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CROWN CORPORATIONS' COVID-19 LIQUIDITY SUPPORT

OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
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The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report summarizes the federal package of COVID-19 liquidity support programs provided through five federal Crown corporations. PBO estimates total liquidity supports through August 2020, and highlights gaps in publicly-available risk metrics for these supports.

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Summary

The economic and financial fallout of the COVID-19 pandemic necessitated financial liquidity supports for businesses, governments and financial markets. This report summarizes the federal package of liquidity support programs, estimated at up to $422 billion through August 2020. The report also summarizes information (and information gaps) regarding expected and potential losses for these liquidity supports.

Federal liquidity support programs are mostly repayable and are thus unlikely to have large budgetary effects. Nevertheless, they represent large increases on the gross federal financial footprint. For example, PBO expects that these programs could result in a significant increase in gross assets and liabilities in some Crown corporations.

- Growth in the Bank of Canada's balance sheet resulting from the COVID response is from $123 billion in February to $543 billion in August. Excluding purchases of Government of Canada debt securities, the Bank's liquidity support reached $186 billion in August. This data is current and quantifiable because the Bank publicly reports on a weekly basis the status of its liquidity supports (a best practice).

- In agent Crown corporations (Farm Credit Canada, Export Development Canada, Business Development Bank of Canada, and Canada Mortgage and Housing Corporation), liquidity supports could reach $236 billion, up to a 20 per cent increase on the Government's pre-COVID liabilities.

These actions have increased the Government's exposure to risk. The federal government is the sole shareholder of these Crown corporation and is directly affected by gains or losses in these programs. However, reporting on the probable or potential budgetary costs of liquidity supports has been lacking.

- The Bank of Canada is a unique case. As an operationally independent central bank, it is unlikely to realize material, permanent losses. Its asset purchases are collateralized and of high credit quality. Budgetary risks are remote.

- Financial risks from agent Crown corporations are more direct – bad debts would have budgetary effects. Yet, thus far these risks have not been quantified. Nonetheless, PBO has estimated that liquidity support programs will have relatively small budgetary costs for some Crowns. That said, neither the Government nor agent Crown corporations have released estimates of expected gains and losses. They have also not provided assessments of downside risks on these programs.

Given the depth of expertise required and possession of client-level data, the Crown corporations themselves are best-placed to report on financial risks. Parliamentarians may wish to encourage agent Crown corporations to provide estimates of expected gains or losses on COVID liquidity supports, along with analysis of potential downside risks on the extraordinary increases in Crown corporations' lending.

Furthermore, parliamentarians may also wish to request regular updates of scenario analysis to better facilitate financial scrutiny in real time. Parliamentarians were asked to vote on legislation to support $236 billion in COVID liquidity measures but lacked estimates of expected or potential losses. The legislative timelines for COVID liquidity support highlighted a meaningful lag between the moment the Government seeks Parliament's authority to engage in enhanced agent Crown corporation lending and its first update to Parliament of expected gains or potential losses. Summaries of scenario analysis, already produced by all financial Crown corporations for internal use, and published by some, could function as guidelines to temporarily fill future information gaps.

1. Context

Given the severity of the economic and financial effects of the COVID-19 pandemic, large-scale financial market interventions in March and April 2020 were necessary to safeguard economic and financial stability, and to prevent a negative macro-financial feedback loop.[1]

Since the onset of COVID-19, PBO's analysis has focused mainly on the Government's direct spending, because these measures have direct budgetary effects and will lead to an accumulation of federal debt.[2] Tax and liquidity support measures offer temporary financial support to targeted populations, but are generally repayable (as loans, credit guarantees or deferred tax payments). [3,4] Therefore, PBO expects these measures will have a small budgetary impact relative to the gross amounts of financial support.

Despite making a relatively small incremental net impact on the accumulated deficit, liquidity support programs are large increases on the gross federal financial footprint. PBO expects that these programs could result in significant increases in gross assets and liabilities in some Crown corporations (Table 1-1).[5,6] Expansions in lending by each will impact the Government of Canada's exposure to risk, because while these corporations enjoy considerable operational, legal, and financial independence from the government, the Government of Canada is the sole shareholder in each. Changes in the value of equity in all enterprise Crowns is ultimately reflected in the net worth of the federal government.

Table 1-1 The Government of Canada's COVID-19 economic response

$ billions	
Direct spending	214
Tax support	85
Liquidity support	422
Capital relief	300

Sources: Government of Canada and PBO.

In this report, PBO responds to questions received from several parliamentarians about federal liquidity supports. We describe the basic purpose of each federal liquidity program, put into context how these supports affect the operations of the implementing Crown corporations, identify budgetary costs and summarize information on risks already disclosed publicly. This report is a financial accounting exercise from the perspective of the Government of Canada broadly, not the perspective of any single Crown corporation.[7]

2. COVID-19 liquidity supports

Five enterprise Crown corporations are providing federal liquidity support: Bank of Canada, Farm Credit Canada, Export Development Canada, Business Development Bank of Canada and Canada Mortgage and Housing Corporation. These federally-owned corporations have public policy mandates and are the segments of the federal apparatus designed to enter into financial transactions with non-governmental entities.[8]

All five organizations are enterprise Crown corporations, meaning they raise substantial portions of their revenues through commercial business activity and are therefore considered self-sustaining without government appropriations.[9]

Overall, gross liquidity support provided by federal enterprise Crown Corporations reached $422 billion through August 2020 (Table 2-1).[10] More details about individual programs put in place by Crown corporations are available in Appendix A.

Table 2-1 COVID-19 Economic Response Plan measures

$ billions

Crown corporations	Total envelope
Bank of Canada*	186
Canada Mortgage and Housing Corporation (CHMC)	150
Export Development Canada (EDC) †	61
Business Development Bank of Canada (BDC)	20
Farm Credit Canada (FCC)	5
Total	**422**

Sources: COVID-19 Economic Response Plan, Bank of Canada and PBO.

Notes: (*) excludes $234 billion in purchases of Government of Canada debt.

Excludes mid-market financing programs by EDC and BDC, expansion of direct lending through existing credit options by BDC and EDC, and the bridge financing program by BDC because these programs do not have envelope amounts. Program parameters are still being decided, and public cost estimates are unavailable.

(†) For this report, we have included CEBA under EDC liabilities. We have also included the entire $20 billion for the Small and Medium Enterprise Loan Guarantee under EDC liabilities as this represents their maximum exposure.[11]

2.1. Bank of Canada

The pandemic and the failure of Organization of the Petroleum Exporting Countries (OPEC) negotiations resulted in volatility and price adjustments in key financial markets. In response to these shocks, the Bank of Canada has introduced several large-scale asset purchase programs to increase liquidity in core funding markets, given its role as lender of last resort. The Bank has put in place a range of programs specifically for the federal government, the provinces, financial institutions and corporations. These programs are used primarily to exchange debt securities for liquidity.

Overall, Bank of Canada supports provided an additional $420 billion in liquidity in the economy at the end of August compared to the end of February 2020. This includes $234 billion in federal government securities. The remaining $186 billion includes provincial, municipal and private-sector securities, as well as other assets such as reserves.

Programs specific to financial institutions

The Bank introduced programs to facilitate access to credit through financial institutions. The Bank has begun to accept a wider variety of assets through repurchase agreements (repos) in order to allow them to access more liquidity as a way to meet credit needs.

The Bank expanded and increased the frequency of its term repo programs. The main differentiation between these programs is the quality of collateral. The price of credit associated with these programs is contingent on the value of the collateral so that riskier assets are subject to a higher interest rate.

At the end of August, the additional value of the Bank's repos was $170 billion. This includes $1 billion in Government of Canada securities and $169 billion in provincial, municipal and private-sector securities[12].

Programs specific to corporations

The Bank also introduced programs to ensure that corporations benefit from easier access to credit given the loss of revenue from reduced operations due to health regulations.

Bankers' acceptances, commercial paper and corporate bonds on the Bank's balance sheet totalled only $0.1 billion as of the end of August 2020. This is down significantly from the peak of $40.7 billion reached on April 8, 2020.[13]

Programs specific to the financial system

The need for liquidity has been felt throughout the world. As a large proportion of global transactions are denominated in US dollars, the Bank announced in March that it was working with other central banks to facilitate currency conversion through swap agreements.

The Bank also introduced programs to purchase government securities and Canada Mortgage Bonds on the secondary market.[14] These programs added the equivalent of $129 billion in federal securities to the Bank's balance sheet at the end of August 2020. They also added the equivalent of $8.4 billion in provincial securities.

Programs specific to the federal and provincial governments

The pandemic has forced the various orders of government to boost spending at a time when credit is very tight. To ensure well-functioning primary markets where government debt is sold, the Bank of Canada began buying provincial debt and increased the share of Treasury Bills it purchases at each auction.

These programs represent the equivalent of $17 billion in federal securities on the Bank's balance sheet at the end of August 2020. They also represent the equivalent of $7.4 billion in provincial securities.

In addition, the Bank increased its liquidity support through normal operations by $88 billion, constituted mostly through federal securities.

2.2. Agent Crown corporations

Up to $236 billion in liquidity support is being provided through four agent Crown corporations. Certain measures that have not been costed or have a program envelope are not included in this figure, but these measures have been noted in Appendix A.

Canada Mortgage and Housing Corporation

Under the Insured Mortgage Purchase Program (IMPP), the Government will purchase up to $150 billion of insured mortgage pools through CMHC. The objective of the IMPP is to provide financial market liquidity to ensure continued lending to businesses and individuals. The IMPP was last used in the 2008 to 2010 period.

Export Development Canada

The purpose of EDC's liquidity supports are to help businesses of all sizes that have been impacted by COVID-19 temporarily cover rent, payroll or other business operating costs.[15]

EDC launched a $20 billion loan guarantee program for small and medium-sized enterprises. These guarantees cover up to 80% of the principal of new loans to SMEs, to a limit of $6.25 million per SME.[16]

EDC is also responsible for administering the Canada Emergency Business Account (CEBA), which the Government has estimated at $55 billion. Under CEBA, small businesses and not-for-profits can access interest-free loans of up to $40,000. Part (25 per cent) of the amounts repaid on or before December 2022 is forgiven (up to $10,000), representing a budgetary cost to the government. Only the $41 billion repayable portions of CEBA support are considered in this report.

Business Development Bank of Canada

The purpose of providing BDC-backed loans is to make credit more readily available for small and medium sized companies that require greater help to meet their operational cash flow requirements.[17]

BDC launched a $20 billion co-lending program for SMEs, which is co-financed by BDC and the SME's primary financial institution.[18]

Farm Credit Canada

FCC will extend an additional $5 billion in credit and liquidity support for the agricultural sector, with the intent to alleviate industry financial pressure.

3. Balance sheet impacts of COVID-19 liquidity supports

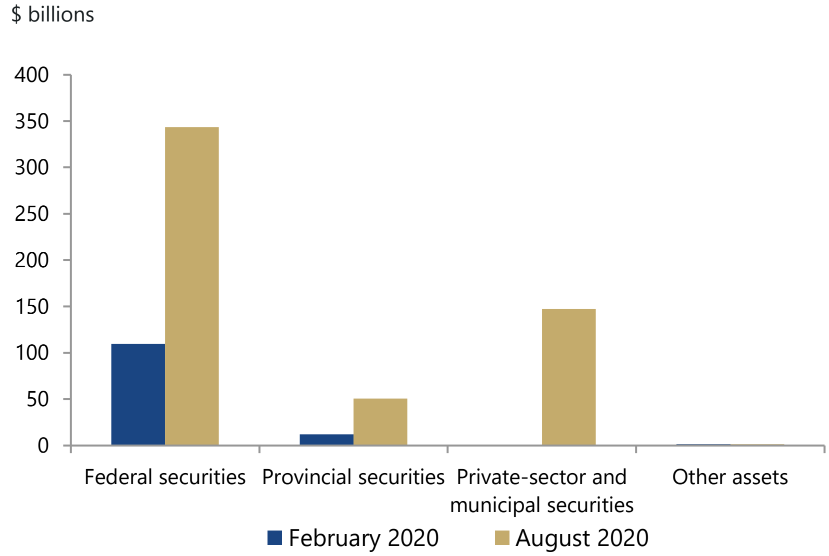
3.1. Bank of Canada

As a result of the Bank of Canada’s new policies, the assets on its balance sheet grew significantly, from $123 billion in February to $543 billion by August 2020.

Figure 3-1 compares the composition of the Bank’s balance sheet in August and February, illustrating the fact that the Bank’s recent acquisitions cover all types of assets. Compared to the pre-pandemic situation, the Bank increased its asset holdings by $420 billion. The new acquisitions are made up mostly of Government of Canada securities ($234 billion) and private-sector and municipal securities purchased under resale agreements ($146 billion). Provincial securities purchased under resale agreements accounted for much of the remaining asset purchases ($23 billion). The increase in non-federal securities is shown in Figure 3-2.

In total, public and private assets purchased under resale agreements amounted to $186 billion in August compared with $15 billion in February, an increase on the Bank’s balance sheet of $170 billion.

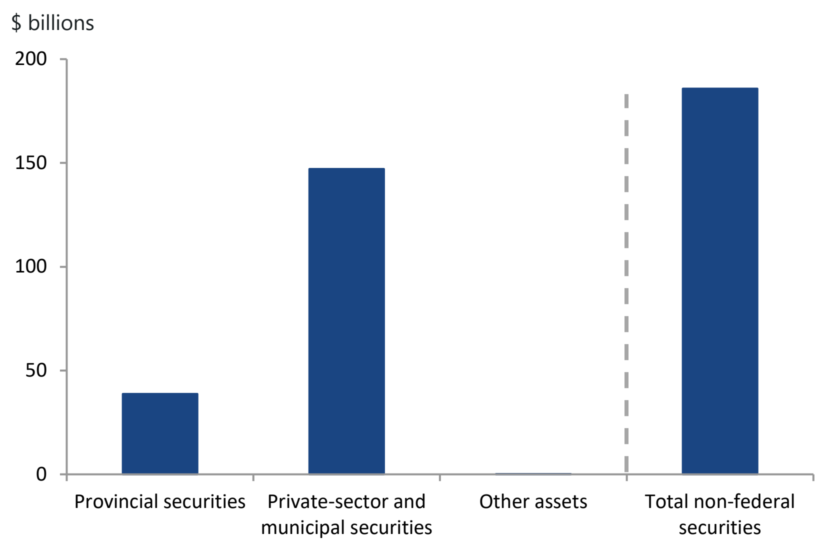
Figure 3-1 Changes to Bank of Canada assets by category



Sources: Bank of Canada and PBO.

Note: The Bank's balance sheet assets totalled $123 billion in February 2020 and $543 billion in August 2020.

Figure 3-2 Increase in non-federal securities held by the Bank of Canada since the start of the pandemic



Sources: Bank of Canada and PBO.

Note: Total non-federal assets held by the Bank increased by $186 billion between February and August 2020.

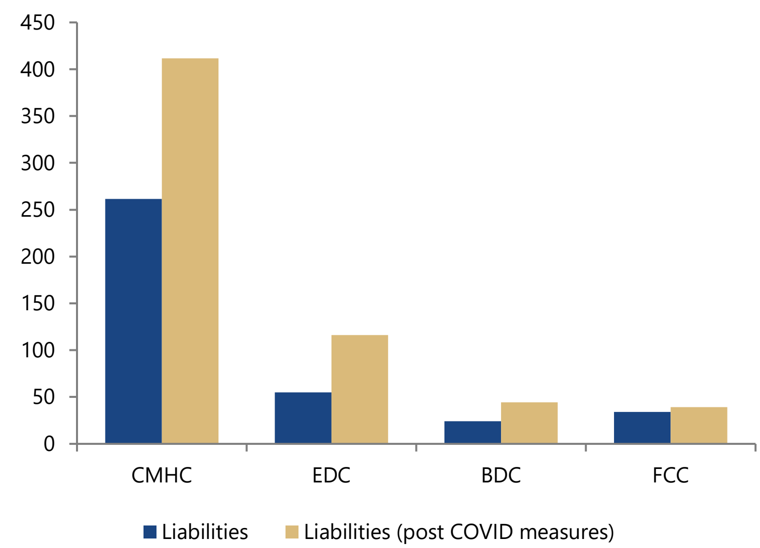
3.2. Agent Crown corporations

Overall, gross liquidity support provided by agent enterprise Crown corporations could reach $236 billion in 2020-21.[19]

For some agent Crowns, COVID liquidity supports represent extraordinarily large expansions of their financial operations, as shown in Figure 3-3.[20]

Figure 3-3 Effects of COVID-response on Crown corporations' financial exposure

$ billions



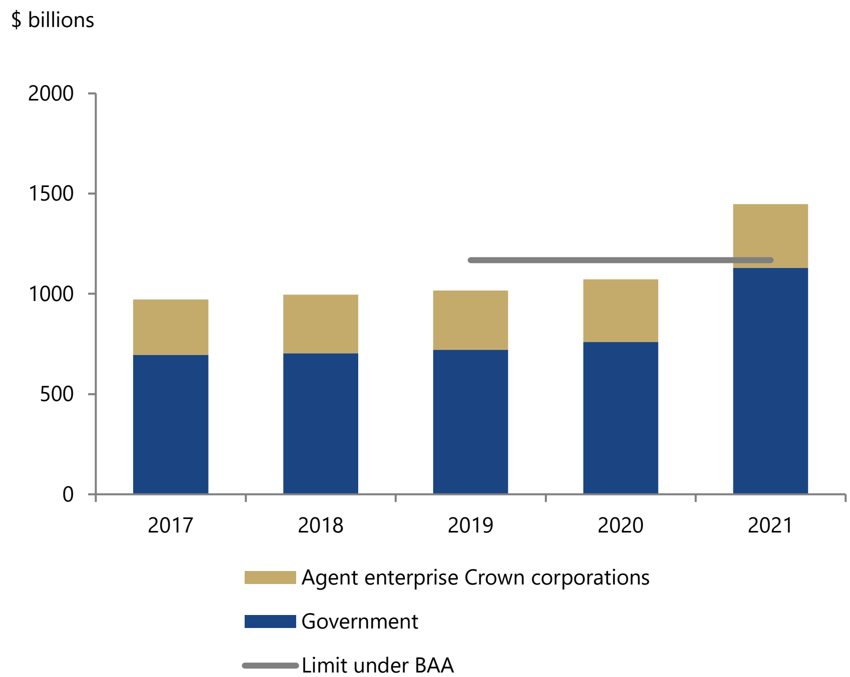
Sources: CMHC, EDC, BDC, FCC and PBO.

Even in the context of the federal government, broadly defined, the $236 billion in liquidity supports are significant increases on the status quo. The Government's COVID-19 liquidity response constitutes up to a 20 per cent increase on total federal liabilities entering the crisis.

Parliament governs increases in Crown corporations' lending through capitalization limits, but also via legislation – the *Borrowing Authority Act* and the *Financial Administration Act*. Together, these Acts allow the Minister of Finance to borrow money up to a maximum amount as approved by Parliament. In 2017, Parliament approved a $1,168 billion limit on government and agent Crown corporations. Bill C-13, which received Royal Assent on March 25, 2020, provides the Minister of Finance a temporary exemption to this limit until 30 September 2020. Based on Finance Canada's projection of market debt and PBO forecasts for Crown borrowing, total borrowing could surpass the maximum amount under the BAA by $280 billion (Figure 3-4).

Analysis of the budgetary costs and risks associated with this borrowing increase are examined in the next section.

Figure 3-4 Government borrowing and the Borrowing Authority Act



Sources: *Borrowing Authority Act*, Finance Canada and PBO.

Program participation

The demand for the liquidity support programs has been uneven, which makes estimating the potential terminal effects of COVID-19 measures on their balance sheets challenging.

Basic details regarding implementation status and take-up rates can be found in the Department of Finance’s bi-weekly reports to the House of Commons Standing Committee on Finance (FINA). The following information is based on the 10th biweekly report provided on August 6, 2020.

Certain programs have been undersubscribed relative to their total envelopes. CMHC’s IMPP purchases have totaled only $5.8 billion, while EDC’s BCAP SME Loan Guarantee and BDC’s SME Co-Lending programs have only authorized $503 million and $548 million, respectively.

By contrast, the Canada Emergency Business Account has seen significant uptake with $28 billion of credit being approved. Both BDC and EDC have also seen significant increases in access to credit support through existing programs.

FCC has reported that payment deferral options have been used on loans totalling $5.1 billion, while $3.5 billion in new loans have been extended, with just over 50 per cent used for capital investments.

All other programs have not yet reported to FINA on take-up rates.

Upon request, Crown corporations are periodically providing PBO with COVID-19 program implementation data.

4. Risk analysis

4.1. Bank of Canada

Each type of debt involves some risk. This implies that the overall size of the Bank's balance sheet is an indicator of potential risk.[21] Recent action by the Bank of Canada resulted in considerably increasing the size of its balance sheet from $123 billion last February to $543 billion in August 2020. Appendix B illustrates the Bank's balance sheet by asset type.

A balance sheet that is significantly larger than it was before the pandemic means that the Bank is now more vulnerable to systemic risk that could simultaneously affect the solvency of businesses and governments. However, this is not the only indicator of the level of risk on its balance sheet.

The Bank of Canada's balance sheet is composed of assets with varying levels of risk, and the Bank's asset mix is the critical factor in its risk exposure.[22]

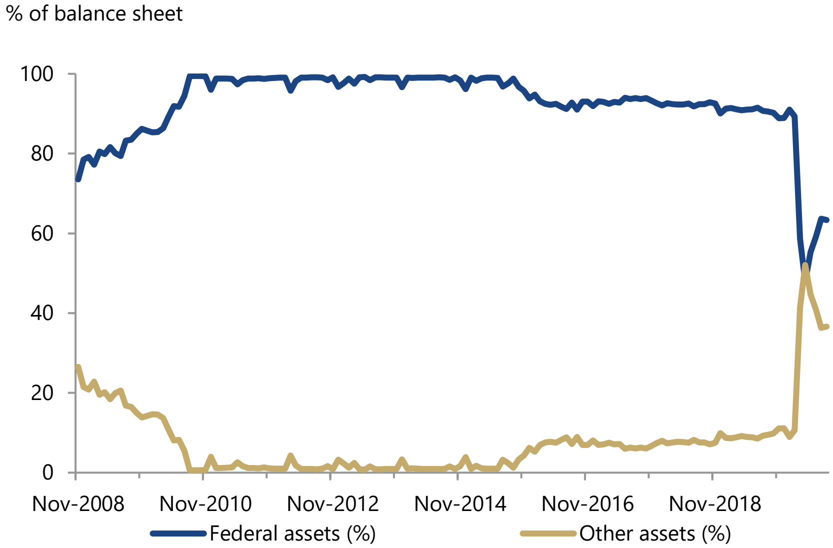
As part of this analysis, we look at the risks that may affect the Government of Canada through the Bank of Canada's finances. From this perspective, Government of Canada securities held by the Bank of Canada do not pose additional risk to the government. Nevertheless, Bank-generated revenues are dependent on interest rates in the primary and secondary markets at the time of transactions.

Other assets with the lowest risk are provincial securities because they are backed by the provinces. The other assets owned by the Bank, with the exception of reserves, are generally private-sector and municipal securities and have a higher level of underlying risk.[23] As of August 2020, these assets totalled $199 billion.

Compared to the pre-pandemic situation, the Bank has increased its non-federal government issued assets in proportion to the size of its balance sheet (Figure 4-1), reflecting a potentially riskier asset mix overall.

As of August 2020, 63% of the Bank's assets were federal securities. These assets include federal securities purchased under resale agreements. This share has declined sharply since the start of the pandemic and is explained by the addition of a wide range of programs aimed at stabilizing the level of liquidity in the financial markets. However, recent data indicates a reversal of the trend observed since the start of the pandemic.

Figure 4-1 Share of federal securities on the Bank of Canada's balance sheet



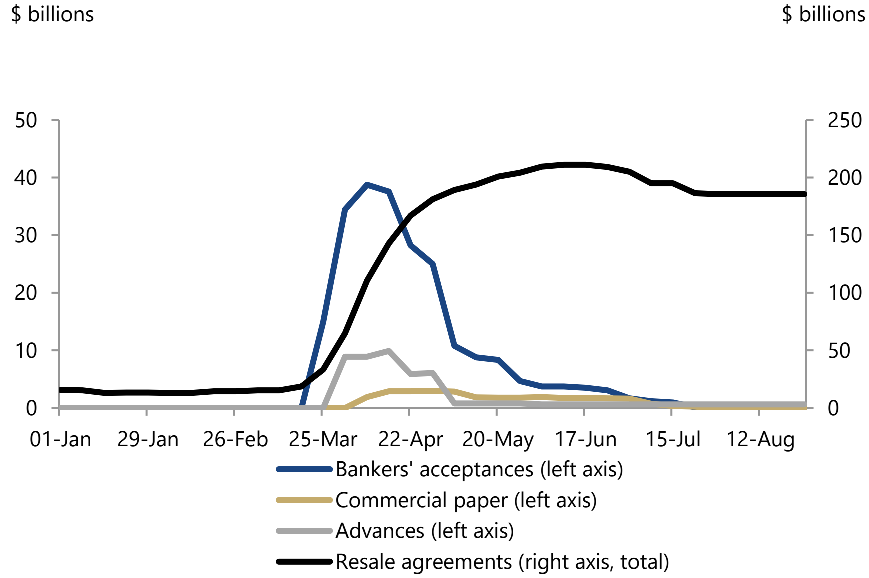
Sources: Bank of Canada and PBO.

Note: Federal assets include the share of federal securities acquired under resale agreements.

It is important to note that many of these assets have a temporary impact on the Bank's balance sheet. Bankers' acceptances purchased by the Bank have maturities of less than 3 months, while securities purchased under resale agreements have maturities of less than 24 months, as they are included in term purchase and resale agreements. The share of private assets held by the Bank is therefore expected to decline as the economic recovery takes hold. In comparison, the peak of the 2008 financial crisis was absorbed in 2010.

Figure 4-2 shows the riskier principal assets held by the Bank by week. As the figure shows, for bankers' acceptances, commercial paper and advances, the peak was reached in April. For securities purchased under resale agreements, the situation is stabilizing.

Figure 4-2 Riskier assets on the Bank's balance sheet



Source: Bank of Canada.

Notes: Securities purchased under resale agreements shown in this chart include Canadian and provincial bonds acquired in these transactions.

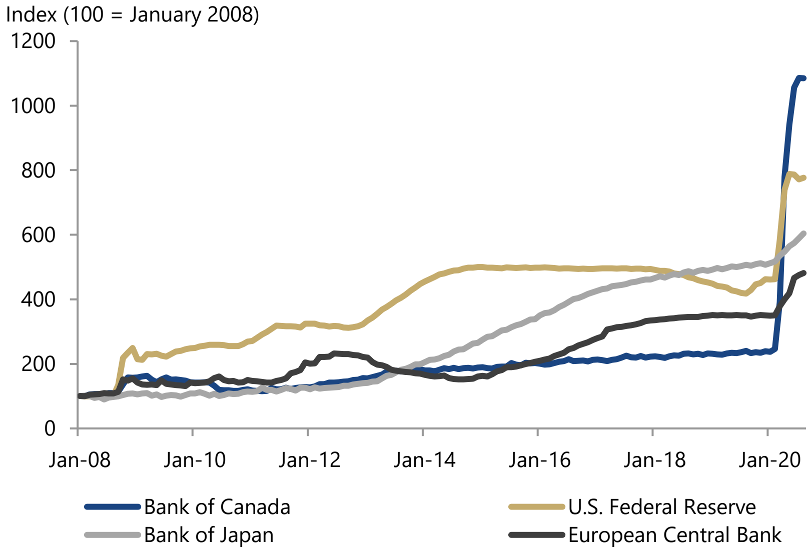
Corporate bonds are not included in this figure due to its low uptake.

Parliamentarians can monitor the Bank of Canada's financial position on an ongoing basis through the weekly update to the Bank of Canada's balance sheet.[24]

What about other central banks?

The Bank of Canada is not the only bank to have increased its asset holdings. All G7 central banks[25] have introduced securities purchase programs since the start of the pandemic. Figure 4-3 illustrates the changes to the balance sheets of the major G7 central banks in comparison to the Bank of Canada's balance sheet.

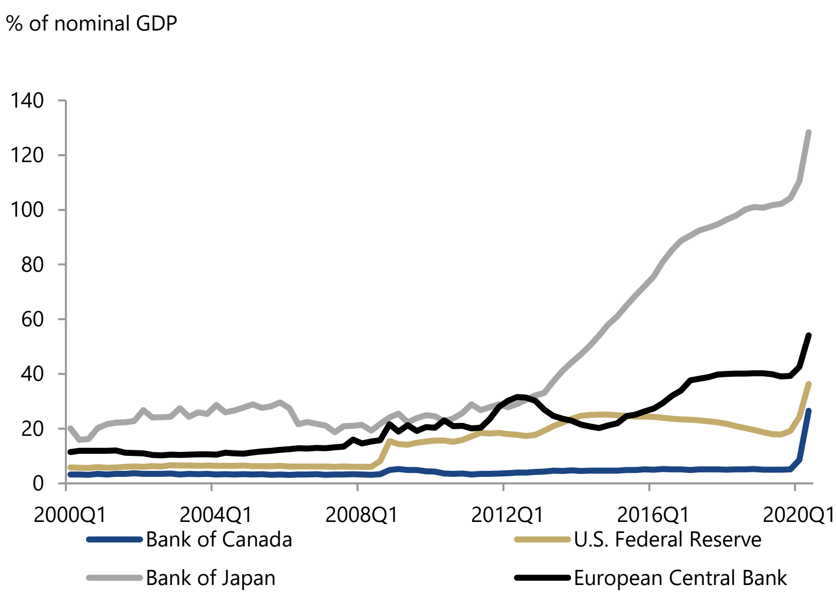
Figure 4-3 Comparison of the G7 central banks' balance sheets



Sources: Bank of Canada, U.S. Federal Reserve, Bank of Japan, European Central Bank.

The Bank of Canada's balance sheet shows the fastest increase from 2008 levels. However, when comparing the balance sheets of the various central banks to the size of their economies, the Bank of Canada is one of the banks with the smallest balance sheet at the end of the second quarter of 2020, as shown in Figure 4-4.

Figure 4-4 Comparison of the G7 central banks' balance sheets as a percentage of nominal GDP



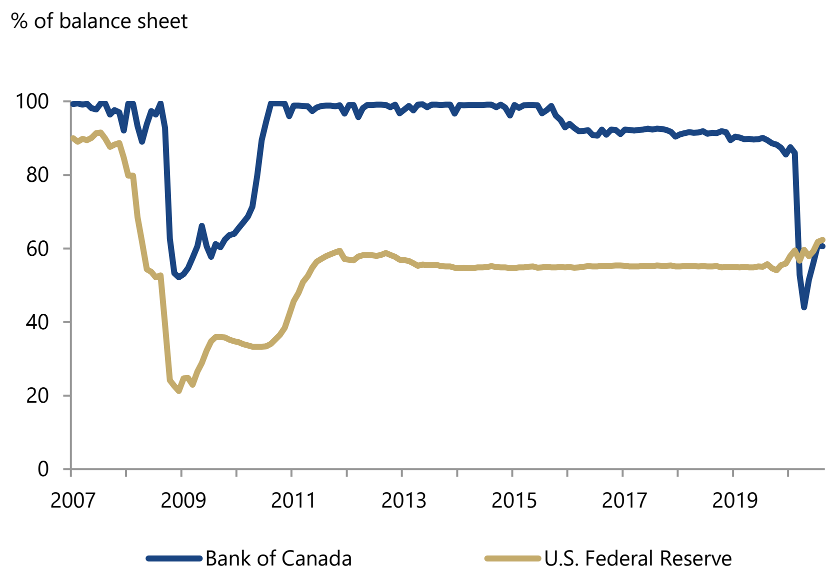
Sources: Bank of Canada, U.S. Federal Reserve, Bank of Japan, European Central Bank.

These comparisons show that the Bank of Canada's recent decisions are aligned with those of other central banks. By comparing the relative size of its balance sheet with that of other central banks, the Bank of Canada appears to have the necessary flexibility to carry out its transactions that require the purchase of securities.

Share of federal securities on the balance sheet

The agendas of the various central banks are not always comparable since they are suited to each country's unique economic situation. Nevertheless, it is possible to compare the share of federal securities, which carry the least amount of risk, on their respective balance sheets. Figure 4-5 compares the share of federal securities on the balance sheets of the Bank of Canada and the U.S. Federal Reserve.

Figure 4-5 Comparison of the share of federal securities on central bank balance sheets



Sources: Bank of Canada and U.S. Federal Reserve.

Note: Canadian federal assets don't include the share of federal securities acquired under resale agreements in order to accurately compare with the U.S. Federal Reserve data.

Prior to the pandemic, the U.S. Federal Reserve held far fewer federal securities as a percentage of its balance sheet than the Bank of Canada. However, since March, the Bank of Canada has been increasingly acquiring other types of securities, which has reduced the share of federal securities on the Bank of Canada's balance sheet. Currently, the share of federal securities on the balance sheets of both central banks is similar.

4.2. Agent Crown corporations

The Government's COVID-19 liquidity response constitutes $236 billion in gross financial support (up to a 20 per cent increase on total federal liabilities entering the crisis). The budgetary costs of similar past programs have been small relative to total lending. That said, these unprecedented increases have provoked questions from several parliamentarians regarding the budgetary risks associated with these financial commitments.

So far, public disclosures of expected gains or losses, and potential downside risks have been lacking. The Government has not published discrete estimates of its expected profits or losses on these programs.

The Government included its estimates for the net profits or losses expected on these liquidity measures within its Economic and Fiscal Snapshot, but the expected gains or losses on liquidity actions were combined with revenues from other activities.[26] The risks for individual liquidity support measures, or for the package to liquidity supports, overall, cannot be assessed. Upon request, Finance Canada provided PBO with the 5-year profile for aggregate gains and losses for enterprise Crown corporations on a confidential basis.

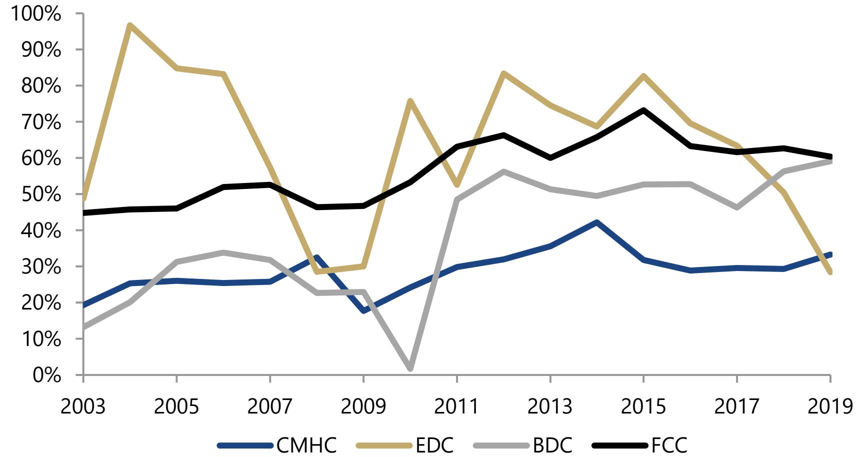
PBO has modeled the budgetary costs of most liquidity support programs.[27] Our estimates generally reflect relatively small net budgetary effects relative to the overall size of the program.

Both the Government's and PBO's projections of expected profits or losses on liquidity programs are estimates of the most likely outcome. Depending on a multitude of factors, financial outcomes for liquidity programs could be better or worse overall. Downside losses on loans and loan guarantees represent material specific risks, which the International Monetary Fund (IMF) recommends should be regularly reported on.[28]

When considering the budgetary risks of expanded lending activities by agent Crown corporations it is important to consider the underlying financial health of the organization, as well as that of the sectors in which they operate.

First, agent Crown corporations have established track records of profitability, even accounting for prior recessions and bad debts. Average profit margins range from 29 per cent (CMHC) to 63 per cent (EDC).[29] The Government has not historically provided long term budgetary support to any of these Crowns core operations.

Figure 4-6 Net profit margins for Agent Crown corporations



Source: Capital IQ.

Note: Data from 2003 to 2019.

Next, the four agent Crown corporations considered in this report are entering this crisis relatively well-capitalized (Table 4-1).[30] Financial corporations hold liabilities that exceed capital – activity that adds risk, but also enhances profits. Monitoring the liabilities-to-capital ratio is the basic premise of Basel III, the global banking regulatory framework.[31]

Table 4-1 Key balance sheet information – pre-COVID

$ billions	CMHC	EDC	BDC	FCC
Liabilities (L)	262	55	24	34
Capital (C)	15	10	7	7
Leverage (L/C)	18.0	5.6	3.4	4.9
Statutory limit (L/C)	N/A	15	12	12

Sources: CMHC, EDC, BDC and FCC. Export Development Act, Business Development Bank of Canada Act and Farm Credit Canada Act.

Notes: Liabilities and capital are shown in billions of dollars, while L/C is a ratio. Capital refers to the total available capital as presented in the Capital Management section of the Annual Reports.

BDC and FCC present their reports on a fiscal year basis. The data for these two Crown corporations is up to 2019-20.

Statutory limits taken from the Export Development Act, Business Development Bank of Canada Act and Farm Credit Canada Act.

Simple liability-to-capital ratios are useful indicators of financial health, but do not adjust the composition of risk within each corporations' portfolio of assets and liabilities. They are incomplete guides to assessing risk.

Canada's financial sector regulator, the Office of the Superintendent of Financial Institutions, sets out detailed capital adequacy requirements, which all four agent enterprise Crown corporations follow. Each corporation's capital adequacy ratio differs slightly, as does the way capital adequacy is reported publicly. Again, all four agent Crown corporations are well-capitalized, and generally surpass their respective targets prior to COVID-19 (Table 4-2).

Table 4-2 Capitalization targets and outcomes: Crown corporations

	Measure	2015	2016	2017	2018	2019	2020	Target
CMHC	MICAT/MCT	354%	384%	184%	168%	195%	-	155%
EDC	ICAAP	155%	167%	193%	195%	191%	-	None
BDC	ICAAP	128%	130%	130%	137%	136%	131%	134%
FCC	TCR[32]	15.6%	16.7%	16.3%	16.1%	16.0%	16.8%	15.0%

Sources: CMHC, EDC, BDC and FCC.

Notes: CMHC and EDC have not published data for 2020. BDC and FCC are on a fiscal year basis.

Mortgage Insurer Capital Adequacy Test (MICAT); Minimum Capital Test (MCT); Internal Capital Adequacy Assessment Process (ICAAP); Total Capital Ratio (TCR).

CMHC uses different capital measure ratios for Mortgage Insurance (MICAT/MCT) and Mortgage Funding (Available Equity to Required Equity). The figures above only show the ratio for Mortgage Insurance, which accounts for the majority of capital available.

Although EDC does not target a specific capital ratio, it does target a level of capitalization to cover losses that is consistent with an AA solvency rating.

The above data mostly reflects the financial position of agent Crown corporations pre-COVID (BDC and FCC publish their annual reports on a fiscal year basis, which include the first three months of 2020). Given a potentially historic slowdown in economic growth and apparent global strains in financial conditions, risks should be considered using more pessimistic assumptions than were used to generate the pre-COVID financial metrics.

So far, data on risks associated with COVID liquidity supports have been lacking. The Government and the implementing Crown corporations have not presented qualitative or quantitative assessments of downside risks.

In the absence of these first-best disclosures by agent Crown corporations, publicly-available data can support risk analysis.

Stress testing is a widely-accepted procedure for enterprise-wide risk management. Stress tests involve changing a set of specified risk factors consistent with exceptional but plausible events to asses the potential effects on an institution's financial condition.[33]

All four agent Crown corporations are required by OSFI regulations to undertake internal stress testing. Starting in 2016, CMHC became the first Crown (and to date remains the only one) to publish the summary results of its financial stress tests (Table 4-3).[34] CMHC's stress testing data demonstrates that CMHC expects to remain profitable over a long-term horizon even under a severe contraction in housing prices and a spike in unemployment. Although these scenarios do not replicate the precise potential economic fallout from the COVID pandemic, the stress test results suggest that budgetary risks posed by CMHC are limited even under severe economic conditions.

While publishing stress test results is not a regulatory requirement for agent Crown corporations, it is a best practice in fiscal transparency.

Table 4-3 CMHC Stress Test results and scenarios

$ billions	Base case	Financial market crash	Middle-East conflict	Global recession	Cyber-attack	Nuclear leakage	5/30
Change in housing prices peak-to-trough (%)	49.7	-42.6	-27.0	-34.2	-19.8	-27.4	-30.2
Cumulative net income	17.8	11.0	13.5	12.0	14.0	11.6	9.9

Source: CMHC Annual Report 2019.

Note: The period covered in this stress test is 2019-28. 5/30 refers to a scenario where there is a 5% increase in unemployment coupled with a 30% decline in house prices. Cumulative net income from insurance and securitization.

Apart from stress tests, all four crown corporations publish sensitivity analyses on the impact of changes to key discount rates, loss factors and economic factors. Sensitivity analyses are more limited heuristics than stress tests, because what induces changes in one variable often leads to changes in others.

Sensitivity analysis provided in annual reports suggest that no agent Crown corporations have high interest rate risk exposure because of the use of derivatives and asset-liability duration matching to manage risks. Nevertheless, information pertaining to COVID liquidity supports are not currently reflected in this data.

Overall, PBO's assessment of financial risks among agent Crown corporations is limited to publicly-available data. The agent Crown corporations themselves should be encouraged to provide prompt assessments of the risks associated with COVID liquidity supports as soon as possible.

Appendix A: List of Measures in Response to COVID-19

List of programs put in place by the Bank of Canada

$ billions	Description	Outstanding amount
Monetary policy		
Lowering policy rate	Reduction of the policy rate by 150 basic points from 1.75% to 0.25%.	-
Support for governments		
Changes to federal adjudications policy	Increase in the share of Treasury Bills purchased on the primary market	16.9
Provincial Money Market Purchase Program (PMMP)	Purchase of provincial securities on the primary market.	7.4
Support for financial market		
Government of Canada bond Purchase Program (GBPP)	Purchase of Government securities on the secondary market.	122.0
Canada Mortgage Bond Purchase Program (CMBP)	Purchase of Canada Mortgage Bonds on the secondary market.	7.1
Bankers' Acceptance Purchase Facility (BAPF)	Purchase of Bankers' Acceptances on the secondary market.	0
Provincial Bond Purchase Program (PBPP)	Purchase of provincial bonds on the secondary market.	8.4
Corporate Bond Purchase Program (CBPP)	Purchase of corporate debt on the secondary market.	0.1
Commercial Paper Purchase Program (CPPP)	Purchase of commercial papers on the Canadian commercial paper market.	0
Contingent Term Repo Facility (CTRF)	Offer Canadian dollar funding for eligible counterparties through the Standing repo facility.	*
Liquidity for financial institutions		
Enhanced term repo operations and Standing Liquidity Facility (SLF)	Provide additional funding to individual financial institutions by lengthening the term and the types of collateral accepted.	*
Standing Term Liquidity Facility (STLF)	New provisions to help banks to manage their liquidity risks.	*
Securities purchased under resale agreements	Combined effect of the additional term repo facilities	170.3
Current operations balance	Increase in assets due to current operations	87.5
Total liquidity		**419.7**
Total liquidity excluding the federal assets		**185.9**

Source: Bank of Canada and PBO calculations.

Notes: CTRF, SLF and STLF results are reported all together by the Bank. The total is reported in the Securities purchased under resale agreements category. Numbers are from August 2020.

(*) Summed in the Securities purchased under resale agreements category.

List of Measures from the other Crown Corporations

$ billions	Description	Total envelope
CMHC		
Insured Mortgage Purchase Program	Purchase of insured mortgage pools to provide liquidity to financial markets	150
EDC		
SME Loan Guarantee program	Loan guarantees on new operating credit lines of up to $6.25 million, 80% guaranteed by EDC, to be repaid within a year.	20
Mid-market guarantee and financing program	Loan guarantees on new operating credit lines of up to $80 million, 75% guaranteed by EDC, for firms with revenues between $50-300 million	TBD
Canada Emergency Business Account	Interest-free loans of up to $40,000 to small businesses and non-profits	41
BDC		
SME Co-lending program	Incremental credit amounts of up to $12.5 million, 80% of which is provided by BDC, and 20% by a financial institution	20
Mid-market financing program	Provide commercial loans between $12.5 millions and $60 million, 90% of which is provided by BDC, and 10% by a financial institution	TBD
FCC		
Additional lending capacity	Enhancement to FCC's capital base; Deferral of principal and interest payments for up to 6 months or only principal for 12 months, and access to an additional credit line of up to $500,000	5

Source: COVID-19 Economic Response Plan, 10th Weekly report to FINA.

Appendix B: Bank of Canada balance sheet

$ billions

Issuer	Type	February 2020	August 2020
Government of Canada	Treasury bills	25.0	107.0
	Government of Canada bonds	80.6	221.8
	Real return bonds	-	1.3
	Canada Mortgage Bonds	0.5	8.7
	Securities purchased under resale agreements*	3.5	4.6
	Subtotal	109.6	345.5
Provincial governments	Provincial money market	-	7.4
	Provincial bonds	-	8.4
	Securities purchased under resale agreements*	12.0	34.9
	Subtotal	12.0	50.7
Others	Bankers’ acceptances	-	0.0
	Commercial paper	-	0.0
	Corporate bonds	-	0.1
	Advances	0.0	0.7
	Securities purchased under resale agreements *	-	146.3
	All other assets	1.2	1.3
	Subtotal	1.2	148.4
	Total assets	122.9	542.6

Sources: Bank of Canada and PBO calculations

Note: * These are PBO estimates based on the Bank’s monthly Statement of Financial Position data.

Notes

1. International Monetary Fund, Global Financial Stability Report – April 2020. Available at: https://www.imf.org/en/Publications/GFSR/Issues/2020/04/14/global-financial-stability-report-april-2020

2. PBO's analysis of direct spending is available here:

   https://www.pbo-dpb.gc.ca/en/covid-19

3. PBO's analysis of tax liquidity support is available here:

   https://www.pbo-dpb.gc.ca/en/covid-19

4. Capital relief consists of financial sector regulatory changes that do not directly implicate federal entities, and do not have any direct budgetary impacts.

5. https://www.canada.ca/en/department-finance/economic-response-plan/fiscal-summary.html

6. https://www.canada.ca/content/dam/fin/publications/efs-peb/homepage/efs2020-fra.pdf

7. Parts of our analysis exclude Bank of Canada purchases of Government of Canada debt. The rationale for this choice is to focus on federal financial support provided to entities outside federal purview. The consequence of this methodological choice is omitting certain benefits and risks associated with Bank purchases of Government of Canada debt.

8. While Crown corporations operate at arm's length from the government, as public institutions, Crown corporations are ultimately accountable to the government. The government has a range of instruments to influence the conduct of Crown corporations, such as amendments to the constituent Acts of corporations, directive power, approval of corporate plans, appointment of individuals to key positions, and approval and guarantee of the financing of corporations. More information on the governance of Crown corporations is available at: https://www.tbs-sct.gc.ca/report/rev-exa/gfcc-cgse-eng.pdf.

9. Readers should keep in mind that the Bank of Canada is distinct from the other four Agent Crown corporations examined in this report. As a non-agent Crown corporation, the Government of Canada is neither legally nor financially liable for the Bank's operations. The Bank's status as an independent monetary institution provides for the separation of fiscal (the power to spend money) and monetary functions (the power to create money). The other five organizations are agent enterprise Crown corporations, which means the Government is ultimately legally liable for their actions and for their liabilities.

10. Excludes mid-market financing programs by EDC and BDC, expansion of direct lending through existing credit options by BDC and EDC, and the bridge financing program by BDC because these programs do not have

envelope amounts. Program parameters are still being decided, and public cost estimates are unavailable.

11. For the purpose of this report, we have included the Canada Emergency Business Account (CEBA) under EDC. The program is funded by the Government via the Canada Account, which is administered by EDC. That being said, we assume that it will be recorded as a liability of the Government of Canada and included directly on the Government's balance sheet.

    For the SME Loan Guarantee, we have included EDC's maximum exposure amount of $20 billion under its liabilities. While liabilities in their balance sheet will not increase by this amount, as it is a contingent liability, we wanted to show the maximum exposure of this program.

12. PBO calculations.

13. On March 23, 2020, the Bank launched its one-month bankers' acceptance purchase facility. In total, the Bank purchased $47 billion of bankers' acceptances. However, all of these transactions took place during the months of March and April. As of August 31, the Bank didn't hold bankers' acceptances anymore.

    On April 2, 2020, the Bank launched the Commercial Paper Purchase Program for commercial paper with a maximum maturity of three months. The program has a 12-month term and is designed to provide short-term financing to incorporated businesses, municipalities and provincial agencies. As of August 31, 2020, the Bank didn't hold commercial paper anymore.

    On May 26, 2020, the Bank launched the Corporate Bond Purchase Program. The purpose of this 12-month program is to provide long-term liquidity to corporations in support of their continued operations. The program is capped at $10 billion. However, as of August 31 2020, the Bank only held $141 million in corporate bonds.

14. The Bank pledged to purchase Canada Mortgage Bonds on the secondary market starting March 17, 2020. It purchased the equivalent of $7.1 billion of Canada Mortgage Bonds through this program as of August 31 2020. The bonds that were purchased mature between 2022 and 2028.

    Since April 1, the Bank of Canada has been purchasing, at a minimum, the equivalent of $5 billion worth of Government of Canada securities on the secondary market each week. These purchases are made across the entire yield curve. At the end of August 2020, these purchases totalled $122 billion.

    Since May 7, 2020, the Bank has been purchasing provincial bonds on the secondary market through the Provincial Bond Purchase Program. At the end of August, the amount recorded on the Bank's balance sheet was $8.4 billion.

15. https://www.edc.ca/en/solutions/working-capital/bcap-guarantee.html#

16. Excludes additional direct lending through current operations and the Mid-Market Guarantee and Financing Program because EDC has not set an envelope amount.

17. https://www.bdc.ca/en/about/mediaroom/news_releases/pages/new-small-medium-sized-enterprise-loan-guarantee-program-help-ease-access-credit-entrepreneurs-impacted-covid-19.aspx

18. Excludes the Mid-Market Financing Program, additional direct lending through current operations, and Bridge Financing Program because BDC has not set an envelope amount.

19. For the purpose of this report, we have included the Canada Emergency Business Account (CEBA) under EDC. The program is funded by the Government via the Canada Account, which is administered by EDC. That being said, we assume that it will be recorded as a liability of the Government of Canada and included directly on the Government's balance sheet.

    For the SME Loan Guarantee, we have included EDC's maximum exposure amount of $20 billion under its liabilities.

20. It is important to note that the value of these measures represent an envelope, or upper limit.

21. The Bank of Canada is a special type of Crown corporation, one that is owned by the federal government but operates with considerable independence. The Bank enjoys considerable operational, legal and financial independence from the government, but the Government of Canada is the Bank's sole shareholder.

22. The Bank is currently well capitalized and manages financial risk for the Government of Canada through the following practices:

    - Collateralized loans: All Bank loans are backed by securities and collateral of value equal to or greater than the loan.
    - Overcollateralization : For some transactions, the market value of the collateral exceeds the value of the outstanding loan. As of August 2020, the value of securities ($194.6 billion) serving as collateral for term repo operations exceeded the value of outstanding term repo operations ($185.8 billion) by $8.8 billion (4.8% of the total).
    - Term-to-maturity limits: The Bank sets clear benchmarks for loan maturity dates in the programs it undertakes. In addition, the vast majority of the Bank's recent lending is short-term.
    - Minimum credit ratings: The Bank sets minimum credit ratings for the types of loans involved.
    - Counterparty limits: The Bank clearly sets out the eligible counterparties for each of its programs.

23. Assets backed by the Government of Canada include treasury bills, Government of Canada bonds, real return bonds, Canada Mortgage Bonds, and a portion of securities purchased under resale agreements. Assets guaranteed by the provinces include provincial money market purchases, provincial bonds and certain securities purchased under resale agreements. Other assets include bankers' acceptances, commercial paper, corporate bonds, advances and the remaining portion of securities purchased under resale agreements.

24. https://www.bankofcanada.ca/rates/banking-and-financial-statistics/bank-of-canada-assets-and-liabilities-weekly-formerly-b2/?_ga=2.253693129.1342181812.1598889461-1994571905.1592526161

25. The Bank of England has been omitted from the figures as it has not published recent data.

26. See Economic and Fiscal Snapshot 2020, p. 126.

    Available at: https://www.canada.ca/content/dam/fin/publications/efs-peb/homepage/EFS2020-eng.pdf

27. PBO's Costing of Canada's COVID-19 Economic Response Plan. https://www.pbo-dpb.gc.ca/en/covid-19

28. International Monetary Fund, Fiscal Transparency Handbook, Principle 3.1.2.

    The IMF recommends that specific risks are reported on in a fiscal risk statement, ideally integrated into budget documentation. The IMF suggests that ministries of finance should be responsible for coordinating the collection of data on fiscal risks. It acknowledges the challenges in collecting information from public corporations. By implication, the next best solution is the publication of risks by different ministries or public corporations themselves.

    Available at: https://www.elibrary.imf.org/doc/IMF069/24788-9781484331859/24788-9781484331859/Other_formats/Source_PDF/24788-9781484348598.pdf

29. Profit margin calculated as net income as a percentage of revenues. Data from 2003 to 2019.

30. For the purposes of this note, capital is roughly synonymous with equity. Strictly speaking, Tier 1 regulator capital can include other low-risk assets. A precise definition of capital is available on from the Office of the Superintendent of Financial Institutions, here: https://www.osfi-bsif.gc.ca/Eng/Docs/CAR18_chpt2.pdf.

31. All agent Crown corporations are subject to regulatory oversight by the Office of Office of the Superintendent of Financial Institutions (OSFI), a participant in the development of the Basel III framework.

32. FCC benchmarks capital adequacy requirements based on a Total Capital Ratio (TCR) metric, which is the capital available divided by total risk-weighted assets. Capital supply is primarily retained earnings and paid-in capital, while risk-weighted assets are primarily loans receivable and other assets, weighted by relative risk as prescribed by OSFI. FCC has an internal target TCR of 15%, while the minimum TCR is 10.5%.

33. https://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/e18.aspx

34. PBO requested and received stress testing results from BDC, EDC and FCC. All were provided only on a confidential basis and cannot be presented in this report.