## Technical note on the structural budget balance estimate[1]

Fluctuations in the business cycle and external factors such as commodity prices can have a significant impact on government's fiscal position. When economic activity is buoyant or commodity prices are high, tax receipts will be cyclically strong. The opposite is true when economic growth slows or commodity prices fall.

The purpose of this note is to give a brief overview of the methodology used to derive the structural budget balance introduced in the 2007 Medium Term Budget Policy Statement.

The structural budget balance (or cyclically adjusted budget balance) is defined as the budget balance that would be observed if the cyclical component of revenue or expenditure were excluded. Thus, it is the budget balance that is consistent with trend or potential GDP growth in the economy and a normal composition of GDP.

The international literature suggests that the calculation of the cyclically adjusted budget balance takes the following factors into consideration:

**A) Output or income gap effect**

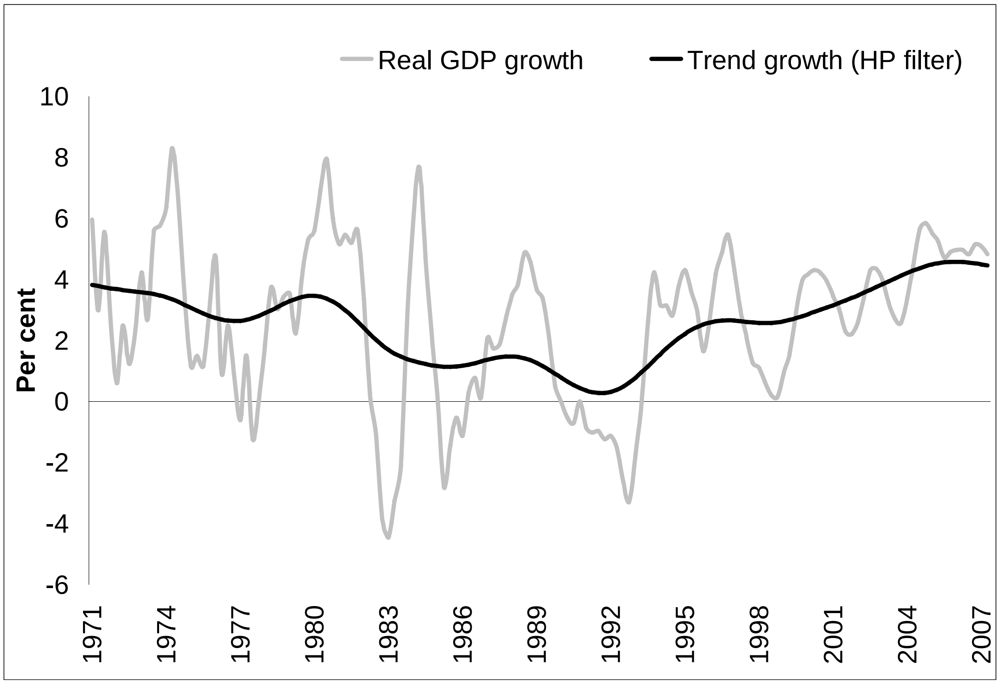
The output gap is the difference between actual output and the estimated long term trend output. For instance, in calendar year 2006, real GDP grew by 5 per cent. Using an HP filter[2], trend growth in calendar 2006 was estimated at 4.6 per cent. In 2006, the economy was operating at a level higher than the long term trend output, i.e. there was a positive output gap.

With actual economic activity higher than its sustainable long term trend, tax revenues will be higher than when the economy is operating at trend growth. Consequently, in calculating the structural budget balance, tax receipts need to be adjusted to reflect tax revenues in line with trend.

[1] This note draws extensively form the following papers: Braconier and Forsfält (2004), IMF(2006), Turner (2006).

[2] The Hodrick-Prescott Filter is a smoothing method that is widely used among macroeconomists to obtain a smooth estimate of the long-term trend component of a series (Eviews 2007).

Figure 1: Actual versus Trend growth



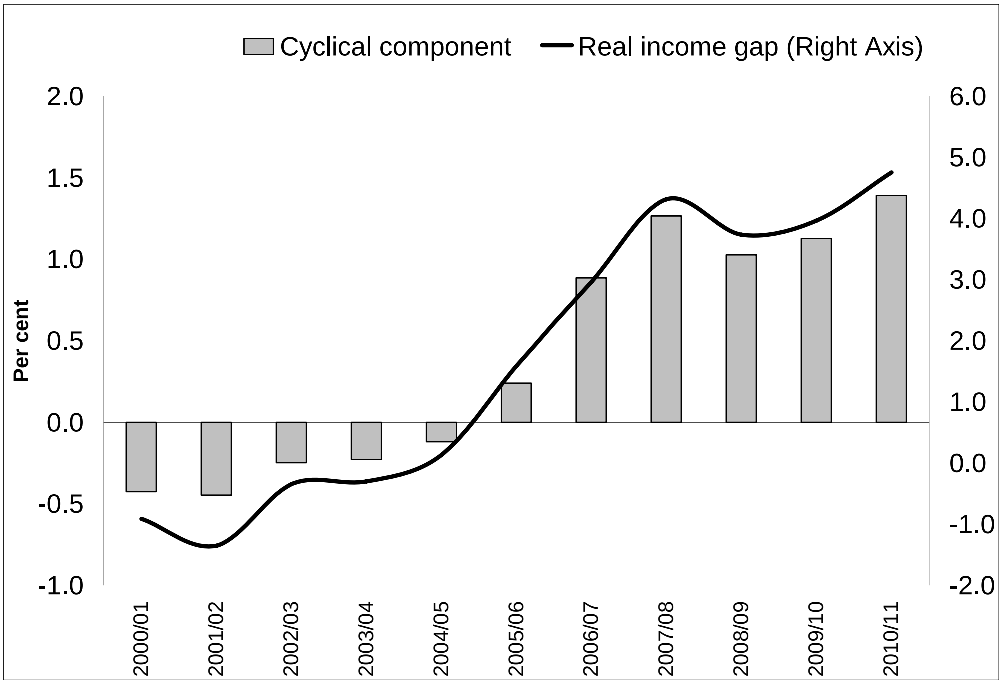

In the calculation of the structural budget balance, National Treasury assumes that trend growth will rise gradually over the forecast period to reach 5 per cent by 2010/11. Higher potential growth should follow from strong fixed investment and higher employment over the forecast period.

Additionally, countries where commodity production is a substantial share of output, may exhibit transitory components of the fiscal balance that are related to exceptional output price trends. [3] According to Turner (2006) "such developments are likely to lead to higher tax revenues, most immediately from the companies directly involved in extracting or producing the commodities, but also less directly as the consequent rise in the terms of trade increases real incomes more broadly".

To address this, a measure of the real income gap, or the output gap adjusted for terms of trade effects, is used. The equilibrium terms of trade is assumed to be equal to its long run historical average.

[3] See: Turner (2006).

Figure 2: Cyclical revenue component versus real income gap




**B) Employment gap effect**

In the international literature the employment gap effect refers to the difference between the actual unemployment rate and the estimated natural rate of unemployment. When unemployment is temporarily above or below the natural rate of unemployment, government expenditure on unemployment benefits will be affected. In South Africa there is limited national government expenditure related to cyclical employment developments in the labour market. This is not included in the structural budget balance estimate.

**C) Composition effect**

The composition effect refers to the deviation of principal tax bases from their long term proportion of GDP. When tax revenue as a share of GDP deviates from equilibrium levels, these so-called compositional effects need to be controlled for. Table 1 summarises the six major taxes and how National Treasury has controlled for the respective composition effects.

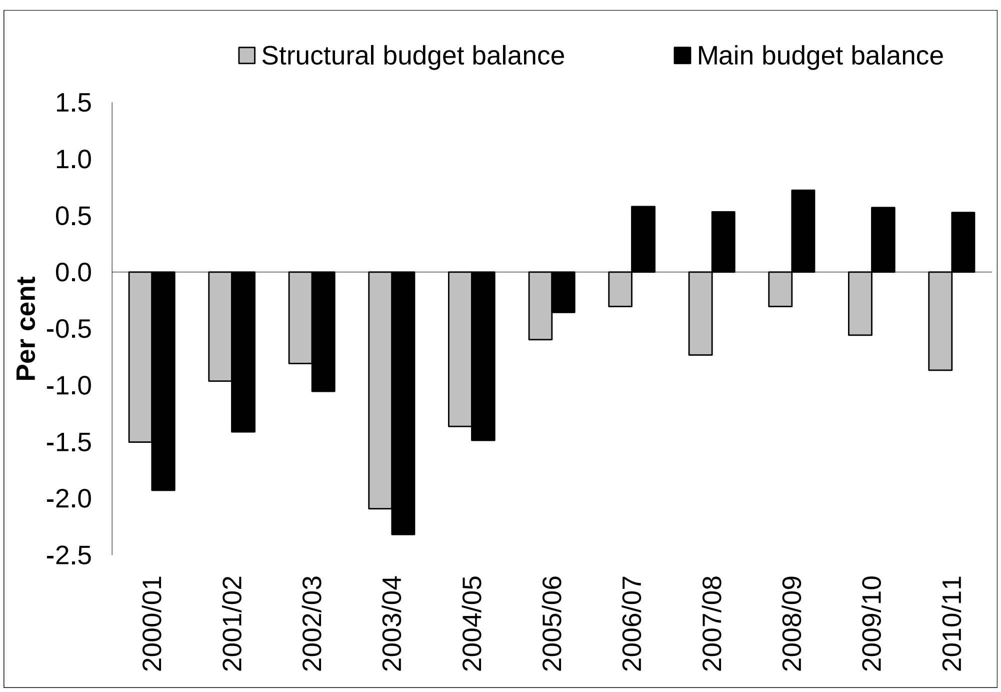
Table 1: Tax receipts and composition effects

| Relevant tax | Controlling for the composition effect |
|---|---|
| Personal income tax | Nominal wage bill as a share of nominal GDP |
| Corporate income tax | Nominal net operating surplus as a share of nominal GDP |
| Customs duties | Nominal imports as a share of nominal GDP |
| Excise duties | Nominal household consumption as a share of nominal GDP |
| Fuel Levy | Real GDE as a share of real GDP |
| VAT | Nominal household- and non-wage government consumption (weighted) as a share of Nominal GDP |

**Conclusion**

Taking the above factors into account, National Treasury estimates that the current main budget balance surplus of 0.53 per cent of GDP for 2007/08 would fall to a structural fiscal deficit of 0.73 per cent. In the 2007/08 fiscal year, cyclical revenue thus amounts to 1.26 per cent of GDP.

Figure 4: Actual versus Structural budget balance



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**References:**

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