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IMPACT ASSESSMENT OF BUDGET 2021 MEASURES

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 provides an assessment of the impact of Budget 2021 measures on PBO's pre-budget economic and fiscal outlook.

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Summary

This report provides an assessment of the impact of Budget 2021 measures on PBO's pre-budget economic and fiscal outlook. The resulting scenario approximates a post-budget outlook. In addition, we conduct a sensitivity analysis on our post-budget scenario.

Budget 2021 introduced $142.9 billion in measures (on a net basis) over 2020-21 to 2025-26. Excluding measures related to COVID-19 support and non-incremental measures, we identify $114.1 billion (on a cash basis) as the total value of Budget 2021 measures for our economic impact assessment.

We use PBO's macroeconomic model to estimate the economic impact of these measures. However, unlike our previous assessment of the impact of stimulus spending in Budget 2021, we include a monetary policy response to the increase in economic activity and inflation in our post-budget scenario.

- We estimate that Budget 2021 measures will increase real GDP growth by 0.6 percentage points (to 6.2 per cent) in 2021 and by 0.3 percentage points (to 3.9 per cent) in 2022.
- By the end of 2025, we estimate that real GDP will be 0.5 per cent higher than projected in our pre-budget outlook.
- We estimate that Budget 2021 measures will increase employment by 89 thousand (0.4 per cent) net new jobs by the end of 2025.
- Monetary policy responds to the increase in economic activity and inflationary pressures, raising the policy interest rate by 50 basis points in the second half of 2022 relative to our pre-budget outlook.

In terms of fiscal implications, we estimate that budgetary deficits, on a cumulative basis, will be $117.1 billion higher over 2020-21 to 2025-26, relative to our pre-budget outlook.

- This suggests that only a portion of the $131.7 billion (accrual basis) in incremental Budget 2021 measures will be offset by increased economic activity.
- Higher interest rates dampen the stimulative impact of Budget 2021 measures on revenues and, also increase the cost of servicing the Government's existing debt obligations.
- Under our post-budget scenario, the budgetary deficit reaches $36.0 billion (1.2 per cent of GDP) in 2025-26 and the federal debt settles at 49.2 per cent of GDP in 2025-26.

To illustrate uncertainty surrounding our post-budget scenario, we construct forecast intervals.

- Given possible future economic outcomes, and without future policy actions, we estimate that there is a 5 per cent chance the budget will be balanced or in a surplus position in 2025-26.
- Based on our post-budget scenario, we estimate there is a 65 per cent chance that the federal debt-to-GDP ratio in 2025-26 will be below its 2021-22 level of 51.3 per cent of GDP.

1. Budget 2021 measures

This report provides an assessment of the impact of Budget 2021 measures on PBO's pre-budget economic and fiscal outlook.[1] The resulting scenario approximates a post-budget outlook. That is, our pre-budget outlook updated only for (incremental) Budget 2021 measures—but not including any new economic developments since March 12.[2] In addition, we conduct a sensitivity analysis on our post-budget scenario.

Budget 2021 introduced $142.9 billion in measures (on a net basis) over 2020-21 to 2025-26. In our post-budget report, we separated these measures into 3 broad categories: new COVID-19 support, stimulus spending and other new spending. As noted in our report, approximately $12 billion of these measures were not incremental to our pre-budget fiscal outlook.[3]

Table 1-1 details incremental Budget 2021 measures based on the categorization in our post-budget report. In addition, we identify $114.1 billion (cash basis) as the total value of Budget 2021 measures for our economic impact assessment.[4]

Table 1-1 **Budget 2021 measures**

$ billions	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	Total
Total measures in Budget 2021	*7.7*	*49.3*	*28.3*	*23.8*	*17.7*	*16.1*	*142.9*
Incremental Budget 2021 measures:							
New COVID-19 spending	4.9	18.4	1.0	0.1	0.0	0.0	24.5
Stimulus spending	0.0	21.5	25.2	23.5	0.0	0.0	70.1
Other new spending	2.5	0.0	0.0	0.0	17.7	16.8	37.0
Total (accrual basis)	**7.4**	**39.9**	**26.2**	**23.6**	**17.7**	**16.9**	**131.7**
Value of Budget 2021 measures for economic impact assessment (cash basis)	0.0	24.0	27.7	26.2	19.0	17.2	114.1

Sources: Finance Canada and Parliamentary Budget Officer.

Note: Totals may not add due to rounding.

Stimulus spending over 2021-22 to 2023-24 is roughly $1 billion (accrual basis) higher compared to our previous report. This reflects minor adjustments to the profile of new COVID-19 spending.

2. Impact assessment

Table 2-1 presents a high-level summary of our estimates of the economic impacts of implementing $114.1 billion in Budget 2021 measures (on a net basis), over 2021-22 to 2025-26.

Similar to the approach used in our previous report, these estimates were obtained by simulating PBO's macroeconomic model with the new measures allocated to their corresponding expenditure/multiplier categories.[5] However, unlike our previous estimates, we include a monetary policy response to the increase in economic activity and inflation in our post-budget scenario.[6]

Table 2-1 Economic impact assessment of Budget 2021 measures

	2020	2021	2022	2023	2024	2025
Real GDP growth (%)						
Post-budget scenario	-5.4	6.2	3.9	1.8	1.6	1.4
Pre-budget outlook	-5.4	5.6	3.7	1.8	1.7	1.6
	-	0.6	0.3	0.0	-0.1	-0.1
Employment (thousands)*						
Post-budget scenario	18,502	19,114	19,537	19,745	19,912	20,055
Pre-budget outlook	18,502	19,070	19,471	19,668	19,829	19,966
	-	45	66	77	83	89
Total CPI inflation (%)						
Post-budget scenario	0.7	2.2	2.0	2.1	2.1	2.2
Pre-budget outlook	0.7	2.1	1.7	2.0	2.1	2.2
	-	0.1	0.3	0.1	0.0	0.0
Bank of Canada policy rate (%)*						
Post-budget scenario	0.25	0.25	0.75	1.25	1.75	2.25
Pre-budget outlook	0.25	0.25	0.25	0.75	1.25	1.75
	-	0.00	0.50	0.50	0.50	0.50
10-year government bond rate (%)*						
Post-budget scenario	0.66	1.47	1.79	2.19	2.60	3.00
Pre-budget outlook	0.66	1.40	1.40	1.77	2.13	2.50
	-	0.07	0.39	0.43	0.46	0.50

Sources: Statistics Canada and Parliamentary Budget Officer.

Note: * Presented on a fourth-quarter basis. Totals may not add due to rounding.

We estimate that Budget 2021 measures will increase real GDP growth by 0.6 percentage points in 2021 and by 0.3 percentage points in 2022.

Budget 2021 measures drive increases in consumer spending, as well as residential and business investment. The peak impact on real GDP is estimated to be 0.8 per cent (occurring in the second quarter of 2022) and by the end of 2025, real GDP is estimated to be 0.5 per cent higher than projected in our pre-budget outlook.[7]

We estimate that Budget 2021 measures will increase employment by 89 thousand (0.4 per cent) net new jobs by the end of 2025 compared to our pre-budget outlook.

Relative to our pre-budget outlook, total CPI inflation is higher by 0.1 percentage points in 2021 and 0.3 percentage points in 2022. The increase in inflation is due to stronger domestic demand relative to the economy's potential (that is, a larger output gap).[8]

Based on the increase in economic activity, and to avoid higher inflation, we assume that the Bank of Canada will respond by increasing its policy interest rate by 25 basis points in both the third and fourth quarters of 2022 (two quarters earlier than in our pre-budget outlook).[9]

Beyond 2022, consistent with the monetary policy reaction function in our model, the policy rate is gradually increased until it reaches the (nominal) neutral interest rate of 2.25 per cent by the end of 2025.[10] Long-term government bond yields are assumed to reach their neutral or steady-state levels by the end of 2025.[11]

In terms of fiscal implications, we estimate that budgetary deficits, on a cumulative basis, will be $117.1 billion higher over 2020-21 to 2025-26, relative to our pre-budget outlook (Table 2-2).

This suggests that only a portion of the $131.7 billion (accrual basis) in incremental Budget 2021 measures will be offset by increased economic activity. Higher interest rates dampen the stimulative impact of Budget 2021 measures on revenues and, also increase the cost of servicing the Government's existing debt obligations.

The increase in economic activity and inflation results in higher nominal GDP—the broadest measure of the Government's tax base.[12] Consequently, revenues are estimated to be $7.8 billion higher per year, on average, over 2021-22 to 2025-26. This mainly reflects higher personal and corporate income tax revenues, as well as higher Goods and Services Tax revenue.

As most of Budget 2021 measures (on a gross basis) are implemented through program spending, relative to our pre-budget outlook, program spending is $139.1 billion higher in total over 2020-21 to 2025-26.

In addition to the budget measures, the increase in inflation results in higher spending on indexed-linked benefits such as Old Age Security. Spending on the Canada Health Transfer and Equalization is also higher given that it is tied to nominal GDP growth. However, lower unemployment puts downward pressure on EI benefits and higher interest rates result in lower net actuarial losses, dampening the increase in overall program spending.

The increase in interest rates and larger budgetary deficits result in public debt charges that are $3.4 billion higher per year, on average, over 2021-22 to 2025-26 compared to our pre-budget outlook.

Under our post-budget scenario, the budgetary deficit reaches $36.0 billion (1.2 per cent of GDP) in 2025-26 and the federal debt settles at 49.2 per cent of GDP in 2025-26, which is 18 percentage points above its pre-pandemic level of 31.2 per cent of GDP.

Table 2-2 Fiscal impact assessment of Budget 2021 measures

$ billions	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Revenues						
Post-budget scenario	288.2	349.7	381.5	402.0	420.3	437.5
Pre-budget outlook	288.3	345.4	374.4	393.7	411.1	427.5
	0.0	4.3	7.1	8.3	9.2	10.0
Program spending*						
Post-budget scenario	638.1	484.5	415.3	417.9	422.3	434.4
Pre-budget outlook	630.7	444.8	388.6	393.8	401.9	413.7
	7.4	39.8	26.7	24.1	20.4	20.7
Public debt charges						
Post-budget scenario	21.0	21.9	25.2	30.2	35.0	39.1
Pre-budget outlook	21.0	21.7	23.7	26.4	29.8	33.0
	0.0	0.2	1.5	3.8	5.2	6.2
Budgetary balance						
Post-budget scenario	-370.9	-156.8	-59.0	-46.1	-37.0	-36.0
Pre-budget outlook	-363.4	-121.1	-37.8	-26.4	-20.6	-19.2
	-7.4	-35.7	-21.2	-19.7	-16.4	-16.8
Federal debt (% of GDP)						
Post-budget scenario	49.6	51.3	50.5	50.2	49.7	49.2
Pre-budget outlook	49.3	49.8	48.6	47.8	46.8	45.8
	0.3	1.4	1.9	2.5	3.0	3.5

Source: Parliamentary Budget Officer.

Note: * Includes net actuarial losses. Totals may not add due to rounding.

3. Fiscal sensitivities

To illustrate the sensitivity of the post-budget scenario to economic shocks, we estimate the fiscal impacts of three key shocks.

i. A permanent 1 per cent decrease in the level of real GDP.[13]
ii. A permanent 1 per cent decrease in the GDP price level.[14]
iii. A permanent 100-basis-point increase in all interest rates.[15]

In constructing our sensitivity estimates, we assume that changes in nominal GDP are proportional across income and expenditure components. Further, it is important to note that these economic shocks are illustrative and simplifications of a complex and endogenous system. As such, these estimates should be considered stylized rules of thumb.

Table 3-1 Fiscal sensitivity to economic shocks

$ billions	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Permanent 1 per cent decrease in the level of real GDP					
Revenues	-3.7	-4.4	-4.7	-5.0	-5.1
Program spending*	1.1	0.8	0.6	0.3	0.2
Public debt charges	0.0	0.1	0.2	0.3	0.5
Budgetary balance	-4.8	-5.3	-5.5	-5.6	-5.8
Permanent 1 per cent decrease in the GDP price level					
Revenues	-3.7	-3.2	-3.2	-3.3	-3.4
Program spending*	-1.2	-1.6	-2.0	-2.4	-2.5
Public debt charges	0.0	0.0	0.0	0.1	0.1
Budgetary balance	-2.4	-1.6	-1.2	-1.1	-1.0
Permanent 100-basis-point increase in all interest rates					
Revenues	2.4	2.0	1.6	1.6	1.6
Program spending*	-7.3	-7.9	-7.5	-7.1	-6.6
Public debt charges	3.6	7.2	8.7	9.4	10.0
Budgetary balance	6.1	2.7	0.4	-0.7	-1.8

Source: Parliamentary Budget Officer.

Note: * Includes net actuarial losses. Totals may not add due to rounding.

4. Uncertainty surrounding the post-budget scenario

To illustrate uncertainty surrounding our post-budget economic scenario, we first construct distributions of possible future outcomes. These distributions are centred on the profiles of real GDP, the GDP price level and interest rates in the post-budget scenario. Based on these distributions, we then construct forecast (or "confidence") intervals.[16]

To illustrate the fiscal implications of the uncertainty surrounding the post-budget economic scenario, using our fiscal sensitivities, we mapped the distributions of future economic outcomes into budgetary components and constructed forecast intervals for key fiscal aggregates.[17]

Table 4-1 summarizes the 70 per cent forecast intervals for key economic indicators in our post-budget scenario. A 70 per cent forecast interval implies there is a 70 per cent chance that the future outcome will fall within the specified range.[18]

Table 4-1 70 per cent forecast intervals for the post-budget scenario

%		2021	2022	2023	2024	2025
	High	**7.1**	**5.5**	**3.5**	**3.4**	**3.1**
Real GDP growth	Scenario	6.2	3.9	1.8	1.6	1.4
	Low	**5.3**	**2.3**	**0.0**	**-0.1**	**-0.2**
	High	**5.1**	**3.9**	**3.8**	**3.7**	**3.8**
GDP inflation	Scenario	4.2	2.3	2.2	2.1	2.1
	Low	**3.2**	**0.7**	**0.6**	**0.5**	**0.5**
	High	**0.5**	**1.6**	**2.3**	**2.8**	**3.4**
3-month treasury bill rate	Scenario	0.2	0.4	1.0	1.5	2.0
	Low	**0.0**	**0.0**	**0.0**	**0.2**	**0.6**
	High	**1.7**	**2.3**	**2.9**	**3.3**	**3.9**
10-year government bond rate	Scenario	1.4	1.6	2.0	2.4	2.8
	Low	**1.0**	**1.0**	**1.2**	**1.6**	**1.8**

Source: Parliamentary Budget Officer.

Note: "High" refers to the 85th percentile and "low" refers to the 15th percentile of the distribution of outcomes.

Based on the distributions of future economic outcomes we generated over 2021 to 2025 and our fiscal sensitivities, we estimate that a 70 per cent forecast interval for the budgetary deficit would range from $9.3 billion to $63.1 billion in 2025-26 (Table 4-2).

In 2025-26, we estimate that a 70 per cent forecast interval for the federal debt-to-GDP ratio would range from 44.0 per cent to 55.0 per cent.

Table 4-2 70 per cent forecast intervals for the post-budget scenario

$ billions		2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
	High	**358.1**	**397.4**	**422.2**	**444.6**	**465.5**
Revenues	Scenario	349.7	381.5	402.0	420.3	437.5
	Low	**341.5**	**366.1**	**381.8**	**395.9**	**409.1**
	High	**486.7**	**418.5**	**422.9**	**429.2**	**443.1**
Program spending*	Scenario	484.5	415.3	417.9	422.3	434.4
	Low	**481.4**	**410.0**	**411.5**	**415.0**	**425.6**
	High	**23.5**	**29.5**	**34.8**	**40.0**	**44.6**
Public debt charges	Scenario	21.9	25.2	30.2	35.0	39.1
	Low	**21.2**	**23.6**	**26.9**	**30.6**	**34.0**
	High	**-148.1**	**-43.0**	**-26.0**	**-13.4**	**-9.3**
Budgetary balance	Scenario	-156.8	-59.0	-46.1	-37.0	-36.0
	Low	**-165.1**	**-74.8**	**-66.2**	**-60.8**	**-63.1**
	High	**52.4**	**52.9**	**53.9**	**54.4**	**55.0**
Federal debt-to-GDP ratio (%)	Scenario	51.3	50.5	50.2	49.7	49.2
	Low	**50.2**	**48.1**	**46.9**	**45.4**	**44.0**

Source: Parliamentary Budget Officer.

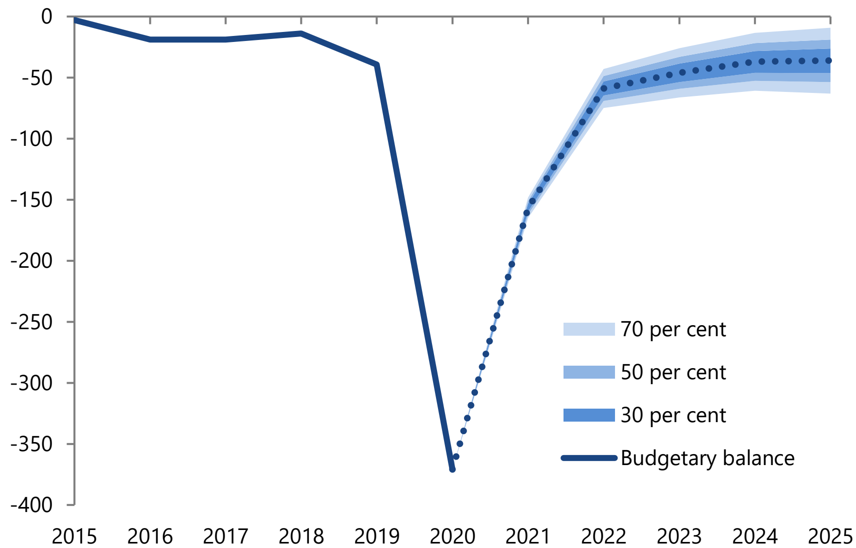
Note: * Includes net actuarial losses. "High" refers to the 85th percentile and "low" refers to the 15th percentile of the distribution of outcomes.

Given the possible economic outcomes surrounding our post-budget scenario, and on a status quo basis (that is, without future policy actions), we estimate that there is a 5 per cent chance that the budget will be balanced or in a surplus position in 2025-26.

In addition, we estimate there is a 65 per cent chance that the federal debt-to-GDP ratio in 2025-26 would be below its 2021-22 level of 51.3 per cent of GDP. Figures 4-1 and 4-2 provide a visual representation of our forecast intervals for the budgetary balance and federal debt-to-GDP ratio using fan charts.

Figure 4-1 Forecast intervals for the budgetary balance

$ billions

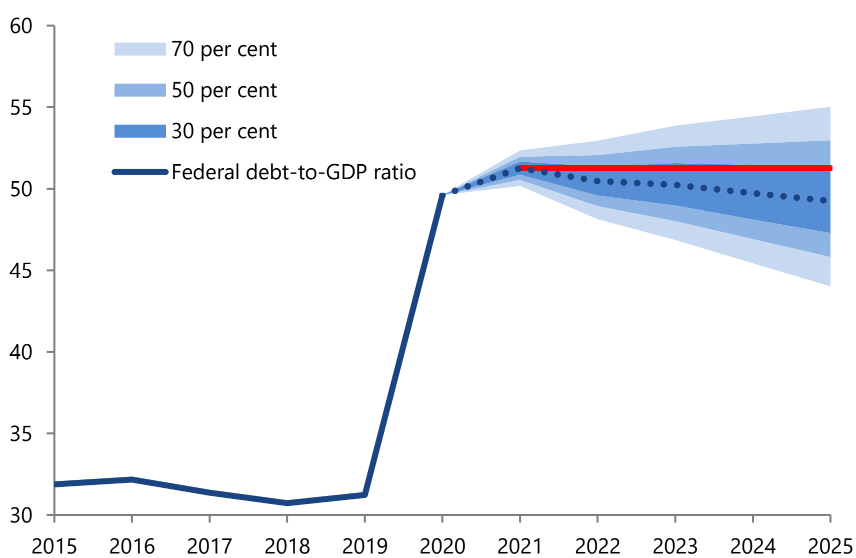


Sources: Finance Canada and Parliamentary Budget Officer.

Note: The series are presented on a fiscal-year basis where 2015 refers to 2015-16. Projection period covers fiscal years 2021-22 to 2025-26.

Figure 4-2 Forecast intervals for the federal debt-to-GDP ratio

% of GDP



Sources: Finance Canada, Statistics Canada and Parliamentary Budget Officer.

Note: The series are presented on a fiscal-year basis where 2015 refers to 2015-16. Projection period covers fiscal years 2021-22 to 2025-26. The red line corresponds to the level of the federal debt-to-GDP in 2021-22.

Notes

1. In our post-budget issues report, we estimated the economic impact of Budget 2021 stimulus spending on real GDP and employment based on the assumption that monetary policy does not respond to increased economic activity and higher inflation—consistent with Finance Canada's assumption. In this report, we expand our analysis to include other Budget 2021 measures, as well as a monetary policy response.

   PBO's report on key issues arising from Budget 2021 is available at: https://www.pbo-dpb.gc.ca/en/blog/news/RP-2122-004-S--budget-2021-issues-parliamentarians--budget-2021-enjeux-parlementaires.

   PBO's pre-budget outlook is available at: https://www.pbo-dpb.gc.ca/en/blog/news/RP-2021-046-S--pre-budget-outlook--perspectives-prebudgetaires.

2. Our pre-budget outlook included economic data up to and including March 12.

3. Our pre-budget fiscal outlook included $12.1 billion in measures to increase the number of weeks for recovery benefits and Employment Insurance regular benefits that the Government announced on February 19.

4. Economic impacts are typically estimated based on cash flows, which are more closely tied to the timing of transactions that give rise to economic activity and production.

   To arrive at the cash profile for our economic impact assessment, we exclude $24.5 billion in (incremental) new COVID-19 spending. The purpose of COVID-19 spending is to provide income support to households and businesses during the pandemic and therefore stabilize—rather than stimulate—the economy.

   In our model simulation, we assume that new COVID-19 spending helps to maintain economic activity and employment at levels projected in our pre-budget outlook. That is, we assume that these support measures do not provide incremental economic stimulus relative to our previous outlook. However, the incremental new COVID-19 measures do flow through into our fiscal framework.

   Consistent with Finance Canada's economic impact assessment in Budget 2021, we also exclude measures that have no impact on GDP such as contingencies and international initiatives. On a cash basis, (incremental) non-COVID-19 measures that are excluded from our assessment amount to $4.3 billion over 2020-21 to 2025-26.

5. As Budget 2021 notes, each of these categories has a different fiscal multiplier. PBO's fiscal multipliers are available at: https://www.pbo-dpb.gc.ca/en/blog/news/BLOG-2021-013--fiscal-multipliers-fiscal-sensitivities--multiplicateurs-budgetaires-sensibilites-perspectives-financieres.

6. To ensure comparability to Finance Canada's economic impact assessment in Budget 2021, our earlier estimate of the impact of stimulus spending did not include a monetary policy response.

7. Some of the Budget 2021 measures feed directly into potential GDP (for example, through non-residential investment) and second-round effects of higher business investment also increase potential GDP. By the end of 2025, we estimate that Budget 2021 measures increase the level of potential GDP by 0.4 per cent relative to our pre-budget outlook.

8. Some judgement is included in our model's Phillips curve equation in the near term to reflect the impact of supply constraints that are not captured in the model.

9. With the exception of forward-looking expectations, the monetary policy reaction function in PBO's model is similar to the specification in the Bank of Canada's LENS model (see https://www.bankofcanada.ca/2014/07/technical-report-102/). Our reaction function includes the neutral rate of interest, the output gap and the deviation of inflation from its target of 2 per cent.

   Our reaction function would suggest starting to increase the policy rate almost immediately, but gradually, rising to 0.75 per cent in the fourth quarter of 2022. Thus, our assumed "lift-off" in the third quarter of 2022, effectively "turns off" of the monetary policy reaction function over the first six quarters of the post-budget scenario.

   We implicitly assume that the Bank of Canada's quantitative easing (QE) program will continue to be adjusted and will be effectively terminated by the policy rate lift-off in the third quarter of 2022.

10. PBO's nominal neutral interest rate of 2.25 per cent is consistent with the mid-point of the Bank of Canada's estimated range of 1.75 to 2.75 per cent. See Box 1 in the Bank of Canada's April 2021 Monetary Policy Report, available at: https://www.bankofcanada.ca/2021/04/mpr-2021-04-21/.

11. In the absence of a monetary policy response, we estimate that real GDP would be 1.1 per cent higher by the end of 2025 relative to our post-budget outlook. Employment would be 123 thousand (0.6 per cent) net jobs higher by the end of 2025. Without a monetary policy response, total CPI inflation would average 2.2 per cent over 2023 to 2025.

12. Under our post-budget scenario, nominal GDP is $16 billion in 2021 and $35 billion higher per year, on average, over 2022 to 2025.

13. We assume that the decrease in real GDP is driven equally by lower productivity and employment.

14. We assume that the Consumer Price Index moves in line with the decrease in the GDP price level.

15. Higher interest rates directly increase public debt charges as existing debt is refinanced and future borrowing requirements are financed at higher rates. However, higher interest rates also lead to higher other revenues (from the Government's interest-bearing assets) and lower net actuarial losses (related to future benefit obligations to federal employees), which provide an important offset to public debt charges.

16. The dispersion of these distributions is based on the historical forecasting performance of private sector economists in Finance Canada's survey over 1994-2019.

The year 2020 is treated as an outlier and therefore excluded from the sample (1994-2019) to assess forecast performance. Given the relatively limited number of PBO medium-term projections, we use Finance Canada's survey results instead. That said, the performance of PBO economic projections and the survey-based forecasts is broadly similar over shorter-term horizons. See PBO's review of its economic and fiscal projections at: https://www.pbo-dpb.gc.ca/en/blog/news/RP-2021-041-S--review-pbo-economic-fiscal-projections--revision-projections-economiques-financieres-dpb.

We also include the (contemporaneous) correlation across forecast errors (for real GDP growth, GDP inflation and interest rates) in constructing our distributions of economic outcomes. Interest rates are constrained to take on non-negative values.

17. A key limitation of the distributions of the budgetary components is that they reflect only "economic" uncertainty. They do not reflect uncertainty related to the translation of economic projections into fiscal projections; discretionary fiscal policy responses to different economic outcomes; or, non-economic risks (for example, expenses related to legal liabilities).

18. The choice of a 70 per cent forecast interval is based on the widest range shown in PBO's previously published economic and fiscal fan charts. For example, see our November 2019 Economic and Fiscal Outlook, available at: https://www.pbo-dpb.gc.ca/en/blog/news/RP-1920-022-S--economic-and-fiscal-outlook--perspectives-economiques-financieres-nov-2019.