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Briefing Note

The Budgetary Balance and the Economic Cycle

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The *Federal Accountability Act* mandates the Parliamentary Budget Officer (PBO) to provide independent analysis to the Senate and House of Commons on the state of the nation's finances, government estimates and trends in the national economy.

In meeting the commitments of this mandate, this short note addresses some key issues related to budgetary balances and the economic cycle:

- *In the absence of publicly available estimates, this note provides approximate estimates of the projected performance of the Canadian economy relative to its potential (i.e., the output gap) and of the Government's structural budget balance.*

- *Estimates of output gaps and structural budget balances can help inform discussion and debate about the magnitude and nature of fiscal actions needed to stabilise the economy and the impact on the budgetary position.*

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The current and anticipated economic weakness in Canada has raised concerns about discretionary fiscal actions and structural budget deficits. Indeed, the recent Economic and Fiscal Statement (EFS) noted that the Government of Canada would, "help ensure that on a structural basis (i.e. absent the temporary, cyclical weakness), the Government remains in a surplus position". However, to date, discussions and analysis of budget deficits and the magnitude of fiscal actions required to stabilise the economy have not been based on estimates or couched in terms of the economic cycle. In the absence of publicly available estimates, this note provides approximate estimates of the projected performance of the Canadian economy relative to its potential over 2008-2013 and the Government's structural budget balance over the period 2008-09 to 2012-13. In addition, although these rough estimates can be used to provide a range of the magnitude of fiscal actions required to stabilise the economy over the same period, considerable further work in this area is required.

1. Key Points

- Based on a range of assumptions and given recent private sector forecasts presented in the 2008 Economic and Fiscal Statement, the Canadian economy is projected to remain below its potential level of activity over the period 2008-2013.
    - Using Department of Finance estimates of the output gap (real GDP relative to potential GDP) and a mid-point assumption for potential GDP growth suggests that the EFS outlook is comparable to the 1991 recession and weak recovery.
    - Moreover, since private sector forecasters have recently revised down their real GDP growth forecasts, the projected output gap would be larger.
- The EFS (before fiscal actions) projects a deterioration in the budgetary balance in 2008-09 and further in 2009-10, improving thereafter even though the economy remains significantly below its potential, which suggests that a structural surplus exists.
    - Rough estimates suggest that the Government of Canada's structural budget surplus rises from $3.3 billion in 2009-10 to $5.9 billion in 2011-12.
- In assessing fiscal stimulus measures, the economic impact of policy actions could be measured against the degree to which such actions close or narrow the output gap.
    - For example, assuming that increased government spending translates into a one-for-one increase in real GDP (i.e., a fiscal multiplier of one), then a stimulus measuring 2% of GDP would close more than half of the projected output gap in 2009.
    - A larger fiscal multiplier would reduce the output gap to a greater extent.
- By separating out the structural and cyclical components of the budget balance, the impact on the budget balance of stimulus measures can be appropriately identified.
    - For example, if a fiscal stimulus of 2% of GDP (roughly $30 billion) was initiated in 2009-10, this would reduce the cyclical balance further by about $30 billion and result in a budget deficit exceeding $34 billion.

- As long as this stimulus remains temporary and does not become permanent – a crucial assumption – the projected structural surplus would remain in tact.
- Based on our rough estimates, permanent and ongoing fiscal actions exceeding $6 billion annually would result in structural deficits.

2. The Output Gap and the Economic Cycle

Economists and forecasters typically assess an economy's performance relative to its potential, i.e. the level of output produced when labour is at its potential, capital is fully utilized and technology is at its trend value.[1] In expansionary periods, real GDP growth exceeds its potential growth rate and this pushes the economy closer to its potential level (if the economy is initially below its potential level) or further above its potential (if the economy is initially at or above its potential level). The percentage difference between observed real GDP and potential GDP is referred to as the output gap.

Estimates of potential GDP are crucial for monetary and fiscal policymakers who require estimates of the economy's capacity to gauge inflationary pressures and to assess the budgetary position over the business cycle. Unfortunately, an economy's potential GDP and output gap are not directly observable and therefore must be estimated. Fortunately the Department of Finance and the Bank of Canada construct estimates of potential GDP which are used in their respective policy analyses and deliberations. In addition, the Department of Finance also publishes estimates of the structural, or cyclically-adjusted, budget balance over history, going back to 1975 (see Annex 1). However, given the absence of published estimates over the forecast horizon 2008-2013, it is necessary to construct them.

One approach that can be used to construct estimates of potential GDP over the forecast horizon involves extrapolating the initial level of potential GDP using estimates of future potential growth.

- The Department of Finance estimates that in 2007 the Canadian economy was at its potential, implying an output gap of zero, which provides the initial level of potential GDP.[2]
- Future potential growth is assumed at 2.4% annually and an upper bound of 2.7% and lower bound of 2.1% are also considered. This range is consistent with estimates of potential growth provided by private sector forecasters and the Bank of Canada.[3]
- Next, the average private sector forecast of real GDP growth presented in the EFS (Table 1.1) provides the projection of "actual" real GDP over the 2008-2013 horizon from which the projected output gap is constructed.

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[1] See "The Canadian and Economic Fiscal Model: Part 1" Department of Finance Working Paper 98-05 (p. 4).

[2] The September 2008 Fiscal Reference Tables (FRT) published by the Department of Finance indicate that in 2007 the actual budget balance (National Accounts basis) was almost identical to the estimate of the cyclically-adjusted budget balance (Table 45) which implies that actual GDP equals potential GDP and a zero output gap. Table 46 in the FRT expresses these balances in terms of (nominal) potential GDP which is defined as real potential GDP multiplied by the (actual) GDP price deflator. In this note we assume that on a Public Accounts basis, the actual budget balance equals the structural budget balance in the fiscal year 2007-08.

[3] For example, in its October 2008 Monetary Policy Report the Bank of Canada estimates potential output growth of 2.3% in 2008 and assumes potential output growth of 2.4% in 2009 and 2.5% in 2010 and 2011.

Table 1 shows that under the assumption of 2.4% potential growth, the output gap would reach -3.8% in 2009 and then gradually narrow to -2.2% in 2013. With assumed slower potential growth of 2.1%, the output gap would reach -3.2% in 2009 and then almost close by 2013 (-0.4%). With assumed faster potential growth of 2.7%, the output gap would trough at 4.4% in 2010 and remain at around -4% in the following years. In all cases, the Canadian economy is projected to remain below its potential for the entire 6-year projection horizon.

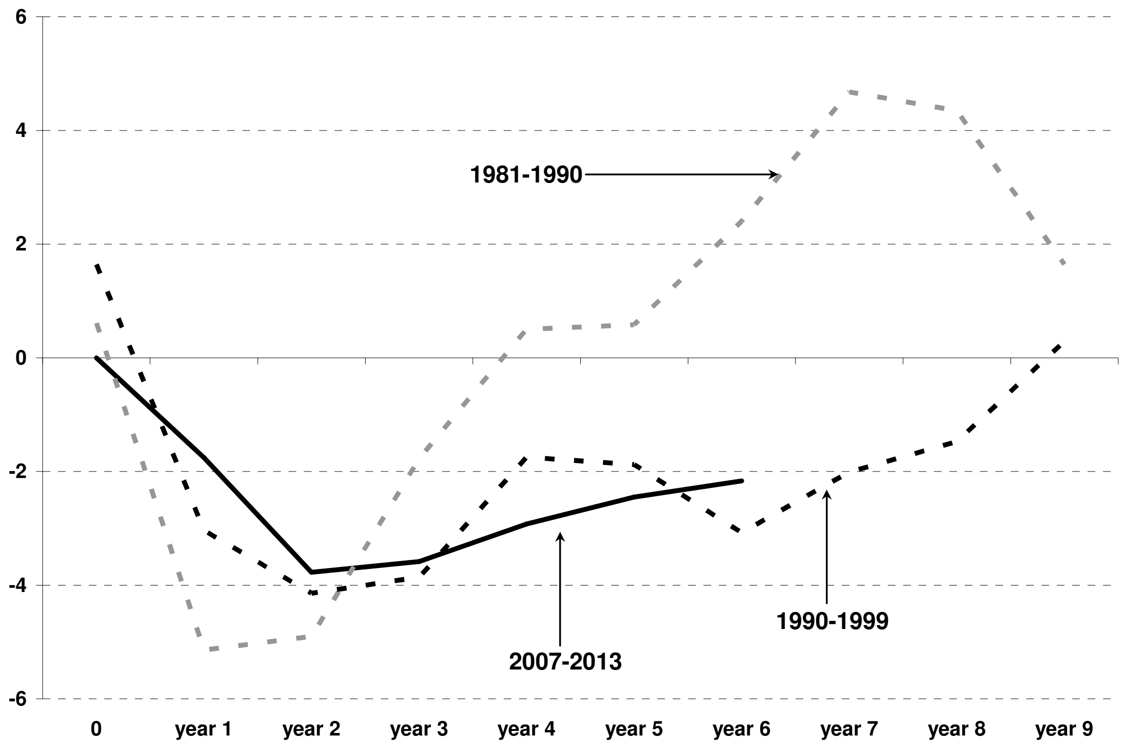
Table 1 Output gap projections 2008-2013 (% of potential GDP)

	2007*	2008	2009	2010	2011	2012	2013
EFS real GDP growth (%)	2.7	0.6	0.3	2.6	3.1	2.9	2.7
Output gap with 2.4% potential GDP growth	0.0	-1.8	-3.8	-3.6	-2.9	-2.5	-2.2
Output gap with 2.1% potential GDP growth	0.0	-1.5	-3.2	-2.7	-1.8	-1.0	-0.4
Output gap with 2.7% potential GDP growth	0.0	-2.0	-4.3	-4.4	-4.1	-3.9	-3.9

* Department of Finance estimate of the output gap in 2007 based on the September 2008 Fiscal Reference Tables.

To provide some context for the projected weakness, Chart 1 below presents the projected output gap (based on assumed potential growth of 2.4%) alongside Department of Finance estimates of the output gap in past recessionary periods. Based on the average private sector forecast presented in the EFS, the current economic outlook lines up closely with the 1991 recession and subsequent weak recovery. Moreover, since private sector forecasters have recently revised down their real GDP growth forecasts, the projected output gap would be larger, assuming no changes to estimates of potential growth.

Chart 1 Projected Output Gap and Past Recessionary Periods (% of potential GDP)



Source: Department of Finance, Office of the Parliamentary Budget Officer.

3. Structural Budget Balances

The November EFS presented forecasts of budget balances for fiscal years 2008-09 to 2012-13, both before and after accounting for fiscal actions such as reduced departmental spending and asset sales. Table 2 presents the EFS forecast of the budget balance before fiscal actions along with the output gap based on the EFS forecast of real GDP growth and assuming potential growth of 2.4% over the period 2008-2013. While the budget balance deteriorates in 2008-09 and further in 2009-10, it does improve thereafter even though the economy remains significantly below its potential over this period. This suggests that the projected deterioration beginning in 2009-10 is largely cyclical and that there in fact exists a structural surplus.

Table 2 EFS budget balance forecast before actions and the output gap

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Budgetary balance ($ billions)	+9.6	+0.2	-5.9	-3.4	-1.9	+1.8
Output gap* (% of potential GDP)	0.0	-1.8	-3.8	-3.6	-3.1	-2.6

* Calendar year basis (2007-08 estimate refers to calendar year 2007).

Given that the economy is at its potential in 2007-08 we have constructed rough estimates of the structural balances going forward based on a number of simple assumptions about the structural growth in revenues and expenditures (details in Annex 2).

- First, we assume underlying structural revenues grow with our assumed growth in potential GDP of 2.4% and 2.1% inflation (resulting in nominal growth of 4.6%).[4]
- We then make adjustments to incorporate recent structural changes affecting revenues in 2008 and beyond, based on published Department of Finance estimates, including the permanent reduction to the GST (i.e., the additional 1 percentage point reduction as of January 1, 2008), and scheduled reductions in corporate income tax rates.
- On the spending side, we adopt the program spending forecast contained in the 2008 EFS, with an adjustment for EI benefits, the main cyclical component, and remove the proposed savings from spending reviews.[5] In essence, we are assuming that program expenditure, other than EI benefits, is structural in nature. This seems reasonable given that the Government's remaining expenditure projection is largely unaffected by changes in the economy, save for small implications for Old Age Security and Equalization.
- Finally, public debt charges are assumed to remain at their 2007-08 level.

Table 3 presents our estimates of the structural and cyclical budget balances based on the above assumptions (see Annex 2 for further detail). Our estimates suggest that the deterioration in the structural balance to $3.3 billion in 2009-10 from $9.6 billion in 2007-08 reflects permanent tax reductions.

- The structural balance is projected to improve starting in 2010-11, as the structural growth in revenues (even after accounting for previously announced tax reductions) exceeds that of expenditure, reaching $5.9 billion in 2011-12 and totals $24.7 billion over the projection horizon (2008-09 to 2012-13).
- Based on the assumption of 2.7% (2.1%) potential GDP growth, the projected structural surplus would total $37.8 billion ($11.8 billion) over 2008-09 to 2012-13.

Table 3 Actual, structural and cyclical budget balances

($ billions)	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**
2008 EFS budgetary balance (before actions)	+9.6	+0.2	-5.9	-3.4	-1.9	+1.8
2008 EFS actions (excluding assets sales/review savings)	-	+0.6	+1.7	+1.6	+1.4	+1.3
Budgetary balance	+9.6	+0.8	-4.2	-1.8	-0.5	+3.1
Structural budgetary balance	**+9.6**	**+4.7**	**+3.3**	**+5.0**	**+5.9**	**+5.9**
Cyclical budgetary balance	0.0	-3.9	-7.5	-6.8	-6.4	-2.8

[4] The assumption of 2.1% GDP inflation is based on the average of the annual forecasts of GDP inflation over the period 2008-2013 presented in the EFS (see EFS Table 1.1).

[5] These actions have been excluded due to the uncertainty regarding their implementation/attainability.

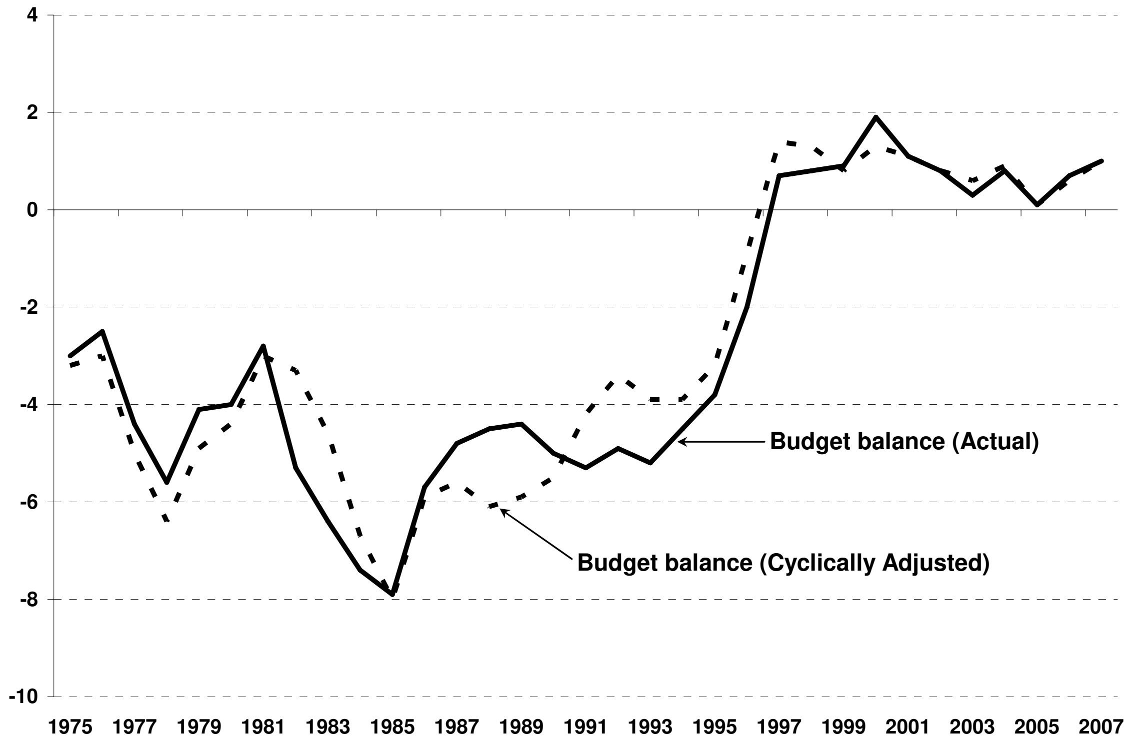
4. Providing Fiscal Stimulus

Recent discussion and debate about providing fiscal stimulus to the economy have not explicitly taken into account the output gap and the impact on the budgetary position. While an estimate, and in this note an approximation, of the economy's position relative to its potential, the output gap also provides a natural objective or target for stabilising the economy. That is, the economic impact of policy actions could be measured against the degree to which such actions close or narrow the output gap. For example, assuming increased government spending and a fiscal multiplier of one (i.e., increased spending translates into a one-for-one increase in real GDP, without affecting potential GDP in the near term), then a spending stimulus measuring 2% of GDP, the magnitude recommended by the IMF, would close more than half of the projected output gap in 2009. Of course the crucial element of this calculation is the fiscal "multiplier" which is the increase in real GDP resulting from increased government spending adjusted for leakages through increased imports and/or savings. A larger fiscal multiplier would reduce the output gap to a greater extent.

In addition, by separating out the structural and cyclical components of the budget balance, the impact on the budget balance of stimulus measures can be appropriately identified. For example, if a fiscal stimulus of 2% of GDP (roughly $30 billion) was initiated in 2009-10, this would reduce the cyclical balance further by about $30 billion and result in a budget deficit exceeding $34 billion. However, as long as this stimulus remains temporary and does not become permanent – a crucial assumption – the projected structural surplus would remain in tact.[6] Based on our rough estimates, permanent fiscal actions exceeding $6 billion annually would result in structural deficits.

[6] Our projections do not include an estimate of the impact on public debt charges associated with the increase in market debt that would be required to finance a stimulus package. However, increased debt of $30 billion financed at current market rates would result in significantly less than $1 billion in additional public debt charges, considerably smaller than our estimates of the structural surplus.

Annex 1 – Budgetary Balance, Actual and Cyclically Adjusted (% of potential GDP, National Accounts basis)



Source: Department of Finance, September 2008 Fiscal Reference Tables.

Annex 2 – Calculations and Assumptions

	2007 Actual	2008	2009	2010	2011	2012
Potential output growth assumptions (%)						
GDP inflation	3.1	2.1	2.1	2.1	2.1	2.1
Real GDP growth	2.7	2.4	2.4	2.4	2.4	2.4
Nominal GDP growth	5.9	4.6	4.6	4.6	4.6	4.6
EFS 2008 real GDP growth	2.7	0.6	0.3	2.6	3.1	2.9

	2007-08 Actual	2008-09	2009-10	2010-11	2011-12	2012-13
Revenue and expense assumptions ($billions)						
Budgetary revenues	242.4	253.5	265.0	277.0	289.6	302.8
growth (%)		*4.6*	*4.6*	*4.6*	*4.6*	*4.6*
Program expenses	199.5	206.3	217.8	226.1	235.2	244.8
Public debt charges	33.3	33.3	33.3	33.3	33.3	33.3
Insured Mortgage Purchase Program		0.2	1.1	0.7	0.4	0.3
Structural changes to tax revenues (see below)						
GST		4.6	4.8	5.1	5.2	5.3
Corporate Income Tax (CIT)		4.7	6.7	8.0	10.2	13.4
Tax Free Savings Account (Budget 2008)		0.0	0.1	0.2	0.3	0.4
		9.3	11.6	13.3	15.7	19.1
Structural budget balance	**9.6**	**4.7**	**3.3**	**5.0**	**5.9**	**5.9**

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Calculation of structural changes to tax revenues ($billions)[1]						
Source: 2007 Economic Statement, Table 3.1						
GST	7.1	12.0	12.6	13.2	13.7	14.2
CIT	1.1	5.9	7.9	9.3	11.5	14.8
Total	8.2	17.9	20.5	22.5	25.2	29.0
2007-08 Base year grown with revenues						
GST	7.1	7.4	7.8	8.1	8.5	8.9
CIT	1.1	1.2	1.2	1.3	1.3	1.4
Total	8.2	8.6	9.0	9.4	9.8	10.2
Post 2007-08 implications						
GST		4.6	4.8	5.1	5.2	5.3
CIT		4.7	6.7	8.0	10.2	13.4
Total		**9.3**	**11.5**	**13.1**	**15.4**	**18.8**

1. The post 2007-08 implications are calculated by removing the impact of structural tax measures announced in the 2007 EFS that were in place as of 2007-08 for GST and CIT measures. Personal Income Tax measures introduced in the statement are assumed to be fully incorporated as of 2007-08.