those issues.

The historical context also has value. After all, the fundamental connection between central banks and public finances is not new, and even predates Confederation. In 1841, for example, the first Governor General of the United Province of Canada—Charles Thompson, The Lord Sydenham—had exactly that connection in mind. As part of a broader effort to develop Canada, Lord Sydenham envisioned a series of capital projects to better connect the Atlantic Ocean to Lake Erie through the Welland Canal and various improvements to St. Lawrence navigation. He further proposed expansive road projects, including from Toronto to Lake Huron. The total cost was significant: nearly £1.5 million sterling. For context, this was approximately 5.5 times annual government revenues at the time—today, for context, that would be equivalent to roughly \$2.5 trillion federally.<sup>2</sup> Funding such massive undertakings would not be feasible through direct taxation alone, and in part he hoped the Province of Canada would establish a central bank to help defray much of the cost. In his first Speech from the Throne,<sup>3</sup> he argued that

*A very considerable amount of the capital required [for the public works projects] might be raised, without any charge whatever for interest, by the assumption by the province of the issue of paper payable on demand, which is now enjoyed by private banks or by individuals, without their being subjected to any charge whatever in return for the power thus granted them by the state.*

He estimated that roughly 40 per cent of the total costs might be covered in this way. This early proposal to create something like a central bank in Canada was, at least in part, motivated by a desire to capture seigniorage to fund public works projects.<sup>4</sup> The plan was never adopted.

The tight connection between Canadian fiscal and monetary policy is evident in even earlier periods. In 1685 New France, for example, military expenditures exceeded tax revenues significantly and other sources of funds were unavailable. To cover the deficit, the government issued a new type of debt instrument: playing card money. Though not originally called money when first issued by Jacques De Meulles, Intendant of New France at the time, to pay soldiers' salaries, they easily played that role in addition to being government debt.<sup>5</sup> Concretely, the

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<sup>2</sup> Source: Author's calculation based on information with Great Britain, Parliament, "Act of Parliament of Canada, 1841, appropriating Monies for Public Works in Canada; Correspondence and Accounts," *House of Commons Papers* 32, 1843, at 26 and 60. Available with subscription at <https://archives.parliament.uk/online-resources/parliamentary-papers/>.

<sup>3</sup> *Ibid*, at 61.

<sup>4</sup> For a broader history of early banking in Canada, and early efforts at creating a government note-issuing bank, see M. Denison, *Canada's First Bank: A History of the Bank of Montreal* (Toronto-Montreal: McClelland & Stewart Limited, 1966).

<sup>5</sup> C. Desbarats, "On Being Surprised: by New France's Card Money, for example," (2021) 102:1 *The Canadian Historical Review*.

blank surface of playing cards provided a convenient paper object on which a value was written and signed by the Governor that reflected the amount owed to the recipient.<sup>6</sup> Later fiscal shortfalls were also commonly and regularly covered in this way, and, over time, the playing cards increasingly circulated among colonists. They even became legal tender and were potentially highly inflationary as a result.<sup>7</sup> They were simultaneously government debt and paper money, reflecting a similarity between these financial instruments that continues to be relevant. Indeed, as Desbarats (2021) notes, the Wendat had a single word that could refer to debt, playing cards, and paper money: *ahiatoncha*.<sup>8</sup> Today, of course, bonds and paper money have larger differences, but they are both liabilities of the government and understanding the interconnections between fiscal and monetary policy remains relevant.

Funding large scale public works or government operations was never the Bank of Canada's purpose, nor was issuing new money to cover fiscal deficits. Its primary objective is to "promote the economic and financial welfare of Canada,"<sup>9</sup> which today means maintaining low and stable inflation and ensuring the safety and soundness of the Canadian financial system. But there are still important implications of Bank finances for the Government of Canada. Some of these implications, as already mentioned, are quite apparent. By influencing interest rates, the central bank affects borrowing costs for both the government and the private sector, which has further implications for economic activity, consumption, investment, and more. The Bank is also the fiscal agent of the government, which involves managing its debt issuances, holding its deposits, and conducting transactions on its behalf.

This paper explores, in detail, the evolution of the Bank of Canada's finances from 1935 to the present. It begins by summarizing the story behind why the Bank of Canada is a public entity in the first place. It is a fascinating historical episode involving several conflicting political personalities that is ultimately the reason why our central bank (unlike some other countries) is wholly consolidated within the Government of Canada's books. Beyond highlighting this history, this paper's main contribution is to compile and analyse Bank of Canada financial data from multiple sources. It compiles detailed data from the Bank's financial statements, from its initial operations in 1935 through to early 2023, to provide an examination of central bank finances in Canada. It describes both the detailed nature of the bank's balance sheet and how it has changed over time, as well as its revenues and expenditures. This sheds light on some of the direct, but sometimes opaque, effects that monetary policy decisions can have on broader public finances.

To illustrate this point, consider the revenues and expenditures of the Bank of Canada. Historically, revenues were accrued from interest payments on government bonds held by the Bank of Canada. Expenditures were relatively simple, involving the payment of wages and salaries to staff, purchase and maintenance of buildings and equipment, as well as production

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<sup>6</sup> J. Powell, *A History of the Canadian Dollar* (Ottawa, Ontario: Bank of Canada, 2005), 4-6.

<sup>7</sup> B. Cutsinger, V. Geloso, and M. Bédard, "The wild card: colonial paper money in French North America, 1685 to 1719," (2021) 26:2 *European Review of Economic History* 185-207.

<sup>8</sup> C. Desbarats, "On Being Surprised," 139.

<sup>9</sup> *Bank of Canada Act*, RSC 1985, c. B-2.

costs associated with currency, and only modest other costs. Profits would then be remitted to the federal government. Since 2020, however, these historical patterns have been upended by large-scale asset purchases, sometimes referred to as quantitative easing, which took place during the pandemic. Larger asset holdings mean higher revenues on the one hand, but an increase in expenses too since the Bank of Canada purchases the bonds mainly through financial institutions that are given an increase in their reserve accounts held at the Bank in exchange. Unlike regular banknotes, these balances earn interest and represent a real debt service cost for the federal government. The rapid interest rate increases in 2022 that aimed to combat high inflation have meant interest expenses have increased as well—far surpassing revenues. This affects overall government debt service costs in a material way. I show that for February 2023, such costs are roughly 13 percent higher than reported in the fiscal monitor.

This paper is not the first paper to explore these connections. Fortin (2022) is a notable recent contribution, which finds the substantial increase in Bank of Canada bond holdings, and the consequent rise in interest-earning commercial bank reserves held at the Bank, exposes the federal government to considerably more interest-rate risk than was previously the case.<sup>10</sup> The potential magnitude of Bank of Canada financial losses, which are at the time of writing only beginning to become apparent, was explored in detail by Chen and Tombe (2023).<sup>11</sup> And more broadly, Ambler, Koepl, and Kronick (2022) explore challenges resulting from the increase in the Bank of Canada's balance sheet as a result of quantitative easing.<sup>12</sup> There is also growing international interest in central bank finances, such as work by Bell et al. (2023), as many are now reporting financial losses.<sup>13</sup> All these studies contribute to the existing literature exploring whether central bank finances in general, and equity in particular, have implications for monetary policy.<sup>14</sup> But this is the first paper, to my knowledge, that combines rich historical context with the full series of Bank of Canada financial data. I start with the history.

## Why is the Bank of Canada a Public Entity?

The Bank of Canada's history, including some lesser-known parts, is necessary to understand its place in public finances today. As mentioned previously, the Bank is fully consolidated within the Public Accounts of Canada, but this fact was not a foregone conclusion. It is largely due to several highly contingent events, and interesting interpersonal dynamics between historically important political leaders, that led to the Bank's nationalization shortly after its creation.

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<sup>10</sup> M. Fortin, "The Fiscal Impact of Quantitative Easing," (2022) 48:4 *Canadian Public Policy* 490-502.

<sup>11</sup> Y. Chen and T. Tombe, "Reversal of Fortunes: Rising Interest Rates and Losses at the Bank of Canada," (2023) 337 *C.D. Howe Institute e-Brief*.

<sup>12</sup> S. Ambler, T. Koepl, and J. Kronick, "The Consequences of the Bank of Canada's Ballooned Balance Sheet," (2022) 631 *C.D. Howe Institute Commentary*.

<sup>13</sup> S. Bell, M. Chui, T. Gomes, P. Moser-Beohm, and A.P. Tejada, "Why are central banks reporting losses? Does it matter?" (2023) 68 *BIS Bulletin*.

<sup>14</sup> A. Nordstrom and A. Vredin, "Does central bank equity matter for monetary policy?" (2022) *Sveriges Riksbank Staff Memo*.

## Early Monetary Policy in Canada

Canada's monetary system began with the gold standard. The Minister of Finance issued Dominion Notes, which were like banknotes issued by private chartered banks, and these were materially backed by gold held in reserves. By World War I, for example, note issues up to \$30 million required a 25 percent gold reserve and all issues above this required 100 percent.<sup>15</sup> At least in part, the domestic money supply in Canada therefore moved up and down with gold inflows and outflows. Monetary policy was effectively non-existent; or, more precisely, the government's ability to conduct it was heavily constrained.

As a result, inflation fluctuated significantly during the early 1870s, reaching a peak of over 9 per cent in 1872. This was followed by deflation throughout the latter half of the decade. The 1880s did not see any improvement, as inflation exceeded 6 per cent twice, and deflation in 1884 reached a staggering 12 per cent.<sup>16</sup> It would be incorrect to assume that deflation and inflation cancel each other out. Volatility in price changes, whether up or down, makes planning difficult for households and businesses alike and redistributes wealth across individuals in a way that can be socially destructive. In testimony before Parliament, American economist Irving Fisher described the volatility in the inflation rate as a "great evil" and attributed it to the instability of money and credit.<sup>17</sup> Unfortunately, there was little the government could do.

Following World War I, however, the government decided money creation was needed to help finance the war and proceeded to print significant sums not backed by gold. They knew it was inflationary but deemed it necessary to secure goods and services required for the war effort. Effectively, the Finance Act of 1914 empowered the Treasury Board, which then as now was a committee of Cabinet, with several powers that today are normally held by a central bank. It served as the lender of last resort, set interest rates that banks could borrow at, and fulfilled several other functions. After the war ended, this practice continued, albeit with some changes, and was one of the key motivations for the government's initial resistance to creating a central bank. Indeed, even after the Great Depression struck in the early 1930s, Prime Minister R.B. Bennett noted that a central bank "would not do a single thing beyond what we are doing now."<sup>18</sup> But this could not last. Indeed, Bennett himself soon changed his mind as the Depression continued.

There were also political pressures to consider, especially from agricultural interests in Western Canada. Responding to this, the Liberal Party—which at the time had a strong western base of support—switched its previous position to one that supported creating a national central bank, stating "credit is a public matter, not of interest to banks only, but of direct concern to the

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<sup>15</sup> Canada, *Report of the Royal Commission on Banking and Currency in Canada*, Ottawa: Privy Council Office, 1933, Vol. 1, Ch. 2, p. 21-22. Note that the percentage of gold reserves to notes outstanding varied considerably over time, as reported in Vol. 1, Ch. 3, p. 38.

<sup>16</sup> Source: Finances of the Nation, *FON Macroeconomic Database*. Available at <https://financesofthenation.ca/macrodatab/>. Accessed May 11, 2023.

<sup>17</sup> Canada, Parliament, *House of Commons Committees*, 14th Parl, 2nd Sess, Select Standing Committee on Banking and Commerce, Vol. 1 (30 April 1923) at 583.

<sup>18</sup> Canada, Parliament, *House of Commons Debates*, 17th Parl, 2nd Sess, Vol. 2 (13 May 1931) at 1562.

average citizen.”<sup>19</sup> With both the government and the opposition evolving in their positions, a Royal Commission was established to explore the issue in depth. And in 1933, the *Royal Commission on Banking and Currency in Canada* released its final report and recommended (among other changes) the creation of a central bank.<sup>20</sup> “In such a time of difficulty,” the Commission wrote during the Great Depression, “experiment is justifiable.”<sup>21</sup> So Canada did just that and established the Bank of Canada.

## The Bank as a Private Entity

The Bank of Canada was not a public institution when it started its operations in March 1935. It was a semi-private entity created by an Act of Parliament the previous year, following the recommendations of the Royal Commission mentioned previously.<sup>22</sup> The Bank had to follow the rules set by the legislation, but its shareholders were private citizens. Anyone who bought shares could receive dividends of 4.5 per cent from the Bank’s profits and vote for some of its Board members. There were 12,200 shareholders who owned a total of 100,000 shares, with a limit of 50 shares per person.<sup>23</sup> The government did not own any, and indeed could only temporarily own shares under certain conditions.<sup>24</sup>

The Bank of Canada was not unique among other advanced economies in having private shareholders when it was established. The United States, the United Kingdom, France and several other countries also had private central banks at that time. However, this arrangement could potentially pose challenges to the government’s ability to control monetary policy. The Board of Directors, elected by the shareholders, had some influence over the Bank’s decisions. Although the Governor held veto power and was initially appointed by the government, future Governors would be chosen by the Board and only approved by the government. At the very least, a private central bank could damage confidence in the institutions of government if the public perceived the Bank of Canada as serving banking interests at the expense of others. This concern was evident in the first Board election when a slate of candidates backed by the Canadian Chamber of Commerce won all seats. Some saw this because of the poor organization of the election process and credited the Chamber with arranging for quality candidates.<sup>25</sup> But others, especially the new Liberal government led by Prime Minister W.L. Mackenzie King, saw it as a serious problem. Finance Minister Charles Dunning described it as an “intolerable situation”.<sup>26</sup>

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<sup>19</sup> Canada, Parliament, *House of Commons Debates*, 17th Parl, 4th Sess, Vol. 3 (27 Feb 1933) at 2511.

<sup>20</sup> Canada, *Report of the Royal Commission on Banking and Currency in Canada*, Ottawa, Ontario: Privy Council Office, 1933.

<sup>21</sup> *Ibid*, Vol. 1, p. 11.

<sup>22</sup> Bank of Canada Act, “An Act to incorporate the Bank of Canada,” 24-25 George V, 17th Parliament, 5th Session (1934): 493-516.

<sup>23</sup> *Canada Gazette*, October 23, 1934.

<sup>24</sup> Bank of Canada Act, s 17-19.

<sup>25</sup> M. Stokes, *The Bank of Canada: The Development and Present Position of Central Banking in Canada* (Toronto: The Macmillan Company, 1939), 206.

<sup>26</sup> Canada, Parliament, *House of Commons Debates*, 18th Parl, 1st Sess, Vol. 4 (1 June 1936) at 3264.

The question of whether Canada's central bank should be private was a key issue in Parliament at that time. Opposition leader Mackenzie King, who had been Prime Minister before and would be again later, argued that "the function of a central bank ... is that of subordinating the private interest in banking and credit to the public interest. In no sense should the [Bank of Canada] be, or be permitted to become, a banker's bank. It is and ought to be a government bank."<sup>27</sup> He also warned that "once a nation parts with the control of its currency and credit, it matters not who makes the nation's laws."<sup>28</sup> This was not the only view, to be clear. There are strong arguments in favour of the semi-private structure of the Bank of Canada. The *Royal Commission on Banking and Currency in Canada* argued in 1933 that the central bank should be "free from the fear of interference for political ends in the operating the delicate mechanism of the national monetary and financial machine."<sup>29</sup> Events moved quickly, and an election shortly after the Bank's creation swung the balance.

## Nationalizing the Bank of Canada

During the 1935 federal general election, the opposition Liberal Party did not mince words. They described the private structure of the Bank as "of the Fascist type" and committed to establishing a "properly constituted" Bank of Canada.<sup>30</sup> Following the Liberal Party's victory in the election, the new government took swift action to ensure its control over the Bank. It issued new shares in the Bank of Canada, purchasing them itself to guarantee a 50.5 per cent majority of the outstanding shares. The government also appointed special Directors to create a majority voting position on the Board.<sup>31</sup> Through these measures and several other changes, the government effectively secured full control over the Bank of Canada, although it did not achieve full ownership. Further political pressures soon emerged, however, that prompted the government in 1938 to fully nationalize the Bank of Canada. This move was, in part, a response to a rising political challenge in Alberta.

In the late 1930s, western Canada saw the rise of the Social Credit movement, which aimed to significantly increase the money supply, among its other objectives. The party gained popularity in Alberta and even won the 1935 provincial election, with William Aberhart becoming Premier. Following their victory, Aberhart's new government attempted to implement their ideas by taking control of money and credit in the province. However, this was a problem because money and credit were matters controlled by the federal government, not the provinces. By 1937, they had made multiple attempts to exert provincial control, but the federal government and the courts thwarted these efforts.<sup>32</sup> Frustration in the Alberta government mounted. Less than two weeks after the Supreme Court of Canada's decision in early March 1938 that finally quashed most of the Social Credit agenda, Premier Aberhart announced his intention to extend Social Credit to

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<sup>27</sup> Canada, Parliament, *House of Commons Debates*, 17th Parl, 5th Sess, Vol. 2 (8 March 1934) at 1285.

<sup>28</sup> Canada, Parliament, *House of Commons Debates*, 17th Parl, 5th Sess, Vol. 4 (27 June 1934) at 4365.

<sup>29</sup> Canada, *Royal Commission on Banking and Currency*, Vol. 2, Ch. 5, p. 65.

<sup>30</sup> W.L. Mackenzie King, "The Issues As I See Them," *Maclean's Magazine*, September 15, 1935, p. 30.

<sup>31</sup> Stokes, p. 221.

<sup>32</sup> *Reference Re Alberta Statutes*. [1938] SCR 100.



other provinces. This, he thought, would increase political pressure on the federal government to permit provincial control over money and credit.

Premier Aberhart started in the neighbouring province of Saskatchewan, appointing candidates for its upcoming June 1938 provincial election. The Premier and several Alberta Ministers had actively campaigned across Saskatchewan, advocating for the government to “crank up the money machine”<sup>33</sup> and attributing the Great Depression to “the restriction and manipulation of money by financial monopolists.”<sup>34</sup> The federal government became increasingly alarmed, with Prime Minister King noting in his diary that a resounding defeat of Aberhart in Saskatchewan “would do more to steady the whole of Canada than anything that has happened since our general election.”<sup>35</sup> Likely in an effort to support Saskatchewan's Liberal provincial government during the election period and to explicitly counter the Social Credit movement, the federal government announced its plan to fully nationalize the Bank of Canada, which was achieved within a few months.<sup>36</sup>

While this history is not strictly necessary to understand the Bank of Canada's financial data, which I will discuss in the next section, it is necessary to understand the Bank's place within the broader institutional context of Canadian public finances. If not for these events, the Bank of Canada might not have been consolidated within the federal government's books as it is today. If it had remained a private entity, with non-governmental shareholders electing the Board of Directors, the government may not have the ownership and control needed to justify its inclusion within the public accounts. In general, the government includes entities within the consolidated accounts if it is a legal entity of government, a separate legal entity owned and controlled by the government, or other entities controlled by the government if they are large enough.<sup>37</sup> To clarify, simply being a wholly owned entity of the federal government does not suffice for an entity to be consolidated within the public accounts. However, because the government also exercises control over the Bank, it is consolidated. Other entities, such as the Canada Pension Plan Investment Board (CPPIB), despite being wholly owned by the federal government, are not consolidated because control is exercised jointly with provinces.

## Bank of Canada Finances

Compared to commercial banks, the financial structures of central banks are usually simpler. They produce banknotes, which are an interest-free liability, to purchase interest-earning assets, typically government bonds. As the fiscal agent of the federal government, they also

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<sup>33</sup> Staff, “Just Turn the Crank,” *The Leader-Post*, May 31, 1938, p.4.

<sup>34</sup> Staff, “Manning Attacks ‘Finance Barons’,” *Edmonton Journal*, March 14, 1938, p. 5.

<sup>35</sup> W.L. Mackenzie King, *Archives / Diaries of William Lyon Mackenzie King*, (Ottawa, Ontario: Library and Archives Canada, June 8, 1939).

<sup>36</sup> Staff, “Public Ownership of Bank of Canada Announced by King,” *The Globe and Mail*, May 28, 1938, p. 1.

<sup>37</sup> Government of Canada, “Appendix A.2.2.6 GC 1300 Government Reporting Entity,” (2017) *Directive on Accounting Standards*. Accessed May 14, 2023. Available at <https://www.tbs-sct.canada.ca/pol/doc-eng.aspx?id=32499>.

hold considerable sums as government deposits that can be used to purchase yet more assets. The central bank earns revenue from the spread between its interest earnings and any interest expenses. This revenue is used to cover its direct operating expenses, with the residual typically being remitted to the government.

In this section, I examine the Bank of Canada's financial data, including its assets, liabilities, revenues, expenditures, profits, and losses. A wealth of information is available on the finances of Canada's central bank. While some information, like assets and liabilities, is readily available, other data, such as historical revenues, expenditures, and profits and losses, is not. To provide a comprehensive financial overview, I have collected detailed information from the Bank of Canada's annual reports dating from 1935 to the present. In the early years, the provided information was relatively aggregated, and often did not even report revenues and expenditures separately. However, the data from 1960 onward is more comprehensive. This information is combined with macroeconomic data about prices, gross domestic product, population, and other federal public finance variables. A regularly updated dataset with the latest Bank of Canada financial information will also be available online via the Finances of the Nation website.<sup>38</sup>

## Balance Sheet

As discussed briefly in the introduction, there have been large changes in the size and composition of the Bank of Canada's financial position in recent years. I will delve into these developments shortly, but I'll begin with a broad summary of the Bank's assets and liabilities for 2019 and 2022, as displayed in Table 1.

**Table 1: Summary of the Bank of Canada's Financial Position (\$ Million)**

<b>(a) As at December 31, 2019</b>			
<b>Assets</b>		<b>Liabilities and Equity</b>	
Cash	6	Notes in circulation	93,094
Loans / receivables	15,522	Government deposits	21,766
Treasury bills	23,367	Bank deposits	250
Federal bonds	79,031	Other deposits	3,228
Property / equip.	591	Other liabilities	775
Other assets	1,126	Total liabilities	119,113
		Equity	530
<b>Total</b>	<b>119,643</b>	<b>Liabilities + equity</b>	<b>119,643</b>

<b>(b) As at December 31, 2022</b>			
<b>Assets</b>		<b>Liabilities and Equity</b>	
Cash	14	Notes in circulation	119,726
Loans / receivables	5	Government deposits	66,845
Treasury bills	0	Bank deposits	196,092
Federal bonds – at cost	108,750	Other deposits	10,396

<sup>38</sup> Regularly updated data will be available at <http://www.financesofthenation.ca>.

Federal bonds – fair value	232,357	Other liabilities	17,748
Other bonds	17,120	Total liabilities	410,807
Property / equip.	522		
Other assets	52,039	Equity (deficiency)	(97)
<b>Total</b>	<b>410,807</b>	<b>Liabilities + equity</b>	<b>410,710</b>

*Source: Authors' calculations from various Bank of Canada annual reports*

Consider first the asset side of the balance sheet. Before the pandemic, nearly 85 percent of the Bank of Canada's holdings consisted of interest-earning government treasury bills and bonds. By the end of 2022, the Bank's total assets surpassed \$410 billion due to its large-scale asset purchase programs, primarily driven by increased federal bond holdings but also some mortgage bonds and provincial bonds. Normally, these bond holdings are valued at amortized cost since the intention is to hold them to maturity. But recent bond purchases associated with the asset purchase programs during the pandemic are valued at fair market value since they may be sold at any time depending on the Bank's monetary policy choices. Any losses in the value of these bonds because of rising interest rates, however, are fully indemnified by the Government of Canada. That is, any realized losses that result from bonds being sold before they mature would be covered by the federal government. By December 31, 2022, this amounted to a \$31.3 billion asset of the Bank of Canada.

In terms of equity, the Bank has several reserve accounts that amounted to \$530 million by the end of 2019. These include \$5 million in shares (all owned by the Government of Canada), \$25 million held in a Statutory Reserve to serve as a modest cushion, \$100 million held in a Special Reserve created in 2007 to deal with certain mark-to-market losses, and \$400 million held in an Investment Revaluation Reserve that accumulates certain unrealized gains in the value of assets held at the Bank for International Settlements. The financial losses in 2022, which we will explore in more detail shortly, were initially absorbed by depleting the \$25 million Statutory Reserve to \$0 with all additional losses accumulated within a negative retained earnings account. By the end of 2022, the accumulated deficit was \$1.09 billion and overall equity was negative for the first time in the Bank's history.

Turning to liabilities, these consist largely of banknotes in circulation and deposits of the government and commercial banks. Prior to the pandemic, nearly 80 percent of total liabilities was in the form of currency in circulation and the rest was almost entirely accounted for by deposits held at the Bank of Canada, mainly by the federal government. Commercial bank deposits held at the central bank were minimal by design, as they primarily lent to each other to clear payments at the end of each day. The Bank's asset purchases through the pandemic dramatically increased its liabilities, especially among commercial banks that accumulated significant excess reserves due to the Bank of Canada purchasing so many outstanding bonds. In effect, the Bank of Canada purchased bonds from commercial banks in exchange for what are called "settlement balances", which simply refers to reserves held by commercial banks at the Bank of Canada. These balances earn interest at the prevailing Bank of Canada deposit rate. So, when interest rates rise, so too does the Bank's interest expense on these liabilities.

From a consolidated perspective, all Bank of Canada liabilities are government debt, with some being interest-free (banknotes) and others not (settlement balances). I explore the implications of the large increase in settlement balances for federal debt services costs in a later section.

While the underlying motivation for and effect of the large asset purchases during the pandemic is not the focus of this paper, it is worth appreciating the rationale for this shift in the Bank's balance sheet. In general, the primary way in which central banks conduct monetary policy today is through purchasing and selling assets, primarily government securities. Buying a bond in the open market causes its price to increase and therefore its yield to decrease. Selling a bond does the opposite. This affects interest rates throughout the economy.

This is not the only tool, to be sure. Central banks also can lend directly to financial institutions and charge an interest rate known as the bank rate. But for much of Canada's history, this was not an important policy tool. For example, the initial bank rate was set at 2.5 percent, which was the same rate charged by the Ministry of Finance for advances to commercial banks prior to the Bank's creation in 1934. Unlike today, this rate was not seen as particularly significant and was recognized as "quite out of touch with Treasury Bill rates," to quote Governor Towers.<sup>39</sup> It was there to act as a lender of last resort in times of financial market strain, but there is rarely a need for such lending in normal times. Today, direct lending to financial institutions remains outside the normal conduct of monetary policy. But the flip side of this arrangement—financial institutions lending to the central bank by depositing money with it and earning the deposit rate—is increasingly common. And as evident in Table 1, the volume of bank deposits held at the Bank of Canada grew from an insignificant \$250 million in 2019 to nearly \$200 billion by the end of 2022. As we will see, this will have large implications for the Bank of Canada's total expenses and therefore profits.

Quantitative easing by the Bank of Canada in recent years clearly changed the size of its balance sheet, and some historical context may be informative. Figure 1 depicts the Bank's total assets as a percentage of GDP from its inception until the fourth quarter of 2022. The quantitative easing actions during the pandemic resulted in a roughly 20 percentage point increase in the Bank of Canada's total assets as a share of Canada's GDP. It peaked at over 26 percent in the second quarter of 2020. By the end of 2022, this had declined to less than 15 percent. Moving forward, the Bank of Canada's current policy—in effect since April 2022— involves allowing its bond holdings to mature without replacement, thereby falling off the Bank of Canada books. I project this forward based on economic growth projections from the federal government's Budget 2023 and find that total Bank of Canada assets may return to historically normal levels by 2027 or 2028. This, of course, depends on specific monetary policy choices, and the Bank is free to sell its bond holdings rather than merely await their maturity. Nevertheless, even without such an acceleration, this is a relatively rapid normalization of policy, especially given the scale of the pandemic-related monetary intervention by the Bank.

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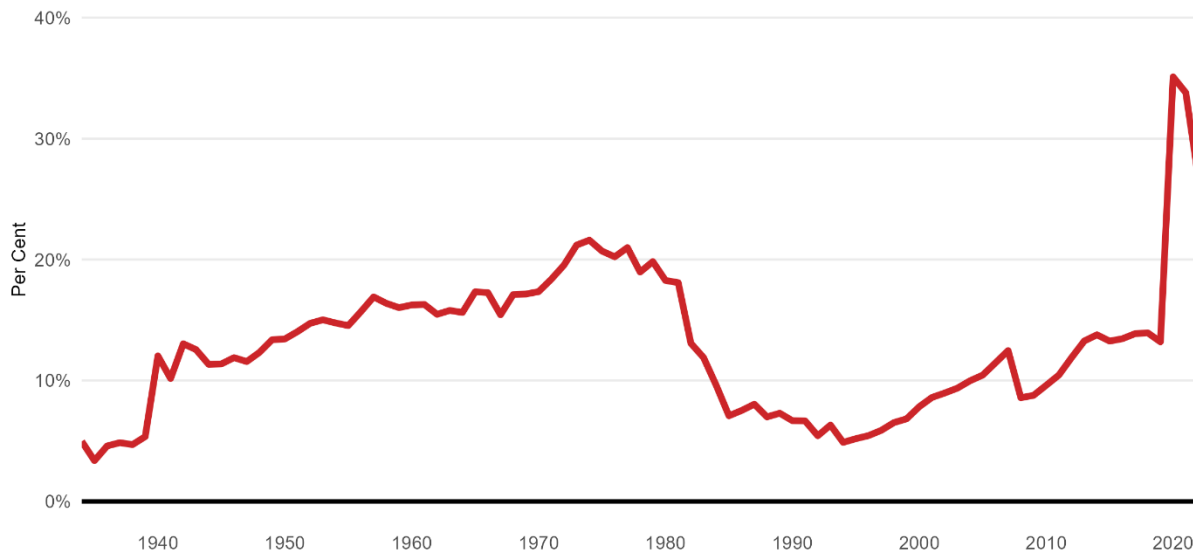
<sup>39</sup> Bank of Canada, *Annual Report of Bank of Canada: First Annual Meeting of Shareholders* (Ottawa, Ontario: Bank of Canada, 1936), 16.

**Figure 1: Summary of Selected Balance Sheet Items**

**(a) Total Bank of Canada Assets as Share of GDP, 1935 to 2028 Q4 (F)**



**(b) Total Government of Canada Bond Debt Holdings of the Bank of Canada as Share of Unmatured Federal Debt, 1934-35 to 2022-23**



*Note: Panel (a) displays total assets of the Bank of Canada as a share of Canada's nominal GDP, annually from 1935 to 1960 and quarterly from 1961 Q2 to 2022 Q4. The projection to 2028 presumes current holdings mature on schedule and are not replaced, and presumes nominal GDP follows projections in Budget 2023. Panel (b) displays the share of outstanding Government of Canada unmatured debt held by the Bank of Canada, reported on a fiscal year basis.*

*Source: Authors' calculations using Statistics Canada tables 10-10-0108-01, "Bank of Canada, assets and liabilities, at month-end (x 1,000,000)," 36-10-0104-01, "Gross domestic product, expenditure-based, Canada, quarterly (x 1,000,000)," the Finances of the Nation Macroeconomic Database, and the Finances of the Nation Federal Debt Database. Unmatured debt for fiscal 2022-23 is from Budget 2023.*

Only one historical period provides anything close to a comparison to the rapid increase in central bank holdings in Canada: World War II, as is evident in Figure 1. Total federal bonds held at the Bank increased by more than a factor of 12 between 1939 and 1945, an equivalent to over 10 percentage points of GDP. To be clear, this was not to deliberately monetize the increase in government spending. Credit expansion was intended to be “small and carefully regulated,” said the Finance Minister in his September 1939 Budget Speech, and constrained to “the early stages of the way in order to assist the increase of production and employment.”<sup>40</sup> The inflationary pressures of such monetization, should it continue, were well known. Instead, the increase in Bank of Canada bond holdings was to offset the rise the public’s demand for cash, perhaps motivated by precautionary concerns during the early phase of the war. When individuals withdrew cash from their commercial bank deposits, this would lower bank reserves. To compensate, the Bank of Canada purchased bonds in exchange for cash, which replenished those reserves. Later, the sharp increase in incomes and employment led to correspondingly large increases in notes in circulation—particularly because armed forces employment relied heavily on cash payments for wages and salaries.<sup>41</sup> But there were important indirect ways in which rising government wartime spending was monetized. Taxation revenues and direct borrowing from the public, at times, were below the government’s expenditure needs. It therefore turned to the banking system to purchase its bonds.<sup>42</sup> Doing so necessitated Bank of Canada purchases of those same bonds to ensure commercial bank reserve ratios were maintained.<sup>43</sup> Overall, though, the government strove to ensure credit expansion was limited only to purposes related to the war effort.<sup>44</sup>

Following the war, the balance sheet shrunk considerably as economic growth resumed and central bank operations normalized. As a share of national GDP, the Bank’s total assets soon returned to approximately 10 percent of GDP by the late 1960s, which was roughly equivalent to its initial pre-war levels. And although the overall size of the Bank’s total assets gradually declined as percentage of GDP—at least until the financial crisis and, later, the COVID-19 pandemic—this does not mean that changes in the composition of Bank assets did not matter. In fact, a significant episode in 1958, although not widely known today, sheds light on several critical principles that can enhance our understanding of recent quantitative easing.

Before turning to that event, we must first distinguish between debt held by the public and debt held by the Bank of Canada. The Bank of Canada’s holdings, as a share of total outstanding Government of Canada unmatured debt—which includes outstanding bonds (including Canada Savings Bonds) and treasury bills—significantly increased to over one-third by fiscal year 2020-21, nearly tripling the share compared to 2019-20. Panel (b) of Figure 1 illustrates this. Since

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<sup>40</sup> J. L. Ilsley, *Budget Speech 1939* (Ottawa, Ontario: Department of Finance, 1939).

<sup>41</sup> Bank of Canada, *Annual Report of Bank of Canada: Annual Report to Minister of Finance and Statement of Accounts for 1942* (Ottawa, Ontario: Bank of Canada, 1943), 5.

<sup>42</sup> *Ibid.*, 10.

<sup>43</sup> *Ibid.*, 7.

<sup>44</sup> Bank of Canada, *Annual Report of Bank of Canada: Annual Report to Minister of Finance and Statement of Accounts for 1944* (Ottawa, Ontario: Bank of Canada, 1945), 12.

debt held at the Bank of Canada represents amounts owed by the government to itself from a consolidated perspective, these holdings are effectively (but not actually) redeemed. However, these holdings are balanced by Bank of Canada liabilities, which, as noted, represent government debt in the consolidated books. I describe how this distinction matters for quantifying the government's debt service costs in later section. But first, to appreciate why the composition of government debt held by the public (excluding the Bank of Canada) matters for understanding monetary policy, I turn to the 1958 episode of quantitative tightening.

## Quantitative Tightening of 1958

Several decades before the term was ever coined, Canada engaged in large-scale quantitative tightening. That is, it sold long-term bonds to redeem short-term ones, which had the effect of raising longer-term interest rates. I briefly summarise this episode here.

As many of the Victory Bonds issued during World War II were reaching their maturity dates, the government sought to persuade their holders to accept longer-term bonds instead of demanding repayment. It was a massive undertaking. At the time, these bonds were worth over \$6.4 billion, which was equivalent to roughly 60 percent of total outstanding government debt.<sup>45</sup> Most of these had maturities in the early-1960s and the government offered various bonds, some with terms as long as 25 years and higher interest rates of 4.5 percent, to those who converted. It was a successful effort and over 90 percent of the Victory Bonds were converted.<sup>46</sup>

While the macroeconomic effect of the conversion program was measured only later, it was anticipated at the time. In short, the government's overall average time to maturity on its outstanding debt doubled, which resulted in a measurable contractionary effect on the Canadian economy.<sup>47</sup> To quote the Finance Minister, "monetary policy and debt management are closely related," who continued that lengthening the government's average maturity "proved to be a major anti-inflationary step."<sup>48</sup> Prime Minister Diefenbaker used similar language in a televised address describing the program to Canadians.<sup>49</sup> Intuitively, the large increase in longer-term bonds outstanding and corresponding decrease in shorter-term debt would tend to decrease the relative price of longer-term debt and therefore increase longer-term interest rates. This is precisely the opposite of modern quantitative easing activities, which issue short-term liabilities (settlement balances) to finance the effective redemption of longer-term bonds. There were some offsetting effects, however. In support of the initiative, the Bank of Canada purchased considerable volumes of long-term bonds and reduced its holdings of short-term bonds, and even itself converted its own Victory Bonds.<sup>50</sup> The opposition Liberals characterized these

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<sup>45</sup> Government of Canada, *Canada Year Book 1959* (Ottawa, Ontario: Dominion Bureau of Statistics, 1959), 1130.

<sup>46</sup> *Ibid.*, 1131.

<sup>47</sup> L.N. Christofides, J.F. Helliwell, and J.M. Lester, "The Conversion Loan of 1958: a simulation study of its macroeconomic consequences," (1976) 9:3 *The Canadian Journal of Economics* 425-441.

<sup>48</sup> D.M. Fleming, *Budget Speech 1959* (Ottawa, Ontario: Department of Finance, 1959), 10.

<sup>49</sup> J. Powell, *The Bank of Canada of James Elliott Coyne* (Montreal & Kingston: McGill-Queen's University Press, 2009), 85.

<sup>50</sup> *Ibid.*, 82.

moves as the “largest expansion of the money supply in any year since the war.”<sup>51</sup> But the net effect of the program was still contractionary.

This history is relevant today, if only to provide context that government debt management activities in general, and quantitative easing and tightening by central banks in particular, is not fundamentally new. Neither are the potential political challenges of such moves. Just as quantitative easing has many critics today, the tightening in 1958 did as well. British Columbia Premier W.A.C. Bennett, for example, called the conversion program “a terrible deal for Canada.”<sup>52</sup> And the higher interest rates that resulted naturally drew opponents. We understand some of the mechanisms differently today, to be clear. At the time, the key mechanism policy makers had in mind was that short-term debt was more liquid than long-term bonds, so the conversion program would reduce overall liquidity and therefore be contractionary. The link between government debt management and macroeconomic conditions was also explicitly considered, whereas today debt management focuses almost exclusively on minimizing financing costs for the government. In any case, such interventions were not then, and are not today, a conventionally used tool. Indeed, it would not be for over 60 years until Canada experienced a similarly large move, though one in the opposite direction.

## Quantitative Easing of 2020-21

The pandemic had significant implications for the conduct of monetary policy by the Bank of Canada. First, the bank lowered its target for the overnight rate by 50 basis points on March 16, 2020. This was an unscheduled rate decision in response to the early disruptions of the pandemic and the sharp drop in oil prices. The bank said at the time that “it is clear that the spread of the coronavirus is having serious consequences for Canadian families, and for Canada’s economy.”<sup>53</sup> Two weeks later, the bank lowered its target for the overnight rate again to 0.25 percent. This was effectively its lower bound.

With short-term policy rates at such lows, the bank introduced two large-scale asset purchase programs, also known as quantitative easing, with the goal of lowering longer-term interest rates and providing monetary stimulus. The first one was the Commercial Paper Purchase Program, where the bank bought short-term commercial paper, which is an important source of funding for businesses. The second and much larger one was the Government of Canada Bond Purchase Program. This involved buying bonds in the secondary market, including both shorter- and longer-term bonds, at a pace of at least \$5 billion per week. The bank said this would “continue until the economic recovery is well underway.” This program continued until April 25th, 2022. As a result, the bank’s holdings of government bonds increased from about \$100 billion before the pandemic to over \$450 billion at its peak in late 2021. The sharpest increase occurred between March and July of 2020, when bank holdings rose by nearly \$250 billion.

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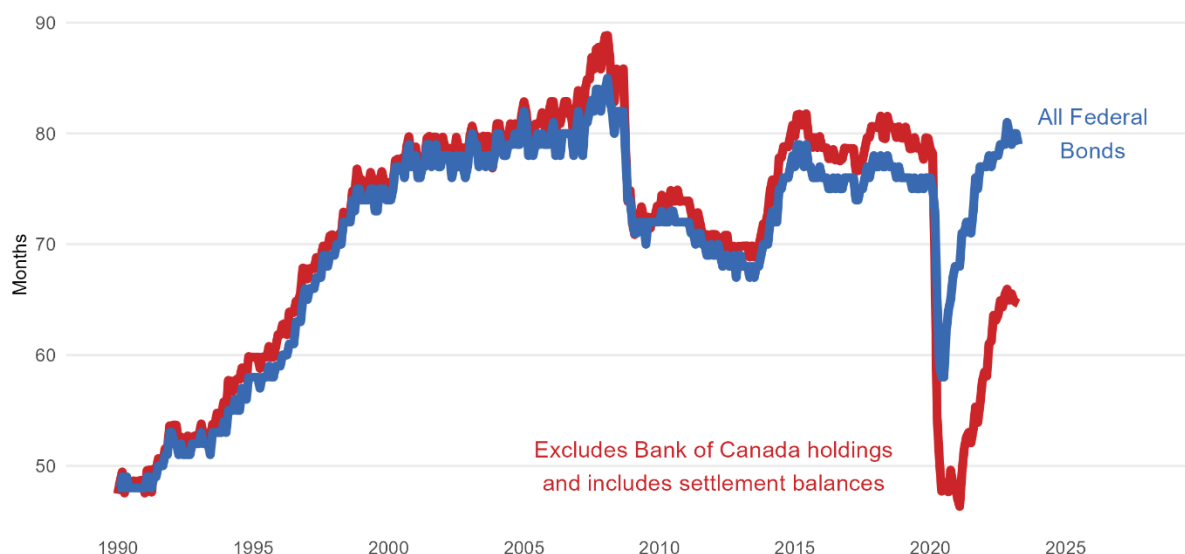
<sup>51</sup> Canada, Parliament, *House of Commons Debates*, 24th Parl, 2nd Sess, Vol. 3 (27 April 1959) at 3073.

<sup>52</sup> *Ibid.*, 78.

<sup>53</sup> Bank of Canada, “Bank of Canada lowers overnight rate target to ¾ percent.” Available at <https://www.bankofcanada.ca/2020/03/bank-of-canada-lowers-overnight-rate-target-to-%C2%BE-percent/>.



**Figure 2: Average Time to Maturity of Government of Canada Debt, 1990 to Apr 2023**



*Note: Displays the time to maturity of federal bonds, with an adjustment that excludes Bank of Canada holdings and includes overnight government borrowings through settlement balances.*

*Source: Authors' calculations using Statistics Canada tables 10-10-0113-01, "Government of Canada direct and guaranteed securities and loans, Bank of Canada," and 10-10-0108-01, "Bank of Canada, assets and liabilities, at month-end (x 1,000,000)."*

The effect of this policy was not largely to increase Canada's money supply as is broadly supposed. As we saw during the previous period of large-scale quantitative tightening, changes in the maturity structure of government debt can affect interest rates. With short-term rates unable to be lowered further, the Bank purchased longer-term securities in exchange for settlement balances. As the latter are effectively floating-rate government debt, the effect was to dramatically shorten the average time to maturity of outstanding government bonds. In Figure 2, I display the average time to maturity of all outstanding federal bonds compared to a broader estimate of all government debt that excludes bonds held at the Bank of Canada and includes settlement balances. The overall effect of quantitative easing in Canada during the pandemic was to lower the average time to maturity by nearly one-fifth, or approximately 1.5 years. This is a large change and likely resulted in material reductions in longer-term interest rates.<sup>54</sup>

This action also increased the share of outstanding federal debt owned by the Bank of Canada. It rose from less than 15 percent of total outstanding bonds, which was roughly in line with historical norms, to over 40 percent.<sup>55</sup> However, as the bond purchase program ended, the Bank of Canada left its holdings of bonds to gradually mature and fall off its books. By April 2023, its overall holdings of government direct and guaranteed securities had declined by over

<sup>54</sup> R. Arora, S. Gungor, J. Nesrallah, G.O. Leblanc, and J. Witmer, "The impact of the Bank of Canada's Government Bond Purchase Program," (2021) 23 *Bank of Canada Staff Analytical Note*.

<sup>55</sup> Source: Authors' calculations using Statistics Canada table 36-10-0580-01, "National Balance Sheet Accounts (x 1,000,000)."

\$100 billion from their peak.<sup>56</sup> Despite this recent decline, the rapid growth in the Bank of Canada's bond holdings had large effects on its revenue and expenditures.

## Revenue and Expenditures

The Bank earns revenues from its investment holdings, largely government bonds as discussed previously. From this revenue, the Bank covers expenditures that include wages and salaries, producing bank notes, buildings, equipment, and so on. It also pays interest on deposits that are held at the Bank of Canada, which I will discuss in more detail shortly. The ability to cover its expenditures from a revenue source that is outside of the normal Parliamentary appropriations process is an important aspect of central bank independence in Canada.

To appreciate the broad patterns of revenue and expenditures, I display the inflows and outflows to the Bank of Canada for 2019 and 2022 in Figure 3. In 2022, total revenues were nearly \$4.4 billion, which was roughly double the pre-COVID level of \$2.3 billion in 2019. The increase in the Bank's total bond holdings accounts for this increase. And while total bonds owned by the Bank of Canada more than doubled, much of the increase was during a time of historically low yields and therefore the weighted average coupon rate on the Bank's total portfolio was lower in 2022 than 2019. In 2019, this rate was approximately 2.2 percent while in 2022 it fell to less than 1.1 percent. All other sources of revenue for the Bank are negligible.

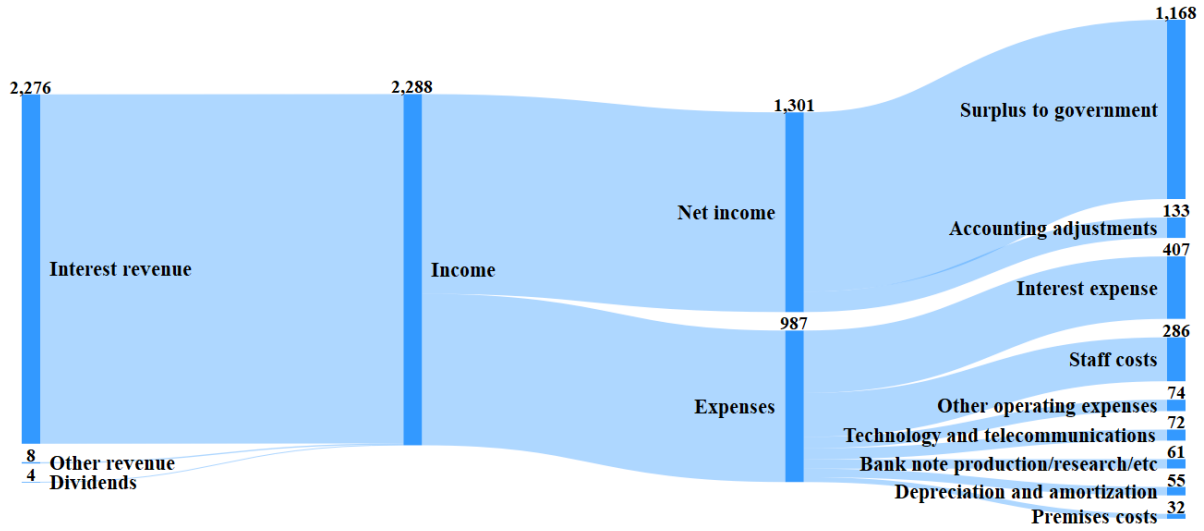
On the expenditure side of the Bank's operations, significant changes are evident between the two years. In 2019, nearly 60 percent of expenses were accounted for by the Bank's normal operating costs, roughly half of which was wages, salaries, and other staff costs. Interest expenses approached \$407 million for the year, nearly all of which was paid to the Government of Canada as deposits of commercial banks were insignificant. It was therefore little more than an accounting entry. The excess of revenues over expenditures was largely remitted to the government. But in 2020, with the advent of large-scale asset purchases by the Bank of Canada discussed in the previous section, commercial banks dramatically increased their deposits at the Bank of Canada. This increased interest expenses to nearly \$800 million in 2020 and to over \$920 million in 2021.

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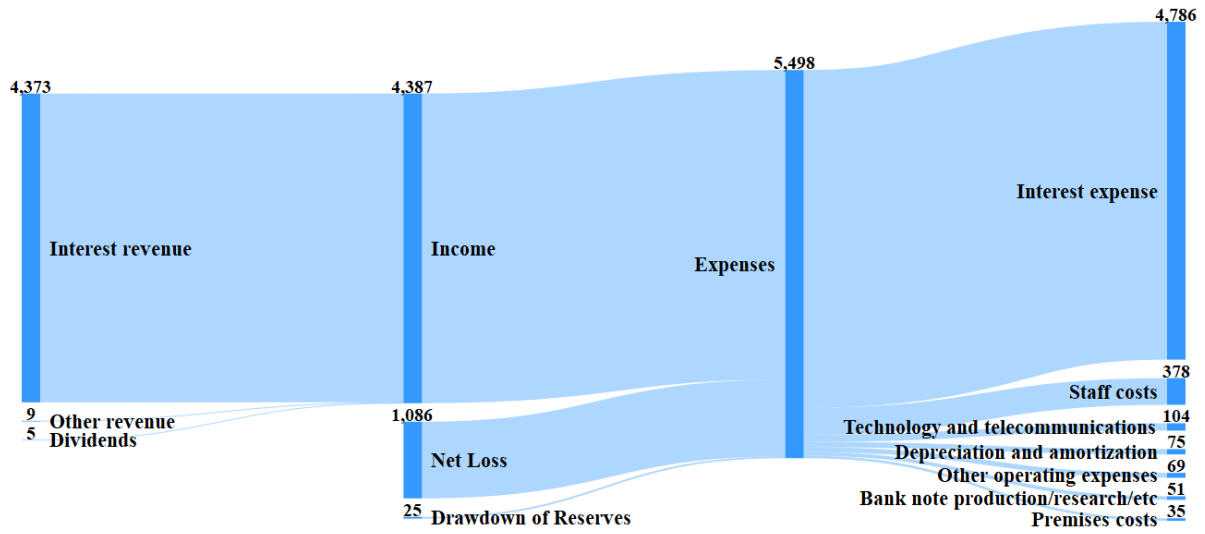
<sup>56</sup> Source: Authors' calculations using Statistics Canada table 10-10-0108-01, "Bank of Canada, assets and liabilities, at month-end (x 1,000,000)"

**Figure 3: Bank of Canada Revenue and Expenditures (\$ Millions)**

**(a) Year Ending December 31, 2019**



**(b) Year Ending December 31, 2022**



Note: Displays the total revenues and expenditures by broad category.

Source: Authors' calculations using various Bank of Canada annual reports.

**Figure 4: Estimated Weekly (Annualized) Bank of Canada Interest Expenses**



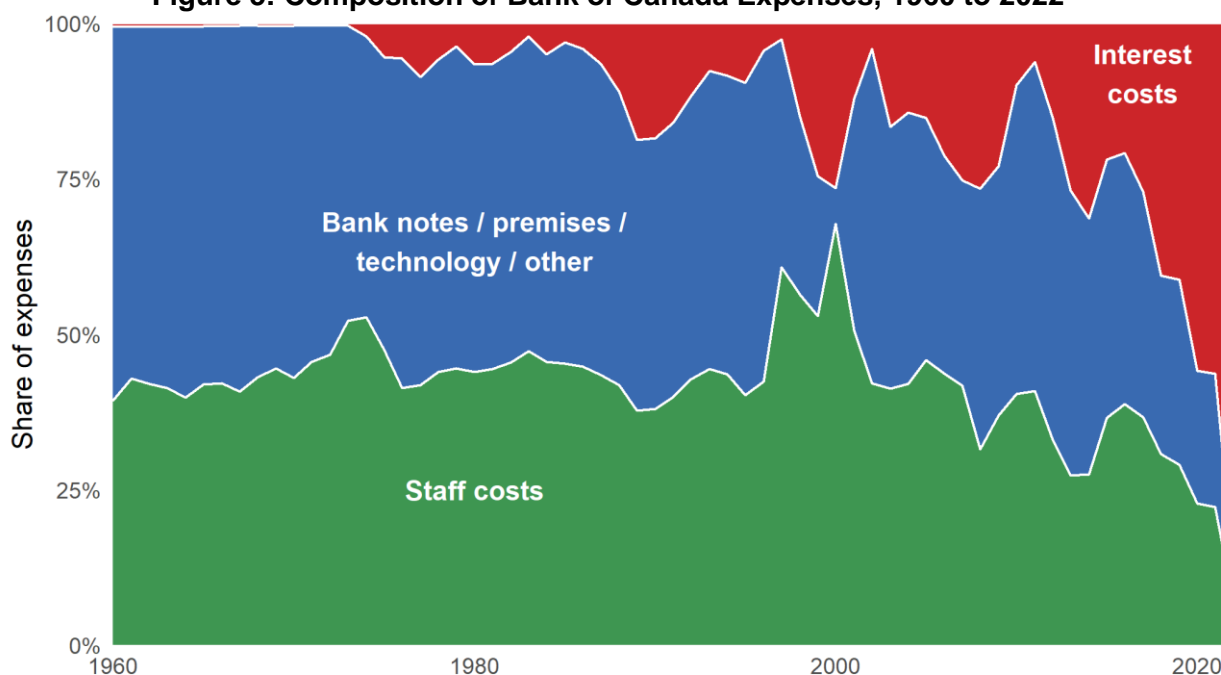
*Note: Displays an estimate of the weekly (annualized) interest expenses of the Bank of Canada paid to depositors.*

*Source: Authors' calculations using Statistics Canada tables 10-10-0136-01, "Bank of Canada, assets and liabilities, Wednesdays (x 1,000,000)," and 10-10-0139-01, "Bank of Canada, money market and other interest rates."*

As inflation rose and central banks around the world tightened monetary policy, the magnitude of expenditures changed significantly. The Bank of Canada's policy rate increases that began in early 2022 brought its target rate from 0.25 to 4.5 one year later. This led to a sharp increase in interest expenses not only for individuals and businesses, but also for the Bank of Canada itself. Settlement balances deposited at the Bank were significant in 2022, as we saw in the previous section, and such balances earn the Bank of Canada's deposit rate, which currently equals the target policy rate. In Figure 4, I plot the estimated weekly interest expenses (annualized). Payments to the Government of Canada were ceased in May 2022 while payments to members of Payments Canada (largely commercial banks) reached a peak of over \$9.4 billion in March 2023. And for calendar year 2022, the Bank of Canada recorded nearly \$4.8 billion in interest expenses. At nearly 90 percent of total spending, this was—by far—the largest expense category. This mattered for the Bank's overall financial position. The large rise in interest meant that for the first time in the Bank's history, it posted a net loss of \$1.1 billion for the year. Its equity position has also, for the first time, turned negative.

The full data series, which is available through Finances of the Nation, also allows for a broader historical comparison of revenues and expenditures. In 1960, for example, the total earnings amounted to approximately \$100 million, while total expenses were only about \$9.5 million. After accounting for depreciation, this left a profit of roughly \$90 million, which was remitted to the Government of Canada. Of the \$9.5 million in expenses, nearly \$4 million was spent on salaries, pension contributions, and other staff-related costs. An additional \$3.5 million went towards banknote production. Consequently, these two categories accounted for over three-quarters of the total operating expenses. Over time, the composition of Bank of Canada

**Figure 5: Composition of Bank of Canada Expenses, 1960 to 2022**



*Note: Displays composition of total expenses of the Bank of Canada from 1960 to 2022. Interest expenses in 1998 are not explicitly reported but instead were netted out from interest revenue. An average of the 1997 and 1999 amounts are reported here for that year.*

*Source: Authors' calculations using various Bank of Canada financial statements.*

changed significantly. In Figure 5, I illustrate the composition of total expenses by broad category. Historically, staff costs accounted for just under half of total expenses and other expenses from bank note production, premises, technology, depreciation, and other expenses accounted for the rest. In 1960, for example, this accounted for approximately \$4 million dollars while bank note production accounted for \$3.5 million. Interest expenses that year were a negligible \$45,000. These expenses were not paid to deposits at the Bank of Canada per se, but instead were paid to unclaimed deposits that are held in trust by the Bank of Canada on behalf of individual Canadians. If left unclaimed for long enough, they eventually revert to the Government of Canada. From the late 1990s onward, interest expenses grew to an increasingly large share of the total.

Going forward, much will depend on whether settlement balances remain large. This is itself a policy choice, and one that at the time of writing appears possible. If it does, changes in interest rates will have large implications for the Bank of Canada's total expenditures and therefore also on the magnitude of its profits and losses.

## Profits and Losses

Profits generated by the Bank of Canada and remitted to the government have fluctuated significantly over time. Figure 6 presents the complete series up to 2022. When the bank was

first established in 1935, the profits paid to the government were just under \$350,000, while private shareholders received nearly \$240,000 in dividends. Adjusted for inflation, this equates to approximately \$7 million paid to the government from the Bank's profits. During the late 1930s, these profits increased gradually and then rose during the Second World War, as the bank's bond holdings grew. By 1945, profits remitted to the government exceeded \$22 million, which is equivalent to \$370 million today. The highest inflation-adjusted remittances occurred in 1981, approaching \$5.7 billion. Prior to the pandemic, the profits remitted to the government were \$1.2 billion. The profits in 2020 and 2021 were \$1.8 billion and \$2.8 billion, respectively.

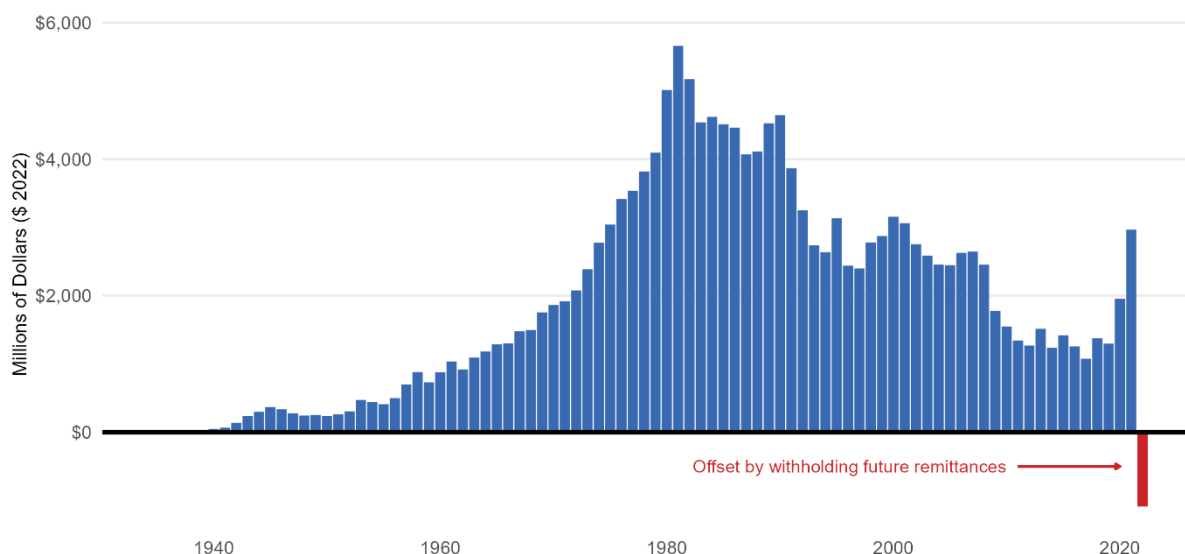
Financial losses in 2022, which approached \$1.1 billion, means there is no surplus to remit and are accumulated at the Bank in the form of negative equity—as indicated in Table 1. This situation created a novel legal and accounting challenge for the Bank of Canada. The original Act did not contemplate the use of Bank surpluses for anything other than accumulating reserve accounts or remitting to the Government of Canada. When the Bank of Canada returns to a surplus position, it would therefore not be permitted to use those funds to rebuild its negative equity. To allow future surpluses to be withheld by the Bank and return its negative retained earnings account to zero, the federal government amended the Bank of Canada Act as part of the Bill that implemented Budget 2023.<sup>57</sup> Going forward, all future surpluses will be allocated towards restoring the Bank's equity before any remittances to the government are made.

Overall, while these remittance figures represent substantial sums, they are relatively modest in relation to the Canadian economy's overall size. On average, remittances have accounted for 0.2 percent of GDP. In real per capita terms, this amounts to just over \$70 per person per year. In the context of the federal budget, these remittances have contributed varying proportions of total revenue. At their peak, they averaged just over 1 percent of total revenue. In the early 1980s, they reached nearly 3 percent of total revenue. However, in recent years, remittances have consistently represented less than half a percent of total revenue. And while losses in 2022 do not result in a payment from the Government of Canada to the Bank of Canada, the loss appears on the government's books as a negative entry with Other Revenue, just as losses at any Crown Corporation would.

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<sup>57</sup> Bill C-47, *An Act to implement certain provisions of the budget*, 1st Session, 44th Parliament, 2023.

**Figure 6: Profits Remitted to the Government of Canada, 1935 to 2022**



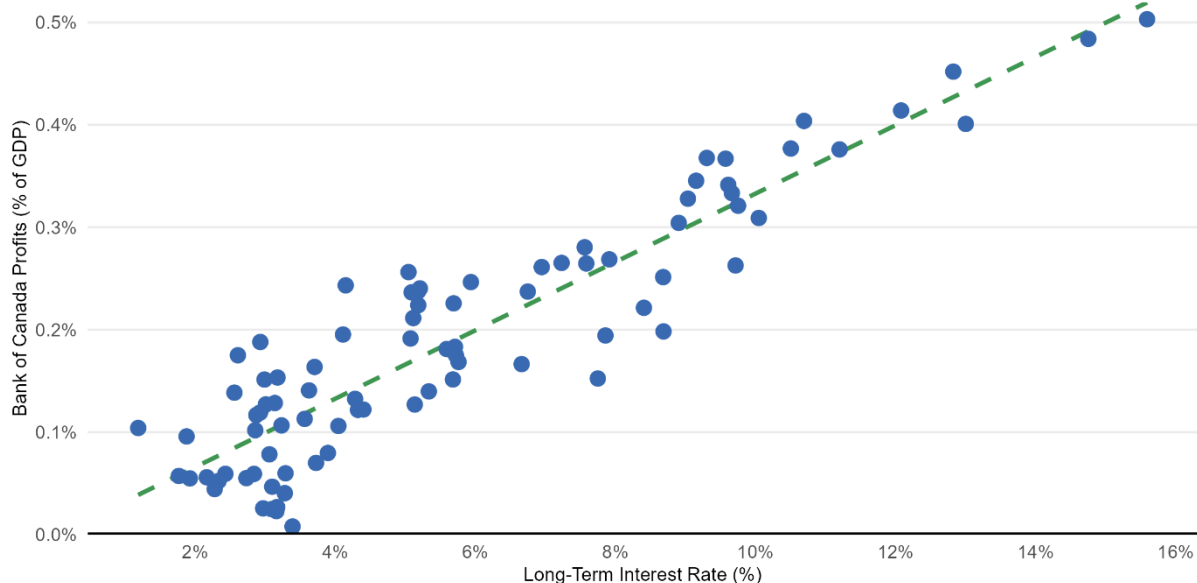
*Note: Displays profits of the Bank of Canada remitted to the Receiver General for Canada, in 2022 dollars, on a calendar year basis. May not correspond to values reported in the public accounts, which are on a fiscal year basis for the year ending March 31.*

*Source: Authors' calculations using various Bank of Canada financial statements and Statistics Canada data table 18-10-0005-01.*

Post-COVID losses aside, what accounts for the variation in profits over time? Bank of Canada revenues tend to increase when interest rates are high. While any specific government bond has a fixed coupon rate that does not change with market fluctuations, as some of these bonds mature and are replaced by new ones the aggregate revenue from bond holdings will gradually reflect prevailing interest rates. Figure 7 shows this relationship for all years since the Bank of Canada started operating. Bank profits reached nearly 0.5 percent of GDP when interest rates were around 16 percent. There is a strong and positive correlation between bank profits and long-term interest rates. Most of the variation in bank profits over time can be explained by changes in interest rates.

Going forward, this relationship may change. If the Bank adopts as its approach to monetary policy a system where commercial bank settlement balances are large—which is known as a “floor system”, since the Bank’s target policy rate creates a floor for the deposit rate paid on settlement balances—then interest expenses will move up and down immediately with any interest rate change. The Bank’s revenues, however, will rise and fall with interest rate changes only gradually as its bond portfolio accumulates new assets that replace older maturing ones. Bank profits may therefore become more volatile. Alternatively, the Bank could return to the “corridor system” that prevailed before the pandemic. In such a system, settlement balances are negligible and therefore interest expenses paid to commercial banks are trivial.

**Figure 7: Bank of Canada Profits vs Long-Term Interest Rates, 1935 to 2021**



*Note: Displays profits of the Bank of Canada remitted to the Receiver General for Canada as a share of GDP vs long-term Government of Canada interest rates.*

*Source: Authors' calculations using various Bank of Canada financial statements, Finances of the Nation Macroeconomic Database, interest rates from 1935 to 1975 from J. Óscar, M. Schularick, and A.M. Taylor, "Macrofinancial History and the New Business Cycle Facts." in NBER Macroeconomics Annual 2016, volume 31, eds. M. Eichenbaum and J.A. Parker (Chicago: University of Chicago Press, 2017), and interest rates for 1976 onwards from Statistics Canada table 10-10-0122-01, "Financial market statistics, last Wednesday unless otherwise stated, Bank of Canada."*

## Implications for Federal Debt Service Costs

As mentioned earlier, the Bank of Canada is an Enterprise Crown Corporation that is fully consolidated within the government of Canada's financial statements and public accounts. Bonds held by the Bank of Canada essentially represent bonds held by the government itself. This has implications for how we should measure the government's debt service costs.

First, when those bonds are government bonds, interest payments made by the government to the Bank of Canada are, at least economically, just bookkeeping entries. After all, since any surplus of the Bank of Canada is remitted back to the government, any additional dollar paid by the government to the Bank is ultimately returned. This is a real reduction in debt service costs relative to what is normally reported because these bonds would otherwise have been held by the market. When held by the Bank we should perhaps not consider payments by the government servicing those bonds as federal debt service costs. Currently, the public accounts include such payments within its measure of debt charges.

Second, to purchase those bonds the Bank of Canada increases its liabilities, which, as previously discussed, is also a form of government debt. Concretely, it offers currency or deposits held at the central bank (settlement balances) to purchase bonds from the market.



Settlement balances of commercial banks held at the Bank of Canada are effectively interest-earning overnight loans to the government. Payments of interest on those commercial bank deposits held at the Bank of Canada are therefore like debt interest payments made by the government to its lenders. In the public accounts, however, settlement balances are not considered borrowing and interest expenses of the Bank of Canada are not included in the government's overall debt charges. Instead, such payments are treated like any other expense item of the Bank of Canada's. It lowers profits (or increase its losses), which is recorded as a decrease in revenue for the Government of Canada, as would be the case with lower earnings at other Crown Corporations.

One can use information in the Bank of Canada financial statements to adjust the reported debt charges in the public accounts to reflect this broader measure of overall debt service costs. Intuitively, the relative spread between earnings on the Bank of Canada's asset holdings and interest expenses on its liabilities is what matters. If the latter is larger than the former, then overall debt service costs—broadly considered—will be larger than reported in the public accounts. For example, if the public accounts report \$1,000 in debt service costs and Bank's financial statements report \$100 in interest expenses on settlement balances and \$50 in revenue from earnings on its holdings of Government of Canada bonds, then one can say overall government debt service is \$1,050. This follows from \$1,000 minus \$50 (to exclude debt payments made by the government to the central bank, i.e. to itself) plus \$100 (to include interest paid on settlement balances).

With the Bank of Canada's policy rate reaching 4.5 percent by early 2023 and an average return on its bond holdings closer to 1 percent, the magnitudes of this adjustment can be large. Consider February 2023, which was the latest monthly data available at the time of writing. According to the federal fiscal monitor, the total debt charges for that month amounted to approximately \$2.6 billion.<sup>58</sup> I estimate that approximately \$360 million of those payments flowed to the Bank of Canada for bonds it held, so do not represent a real interest cost for the government and should be subtracted. I additionally estimate, based on Figure 4, that the monthly interest paid by the Bank of Canada on settlement balances was \$700 million and should be added. Total debt service costs for the government were therefore nearly \$3 billion, or roughly 13 percent higher than reported in the fiscal monitor. It is not that such costs are unreported. Instead, as noted previously, they appear as negative entries in the government's other revenues from Crown Corporations and not as debt service costs. But if we view settlement balances as a short-term liability of the government, as they are, then payments on interest on those balances should be viewed more appropriately as debt service. And since the interest rate on settlement balances moves with the Bank of Canada target policy rate, quantitative easing by the Bank of Canada have also made the broader government's overall debt service costs more sensitive to interest rate changes.

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<sup>58</sup> Finance Canada, "The Fiscal Monitor - February 2023." Accessed May 9, 2023. Available at <https://www.canada.ca/en/department-finance/services/publications/fiscal-monitor/2023/02.html>.

## Conclusion

This paper has provided a summary of the Bank of Canada's finances from its inception in 1935 to the present, shedding light on the historical, political, and economic factors that have shaped its role in Canadian public finances. And it presents newly compiled data, made available through Finances of the Nation. By examining the evolution of the Bank's balance sheet, revenue streams, and expenditures, it has highlighted the sometimes opaque connections between the central bank and the federal government's fiscal operations. The unprecedented expansion of the Bank's balance sheet due to quantitative easing during the COVID-19 pandemic has underscored the importance of understanding these connections.

The findings of this study not only enhance our understanding of the Bank of Canada's financial history but also contribute to ongoing discussions on central bank independence, the interplay between monetary and fiscal policy, and the economic consequences of unconventional monetary policies. There is considerable value in understanding the Bank's finances separately from the broader federal government. Analyzing changes in the size and composition of assets and liabilities, along with the spread between the return on assets held at the Bank and the interest paid to service its liabilities, offers crucial insights into the overall government debt service costs. Notably, the recent rise in interest rates, coupled with the abundance of interest-earning settlement balances at the Bank of Canada, has led to a material increase in a broader measure of interest expenses of the Government of Canada. Indeed, the increase in debt service costs are larger than what is reported in the Public Accounts of Canada, which include payments on bonds held by the Bank of Canada but exclude the rapidly increasing interest expenses of the Bank paid on settlement balances. As the central bank continues to navigate an ever-evolving economic landscape, understanding its financial position and its implications for public finances is essential to making informed decisions that promote the economic and financial welfare of Canada.