A Short Note on Public Debt Sustainability in Ghana

Introduction

The HIPC Initiative has been very successful in Ghana. There is however the general recognition that bringing a single debt measure down to a critical threshold at a single point in time is no guarantee against future debt problems (IMF, 2001). As noted in an IMF publication (IMF 2000a), "debt relief under the HIPC Initiative provides a basis, but not a guarantee for long-term debt sustainability in HIPC countries". While the debt relief granted under the HIPC Initiative will substantially reduce the debt service due on existing debt, maintaining debt sustainability will also crucially depend on future macroeconomic policies, growth performance, and financial assistance from donors.

In addition to the above, it has become very clear that given the current economic performance in Ghana and given the fact that the current PRGF programme with the IMF is ending in 2006, there is every indication that the grounds are set for Ghana to resort to the international capital markets for capital to embark on the level of investment required to generate the accelerated growth needed to move the economy into middle income status. It has however, become imperative that a comprehensive framework for analysing public debt sustainability developed to prepare the grounds for exposing the economy to the dynamics of the international capital markets.

The purpose of this paper is basically to attempt to apply standard sustainability frameworks to the public debt data in Ghana to ascertain the path of public debt vis-à-vis fiscal policy as well as macroeconomic policies in general. In looking at the above we will employ two policy driven indicators namely primary balance gap and tax effort gap. Unlike other indicators, these indicators project the path of fiscal policy that will be consistent with the current debt stock, taking into consideration a given level of growth and interest rate path. This is what makes it policy driven as against just indicating whether the debt is sustainable or not without any policy prescription.

Sustainability Indicators

Different measures have been used in the literature but this short brief seeks to limit the scope to only two, which are policy driven. These are the *primary balance gap indicator* and the *tax gap indicator*.

Basically, the primary balance gap looks at the change in fiscal policies required to maintain the current debt ratio. This is based on estimating the permanent primary deficit necessary to stabilize the debt ratio. This permanent primary deficit is given by:

$$\bar{d} = (n_t - r_t)b_t \qquad (0.1)$$

where $b_t = \frac{B_t}{Y_t}$ is the ratio of debt to output ratio, n_t is the growth rate and r_t is the interest rate.

Following from the above and given the actual and projected primary balance ratio ($d_t = \frac{D_t}{Y_t}$) based on Ghana's Medium Term Expenditure Framework, a primary balance gap is estimated as follows:

$$\bar{d} - d_t = (n_t - r_t)b_t - d_t \quad (0.2)$$

A negative value for this indicator implies that the current primary balance (deficit) is unsustainably too large to stabilize the debt ratio, implying unsustainable fiscal policy.

In a similar effort, another indicator, which is the tax gap, is used. While the primary gap indicates the extent of reduction in the primary deficit or increase in primary surplus required for debt sustainability, the tax gap indicates the increase in tax ratio (tax effort) required for public debt sustainability given current levels of government spending.

To arrive at the tax gap we first estimate the permanent tax to output ratio necessary to stabilize the debt ratio which is given as:

$$\bar{t} = g_t - (n_t - r_t)b_t \quad (0.3)$$

where g_t is the ratio of government non-interest spending to output and t_t is tax to output ratio.

The tax gap is thus estimated as:

$$t_t - \bar{t} = t_t + (n_t - r_t)b_t - g_t \quad (0.4)$$

This is a measure of the difference between the permanent tax ratio and the current tax ratio. A negative indicator shows that current taxes are too low to stabilize the debt ratio given current spending policies.

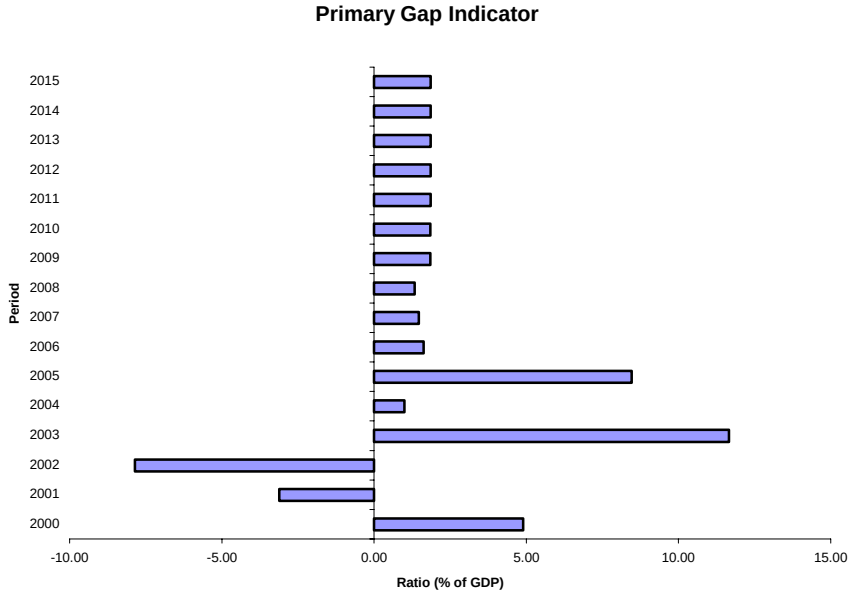
Application to Ghanaian Data (2000 – 2015)

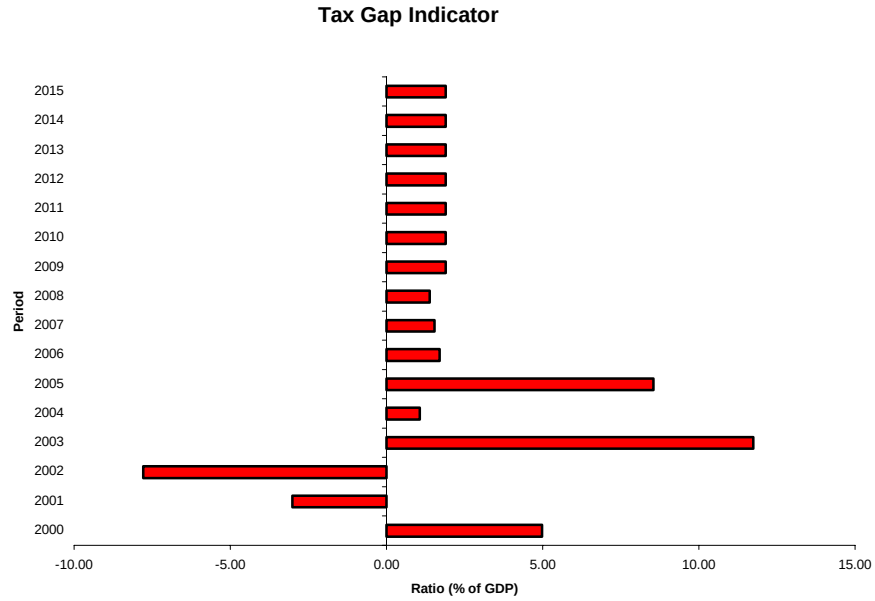
Underlying Assumptions

In applying these indicators to the Ghanaian data, we made the following assumptions:

- Debt ratio from 2006 to 2015 took into consideration the net debt flow as a result of new loans and the MDRI programme.
- The public debt figures are all gross figures as public sector assets are not netted out.
- The projected real GDP growth rates as well as the real interest rate were sourced from Ghana Fiscal Tables from the IMF.
- Interest rate was maintained at the 2006 current levels and the growth rate was maintained at 6% till 2007 and thereafter 8%. Inflation was pegged at 7.3% and 6% for 2006 and 2007 respectively and 5.7% thereafter.

Results





Summary

It is obvious from the above that given current public spending policies and tax policies as well as the MDRI initiative, Ghana's public debt from now till 2015 will be in the sustainable levels as both the primary gap and tax gap indicators showed positive tax efforts and primary surpluses that are consistent with the debt ratios generated after the debt relief.

Simulation Analysis

We further considered various scenarios for the debt sustainability analysis. The scenarios had the following debt levels and macroeconomic assumptions as its basis for the projections:

Scenario 1: The public debt figure was increased by $300m in 2007

Scenario 2: Assumes an additional $500m increase of public debt in 2007

Scenario 3: The public debt figure was increased by $1b in 2007

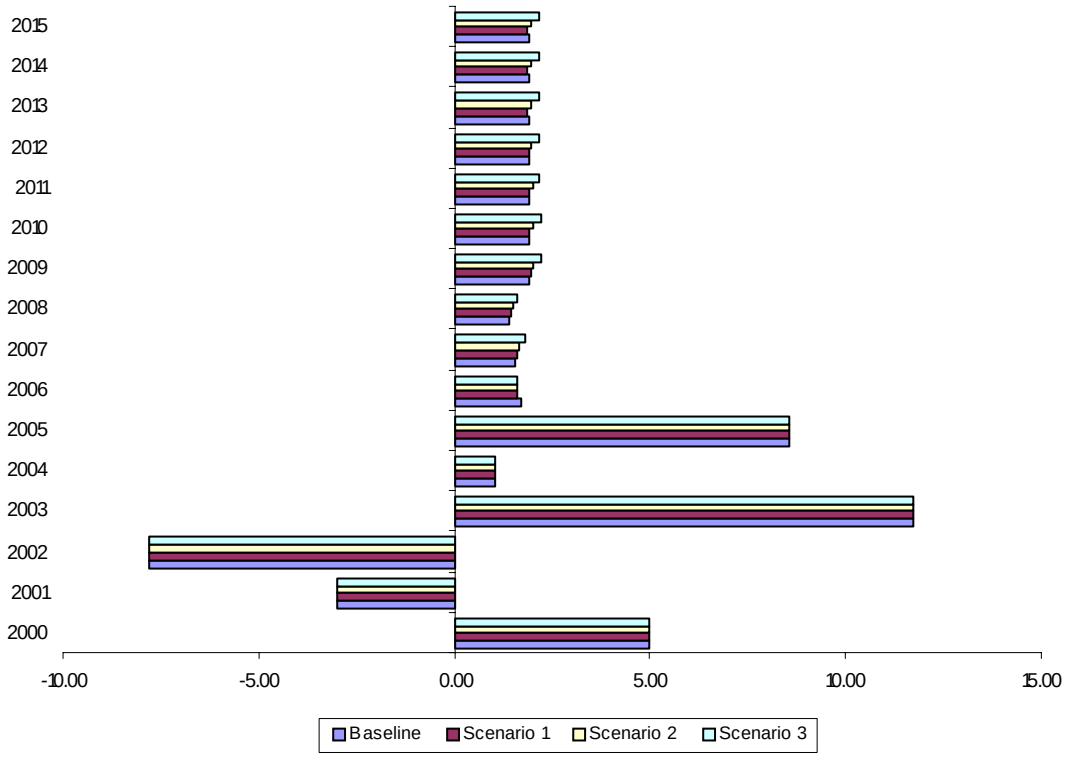
Scenario 4: We used current interest rate (9.48%) and inflation rate (9.9%) to calculate the real interest rate from 2006 to 2015. The real GDP growth rate remains the same as the baseline.

Scenario 5: Assumes a single digit inflation rate of 9% and 10 % interest rate for the period 2006-2015. The real GDP growth rate remains the same as the baseline.

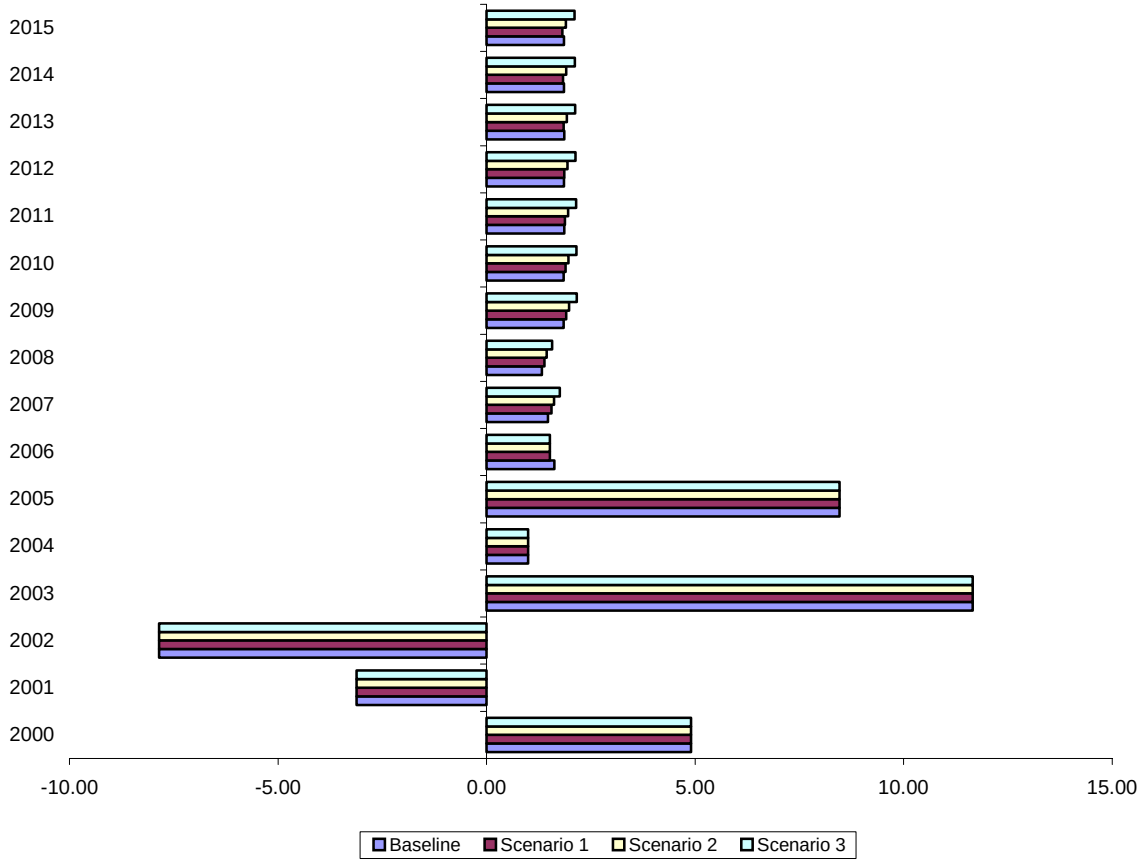
Scenario 6: Assumes inflation rate of 9%, the current prime rate (14.5%) and real GDP growth of 5 %.

The alternative paths arising out of the above scenarios are graphed below:

Scenario Analysis (1-3) - Tax Gap Indicator

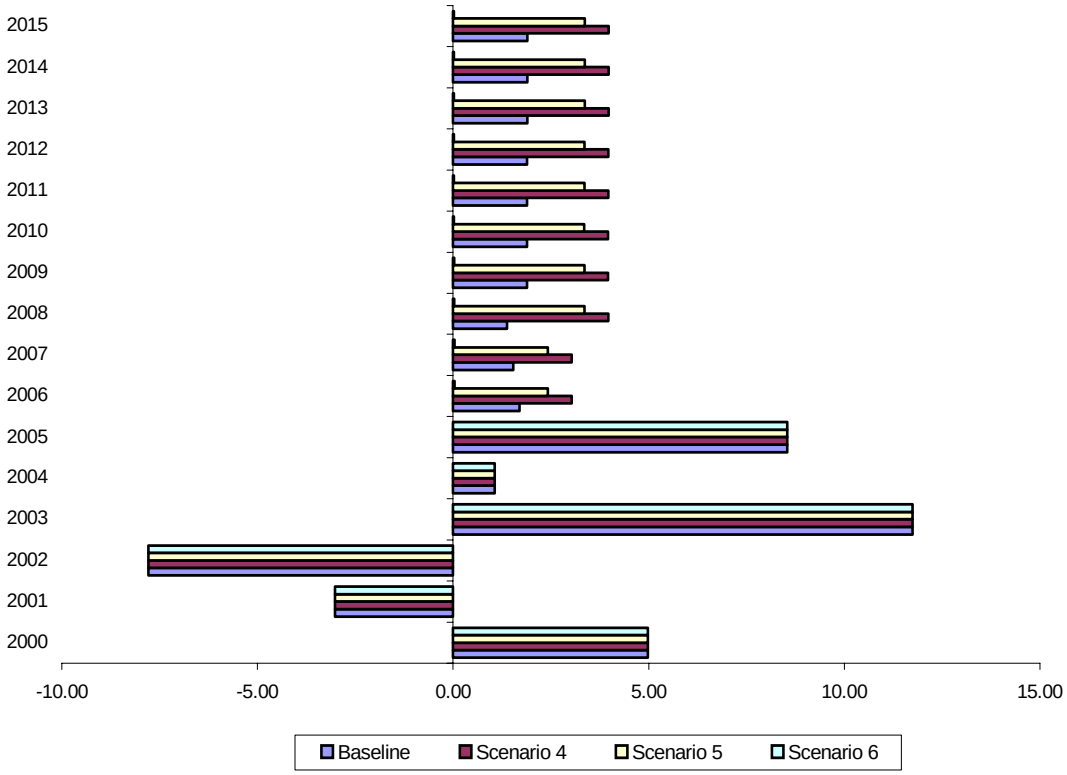


Scenario Analysis (1-3) - Primary Gap Indicator

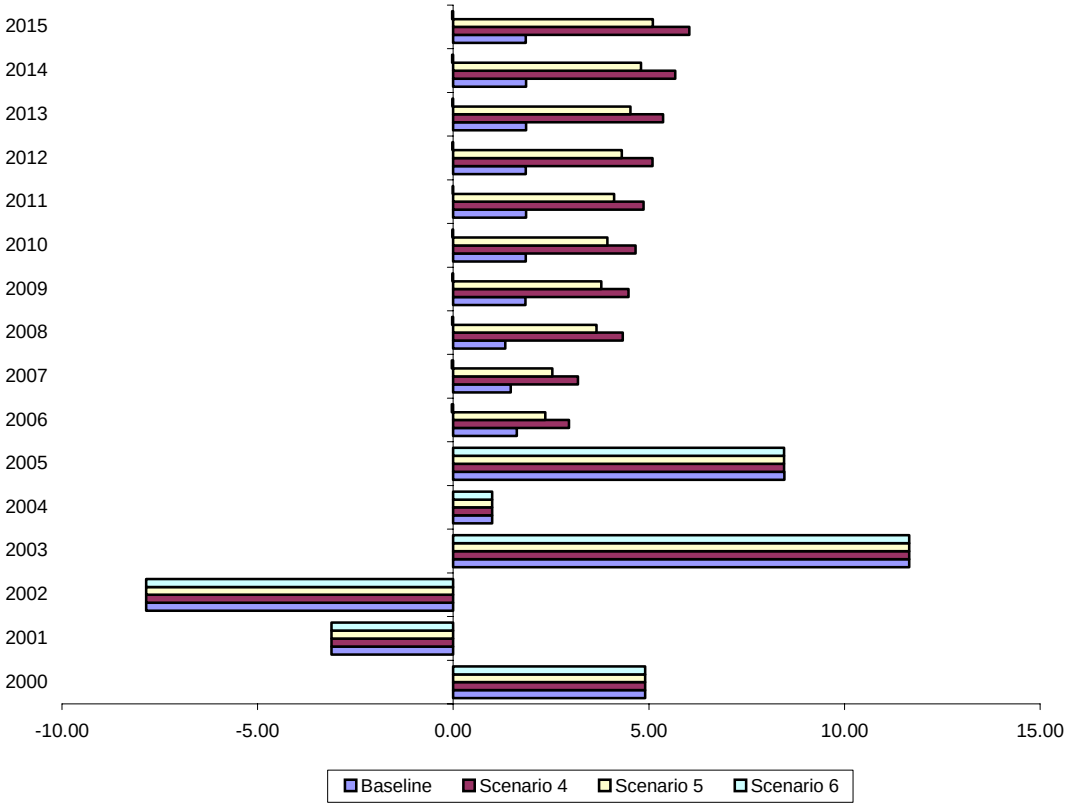


The first three scenarios looked at the impact of three different level of public debt on debt sustainability using the primary balance gap and the tax gap indicators. The above graphs representing the tax gap and primary balance indicators show that at $300m, $500m and $1b, increases in the level of the public debt do not have any significant impact on the level of debt sustainability. This is consistent with the inference from equations 0.2 and 0.4 that as far as the real growth rate is higher than the real interest rate, debt ratios will remain sustainable.

Scenario Analysis (4-6) - Tax Gap Indicator



Scenario Analysis (4-6) - Primary Gap Indicator



Scenarios 4, 5 and 6 looked at the tax effort and fiscal efforts required under different macroeconomic conditions. The graphical evidences from scenarios 4 & 5 indicted that, with much improved macro fundamental assumptions, both gaps increase significantly which suggest that both tax effort and fiscal effort required to sustain the debt ratios were better. Scenario 6 on the other hand assumed a worse case real GDP growth rate of 5 per cent and existing prime rate of 14.5 per cent from 2006 to 2015. Under these assumptions, the primary effort to sustain the debt ratio deteriorated while the tax effort remained on the zero line. This therefore emphasised the importance of the macroeconomic performance, mainly the real GDP growth rate and real interest rate, on the debt sustainability indicators.