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A Comparison of Finance Canada and PBO Estimates of the Government of Canada's Structural Budget Balance

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The mandate of the Parliamentary Budget Officer (PBO) is to provide independent analysis to Parliament on the state of the nation's finances, the government's estimates and trends in the Canadian economy; and upon request from a committee or parliamentarian, to estimate the financial cost of any proposal for matters over which Parliament has jurisdiction.

This note provides a comparison of Finance Canada and PBO estimates of the Government of Canada's structural (or cyclically-adjusted) budget balance, which is defined as the budgetary balance that would be observed if the economy were operating at its potential gross domestic product (GDP) or income. Structural budget balances provide useful information about a government's underlying financial position and can be used to help guide policy actions.

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Key Points

- Estimates of structural, or cyclically-adjusted, budget balances provide useful information about a government's underlying financial position and can be used to help guide policy actions.
- Finance Canada has recently updated its cyclical-adjustment methodology to incorporate – as PBO already does – the impact of transitory fluctuations in the terms of trade (i.e., export prices relative to import prices).
- Finance Canada and PBO estimates of the Government of Canada's structural budget balance track each other quite closely over 1976-2005; however, Finance Canada's estimates have been about \$10 billion higher, on average, than PBO's estimates over 2006-2010.
- PBO believes that differences in estimates of the economy's performance relative to its potential income are largely responsible for this discrepancy.
- Based on PBO assumptions, Finance Canada's estimates would suggest that – relative to potential income – the economy did not recover in 2010 and was operating at a historic low of 5.5 per cent below its potential income.
- Finance Canada could improve fiscal transparency by publishing its estimates and medium-term forecasts of the economy's potential GDP/income and of the Government of Canada's structural budget balance, as well as its methodology and assumptions used.

1 Background

Conventional measures of the structural or cyclically-adjusted budget balance represent the budget balance that would be observed if the economy were operating at its potential GDP. Given the importance of the production of

commodities to the Canadian economy, it is helpful to further adjust the budgetary balance to account for transitory fluctuations in the terms of trade or trading gain.¹

Estimates of the structural budget balance help provide a snapshot of a government's underlying financial situation. Moreover, distinguishing between structural and cyclical components of a government's budget balance is crucial because, while the cyclical component may be expected to dissipate over a medium-term horizon as the economy returns to its potential, the structural component may necessitate policy actions.² As noted in the 2003 Finance Canada working paper "Fiscal Policy and the Business Cycle: A New Approach to Identifying the Interaction" by S. Murchison and J. Robbins³ such distinctions would help policymakers in setting effective policies:

For instance, permanent programs should not be implemented based on cyclical changes in the budgetary position. Moreover, it may be inappropriate to take fiscal measures to reverse a deficit as it may already be in the course of reversing itself as economic conditions improve. Conversely, government action may be required to reverse a widening structural deficit in order to restore financial integrity.

The concept of a structural budget balance has also figured into the Government of Canada's fiscal planning. For example, Budget 2009 indicated that one of the principles guiding the Government of Canada's Economic Action Plan was that the "stimulus plan should be phased out when the economy recovers to avoid long-term structural deficits."

¹ Statistics Canada notes that the trading gain captures the impact of relative price changes, primarily the terms of trade and represents the number of exported goods that must be given up to acquire an imported good. For example, see the Statistics Canada research paper available at:

<http://www.statcan.gc.ca/pub/11f0027m/11f0027m2007048-eng.pdf>.

² To assess whether a government's fiscal structure is sustainable, however, requires looking over a longer-term horizon to take into account the economic and fiscal implications of population ageing.

³ Murchison, S., and J. Robbins. 2003. "Fiscal Policy and the Business Cycle: A New Approach to Identifying the Interaction." Department of Finance Working Paper No. 2003-06. Available at: <http://www.fin.gc.ca/wp/2003-06-eng.asp>.

Finance Canada publishes, on an annual basis, the *Fiscal Reference Tables* (FRT), which provide “annual data on the financial position of the federal, provincial-territorial and local governments” including its estimate of the Government of Canada’s structural budget balance on a National Accounts basis (see Tables 45 and 46).⁴ Prior to 2011, Finance Canada’s cyclical-adjustment methodology was based on Murchison and Robbins (2003). Although Finance Canada has recently updated its cyclical-adjustment methodology, it has not (yet) published the details of its new methodology.

Since a government’s structural budget balance is not directly observable and therefore must be estimated, it is useful to compare estimates produced by different organizations such as Finance Canada and PBO, particularly given (apparent) similarities in their methodologies.

2 Estimates of the Government of Canada’s Structural Budget Balance, 1975-2010

Finance Canada Estimates

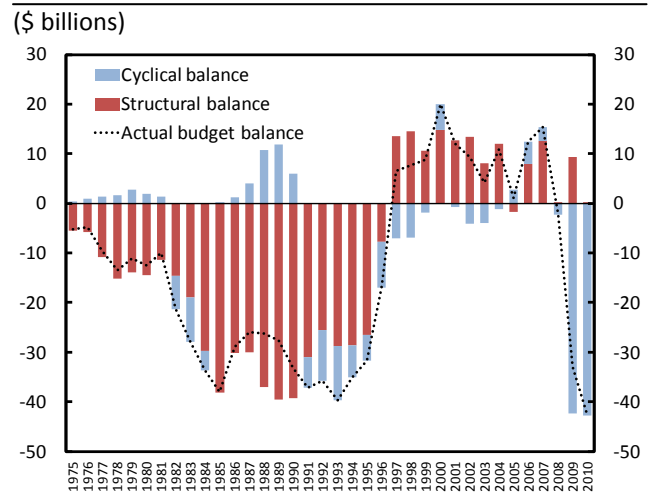
With the publication of the 2011 FRT, Finance Canada updated its cyclical-adjustment methodology to incorporate – as PBO already does⁵ – “the effects from terms of trade in the calculation of the cyclical component”. In effect, this results in adjusting budgetary components by an ‘income’ gap, as opposed to a ‘production’ or GDP gap, which helps to identify movements in the budgetary balance due to transitory fluctuations in the terms of trade, which are primarily driven by movements in commodity prices.

Based on the National Accounts, Finance Canada estimates that since 1997 (with the exception of 2005) the Government of Canada has remained in

a structural surplus position following 22 years of structural deficits (Figure 2-1). In 2010, the Government of Canada recorded a budget deficit of \$42.6 billion, which Finance Canada estimated was entirely cyclical in nature and that there was a small structural surplus of \$0.2 billion.⁶ Finance Canada’s estimate of the budget balance in 2010 (as well as in 2009) reflects not only the impacts of the global recession but also – following PBO – the inclusion of temporary Economic Action Plan (EAP) measures.

Figure 2-1

Finance Canada Estimates of the Government of Canada’s Structural and Cyclical Budget Balances



Source: Finance Canada; Statistics Canada.
Note: National Accounts basis.

PBO Estimates

PBO regularly provides estimates, on a Public Accounts basis, of the Government of Canada’s structural budget balance in its reports on the economic and fiscal outlook. However, to put estimates of the Government of Canada’s structural budget balance on a more comparable basis, PBO has applied its cyclical-adjustment

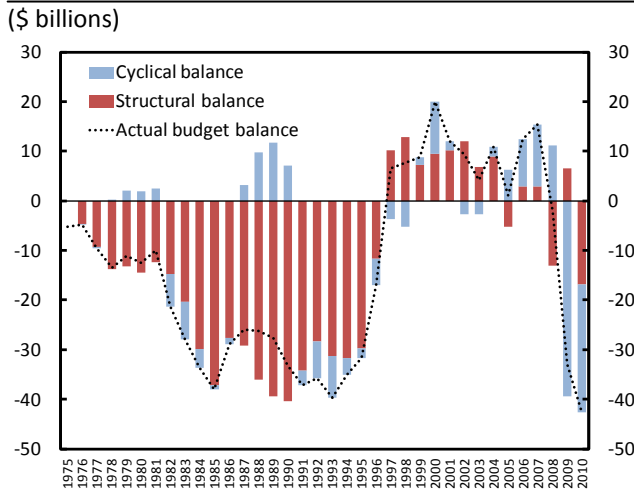
⁴ The 2011 *Fiscal Reference Tables* were published on October 12, 2011 and are available at: <http://www.fin.gc.ca/frt-trf/2011/frt-trf-11-eng.pdf>. The FRT is also available in Excel format at: <http://www.fin.gc.ca/frt-trf/2011/frt-trf-11-eng.asp>.

⁵ A description of PBO’s cyclical-adjustment methodology is available at: http://www.parl.gc.ca/PBO-DPB/documents/Potential_CABB_EN.pdf.

⁶ On a Public Accounts basis, the Government of Canada recorded a budgetary deficit of \$33.4 billion in 2010-11. The Public Accounts measure is presented on a ‘full accrual’ basis and corresponds to the fiscal year beginning on April 1, 2010 and ending on March 31, 2011. The National Accounts measure of the budget balance includes both accrual and modified-cash components and corresponds to the 2010 calendar year.

methodology to the National Accounts data. Based on the National Accounts, PBO estimates that there was a structural deficit of \$13.1 billion in 2008 and \$16.8 billion in 2010 (Figure 2-2).

Figure 2-2
PBO Estimates of the Government of Canada's Structural and Cyclical Budget Balances

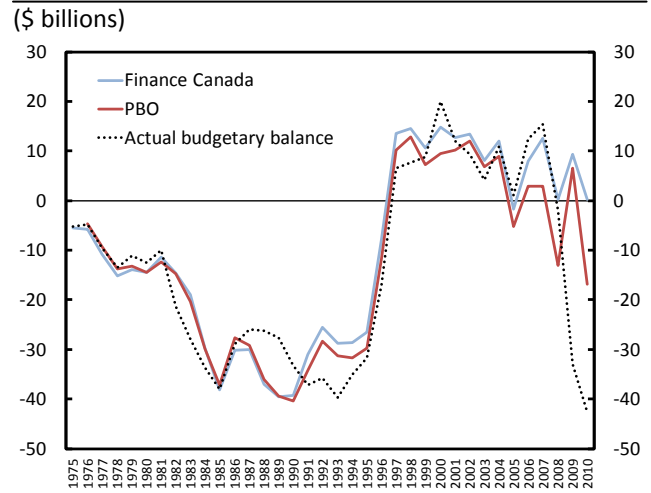


Source: Office of the PBO; Statistics Canada.
Note: National Accounts basis.

3 Comparing Structural Budget Balance Estimates

Finance Canada and PBO estimates of the Government of Canada's structural budget balance, on a National Accounts basis, track each other quite closely over the period 1976-2005 (Figure 3-1). Finance Canada's estimate of the structural budget balance is only about \$1 billion higher, on average, than PBO's estimate over the same period. However, since 2005 – the last year in which both Finance Canada and PBO estimated a structural deficit – Finance Canada's estimate of the Government of Canada's structural budget balance has been almost \$10 billion higher, on average, than PBO's estimate. Further, for 2010, Finance Canada's estimate is \$17 billion higher than PBO's estimate of the Government of Canada's structural budget balance.

Figure 3-1
Estimates of the Government of Canada's Structural Budget Balance



Source: Finance Canada; Office of the PBO; Statistics Canada.
Note: National Accounts basis.

Both Finance Canada and PBO estimates of the Government of Canada's structural budget balance are based on National Accounts revenue and expenditure data and appear to be based on a similar methodology that attempts to adjust for transitory fluctuations in commodity prices and EAP stimulus measures. Finance Canada and PBO structural budget balance estimates are strikingly similar over the period 1976-2005, which suggests that differences in: the underlying estimates (or assumptions) of tax and spending sensitivities; and/or, differences in estimates of potential (or trend) GDP and terms of trade, are likely to be relatively minor.⁷

Unfortunately, Finance Canada has not published or provided its estimates of potential GDP and terms of trade or its estimates of the tax and spending sensitivities underlying its structural budget balance estimates. As a result, it is not possible to determine definitively the extent to

⁷ The general approach to estimating a structural budget balance first involves estimating an economy's output or income gap (i.e., output or income relative to its potential). Next, the cyclical component of the budget balance is identified by assuming or estimating the sensitivity of revenues and spending to that gap. Given observed or 'actual' revenues and spending, the structural components of revenues and spending are then calculated residually.

which the underlying estimates and assumptions used by Finance Canada and PBO differ.

However, by assuming that the overall sensitivity of the budget balance to the economic cycle in Finance Canada's calculations is the same as PBO's sensitivity, it is possible to determine the extent to which Finance Canada and PBO could differ with respect to their estimates of the cyclical position of the economy (i.e., income relative to its potential) over the period 2006-2010. These differences would therefore 'reconcile' Finance Canada and PBO structural budget balance estimates over the same period.

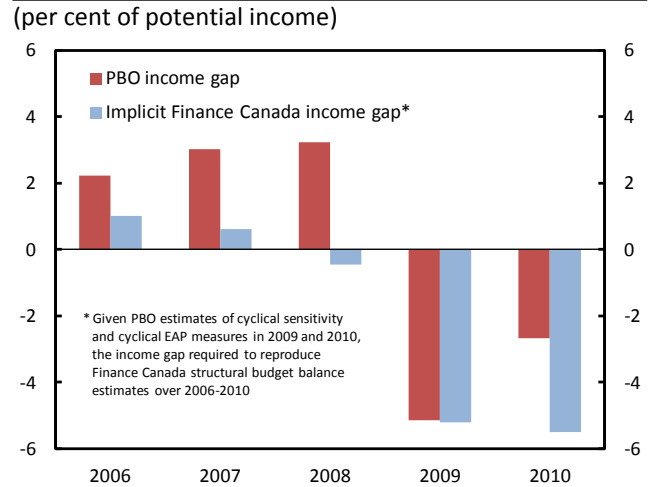
In terms of the overall sensitivity of the budget balance to the cycle, PBO results suggest that an income gap (i.e., actual minus potential income) of \$1 billion translates, on average, into a cyclical budget balance of approximately \$0.3 billion. Given this sensitivity and PBO estimates of cyclical EAP measures⁸ in 2009 and 2010, Finance Canada estimates of the Government of Canada's structural budget balance over 2006-2010 would imply that the economy was moderately above its potential income in 2006 and 2007 but then fell well below potential after 2008 (Figure 3-2).

With the exception of 2009, there appear to be significant differences between Finance Canada's and PBO's views regarding the cyclical position of the economy over 2006-2010. Prior to the recession in late 2008 and early 2009, PBO estimates suggest that the economy was operating well above its potential income (between 2.2 and 3.2 per cent) while Finance Canada estimates would appear to suggest that the economy was much closer to its potential (-0.5 to 1.0 per cent). Consequently, Finance Canada estimates would suggest that the budget surpluses recorded in 2006 and 2007 were largely structural whereas PBO estimates would indicate that they were largely cyclical in nature.

⁸ On a National Accounts basis, PBO estimates \$16.1 and \$13.2 billion in cyclical EAP spending measures, respectively, in 2009 and 2010.

Figure 3-2

Income Gap Estimates, 2006-2010



Source: Office of the PBO.

Note: The income gap is defined as the difference between gross domestic income (GDI) and potential GDI, expressed as a percentage of potential GDI.

In addition, PBO's income gap estimates indicate that the economy began to recover in 2010 as the level of actual income moved closer to its potential (-2.7 per cent); however, Finance Canada estimates would appear to suggest that the economy continued to deteriorate, falling further below its potential (-5.5 per cent).⁹ As a result, Finance Canada estimates would suggest that the \$42.6 billion budget deficit recorded in 2010 was entirely cyclical in nature whereas PBO estimates that the deficit contained significant structural and cyclical components (approximately 40 per cent structural and 60 per cent cyclical).

4 The Income Gap and Structural Budget Balance over the Medium Term

Based on its November 2011 *Economic and Fiscal Outlook*¹⁰ PBO projects the economy – relative to its potential income – to continue to recover in

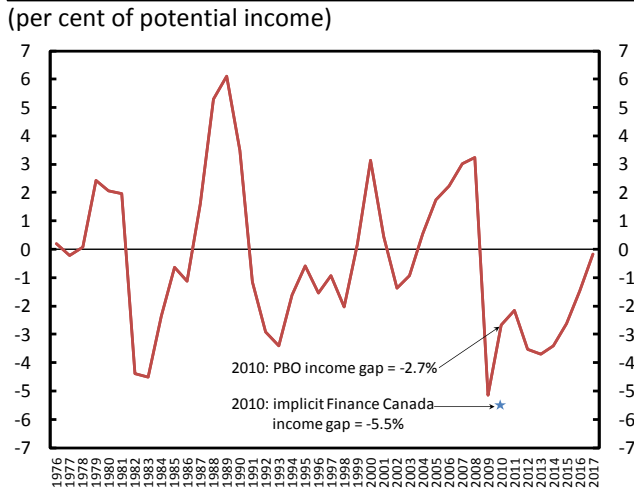
⁹ Finance Canada's implicit (PBO's) income gap would imply annual potential income growth of approximately 3.6 (4.6) per cent in 2007 and 2008 followed by growth of -1.3 (3.8) and 5.3 (3.6) per cent in 2009 and 2010, respectively.

¹⁰ Available at: http://www.parl.gc.ca/PBO-DPB/documents/EFO_November_2011_EN.pdf.

2011 but then deteriorate, falling to 3.7 per cent below potential income in 2013 (Figure 4-1). As the economic recovery resumes and firmly takes hold the income gap is projected to narrow, closing in 2017.¹¹

Figure 4-1

PBO Income Gap Estimates – Historical and Projected



Source: Office of the PBO.
 Note: The income gap is defined as the difference between gross domestic income (GDI) and potential GDI, expressed as a percentage of potential GDI.

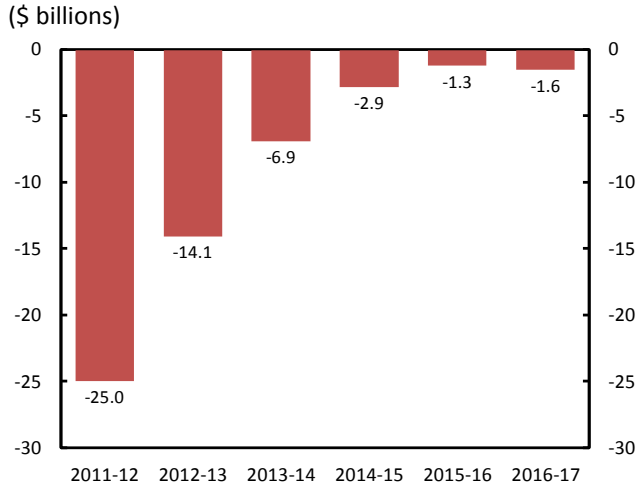
Based on its recent *Economic and Fiscal Outlook* PBO projects that the Government of Canada's structural deficit – on a Public Accounts basis – will decline from \$25.0 billion in 2011-12 to \$1.6 billion in 2016-17 (Figure 4-2). The decline in the structural deficit (relative to potential income) stems largely from PBO's assumed modest growth in direct program expenditure over the medium term. Although PBO estimates that the Government of Canada's structural deficit will essentially be eliminated by the end of the projection horizon, assessing whether a government's fiscal structure is sustainable requires looking beyond the medium term to take

¹¹ Based on PBO's November 2011 *Economic and Fiscal Outlook*, growth in nominal income (GDP) is projected to average 4.5 per cent annually over 2011-2017, while growth in potential income is projected to average 4.1 per cent annually.

into account the economic and fiscal implications of population ageing.¹²

Figure 4-2

PBO Projection of the Government of Canada's Structural Budget Balance



Source: Office of the PBO.
 Note: Public Accounts basis.

Finance Canada does not publish its projections of potential income or the Government of Canada's structural budget balance over the medium term.

5 Improving Fiscal Transparency

PBO believes that estimates and forecasts of structural budget balances provide useful information about a government's underlying financial position and can be used to help guide policy actions. Indeed, Farrington et al. (2008)¹³ indicate that publishing cyclically-adjusted, or structural, forecasts of the budget balance and key fiscal aggregates "helps to promote transparency in the operation of fiscal policy and enhance the quality of policy decisions."

¹² PBO's September 2011 *Fiscal Sustainability Report* (available at: http://www.parl.gc.ca/PBO-DPB/documents/FSR_2011.pdf) finds that the Government of Canada's fiscal structure is not sustainable over the long term. PBO estimated that restoring fiscal sustainability would require permanent policy actions of 1.2 per cent of gross domestic product (GDP).

¹³ Farrington, S. et al. 2008. "Public finances and the cycle" Treasury Economic Working Paper No. 5. Available at: http://www.hm-treasury.gov.uk/d/pbr08_publicfinances_444.pdf.

Finance Canada does publish its estimates of the Government of Canada's structural balance, on a National Accounts basis, but only for the historical period from 1975 onward – estimates over the medium-term planning horizon are not published.

- Finance Canada could improve fiscal transparency by publishing its National and Public Accounts estimates of the Government of Canada's structural balance both over history and over the medium-term planning horizon, as well as its methodology and assumptions used.

Estimates of potential GDP and income are key inputs into estimates of a government's structural balance since they are used to identify the cyclical revenue and expenditure components of the budget. PBO believes that differences in estimates of the economy's performance relative to its potential income over 2006-2010 are largely responsible for the discrepancy in Finance Canada and PBO estimates of the Government of Canada's structural budget balance over the same period.

- Finance Canada could improve fiscal transparency by publishing its estimates of potential GDP and income over history and over the medium-term planning horizon, as well as its methodology and assumptions used.