Annex 3: Fiscal Sustainability Analysis in Oil-Rich Developing Countries

As a group, oil-rich developing countries are still paying for their response to the windfall from the oil shocks of 1973-74 and 1979-80. Instead of prospering, many have become highly indebted and have seen manufacturing and agriculture atrophy. Ironically, many of these countries suffer from slow growth and high levels of poverty. Fiscal policy bears much of the blame because oil revenues typically accrue to the government in the first instance. Thus, much of the needed correction also centers on fiscal policy. **On-going work in the PREM Anchor aims at developing appropriate tools to help governments manage their public finances better.**

The most recent oil price recovery and boom, which had its beginnings in 1999 and shows no signs of abating, at last gives oil-rich developing countries an opportunity to convert the “resource curse” into a boon for growth and poverty alleviation. Such countries by-and-large appear to have learnt the bitter lessons of the past and, in the context of the current oil boom are likely to be focusing on (Nigeria is a prime example):\(^1\)

a. achieving and maintaining a sustainable public finance and debt trajectory while managing volatility.
b. facilitating economic diversification by delinking current public expenditure from current oil revenues and improving the efficiency and composition of public spending.
c. adopting development objectives such as increasing pro-poor growth and achieving the Millennium Development Goals.

None of these objectives can be secured without good governance, which is an obvious priority in oil-rich countries. Good national income and public debt statistics are also needed to distinguish oil from non-oil GDP and track domestic debt, arrears and contingent liabilities in addition to external debt and other public sector financial assets (on which better data usually exist). Lastly, a fourth objective may be relevant today: that of building up a reserves cushion against possible adverse oil price shocks. This objective is linked to objectives a. and b. identified above, but is worth stating explicitly given today’s high oil price environment.

The traditional approach to fiscal sustainability asks whether current or planned primary fiscal balances (public revenues minus non-interest expenditure and) are compatible with stable debt-to-GDP ratios given interest rates, growth rates and real exchange rate developments. Given the special features of oil-rich countries, managing volatility during oil price booms makes it advisable to divert at least some of the current oil revenues to an Oil Stabilization Fund (OSF), which many countries are doing today. Hence, the analysis needs to incorporate an OSF and an OSF allocation rule. Fiscal policy is captured by restrictions on the size of the non-oil primary deficit (NOPD) of the public sector plus the rule for allocating current oil revenues between the OSF and the budget. Fiscal sustainability analysis would then examine the impact of the non-oil primary fiscal deficit and OSF allocation rules on net debt levels, including monies saved in the OSF under various scenarios for the oil price. A schematic of the proposed framework is shown in Figure 1.

\(^1\)Similar priorities apply to all developing countries. What is special is the dominance of oil and the transmission of its impact on the economy through the level, timing and composition of public expenditure. The good news is that these variables are under direct control of the government; the bad that politics and vested interests may impede an efficient and equitable fiscal policy.
**PREM Anchor tool for Fiscal Sustainability**

A fiscal sustainability (FS) tool has been developed in the Economic Policy and Debt Department of the PREM Anchor along the lines of Figure 1. The development of the tool has drawn upon the analysis in a PREM Anchor report on Nigeria prepared for PREM Africa Region and sent to the G7 in April 2005, which formed the analytical basis for Nigeria’s 2005 Paris Club Debt buy-back, which saved the country $18 billion.

The PREM Anchor FS tool is available for use by Bank client countries to explore the implications of various oil fund and non-oil deficit rules to assess sustainability of net debt positions. The model utilizes simulation methods to forecast the distribution and evolution of net public debt/assets explicitly accounting for various oil fund and fiscal rules and with the objective of managing volatility. It consolidates the government’s fiscal accounts with the OSF (like for example Chile’s Copper Stabilization Fund or Norway’s Oil Fund) and the central bank’s foreign-currency reserves. Moreover, it allows for explicit analysis of the effects of uncertainty not just through scenario analysis but also through full stochastic analysis allowing Value-at-Risk assessments. The model is being used by an increasing number of Bank country economists.

**Figure 1. Fiscal Sustainability Framework for Oil-Rich Countries**

The country’s oil revenue profile crucially influences the decision about how much to spend out of current oil income. In countries with limited proven oil reserves, the oil windfall is going to be short-lived. Saving more out of the current oil revenue boom would dampen volatility while also allowing future generations to share in the oil even if the oil reserves may have been exhausted before they come on stage. The best approach to achieving both goals is to limit spending out of oil income to levels that can be sustained indefinitely by accumulating savings/paying down debt in high revenue years and dissaving in low income years in line with the *Permanent Income* from oil.
Such a rule would be suitable for a country like Azerbaijan, which is expected to run out of oil around 2025 as shown in Figure 2. The approach would require limiting the non-oil primary deficit to the permanent income equivalent of the oil income, which has been estimated at approximately $5 billion in 2007 prices (the horizontal line in Figure 2). This would shift spending out towards the future, thereby reducing the real exchange rate pressure and stretching the spending boom.

Figure 2. An application of the PI approach to oil wealth in Azerbaijan.

For countries with large proven reserves, limiting budget transfers out of oil income to revenues calculated at a long term average (reference) price rather than the current high price has similar effects to the PI approach. Oil stabilization funds (OSFs) maybe set up to save oil revenues above the reference price. Such a rule has three advantages: simplicity and hence ease in implementation; imparting a measure of fiscal discipline with regard to the non-oil deficit; and breaking the link between government spending and current oil prices, thereby lowering the volatility of the real exchange rate and minimizing Dutch disease. Importantly, an OSF based on a reference oil price should ensure that the non-oil primary fiscal deficit does not exceed the oil revenues transferred to the budget at the reference price. Nigeria after 2003 and Russia have been successful in reducing expenditure volatility by using such a rule and by accumulating assets in an OSF.

However, the oil price fiscal rule by itself will not maintain the government’s net asset position and ensure that oil wealth is preserved for future generations. This will happen only if the economic rate of return on public spending exceeds the return that could be obtained by investing oil proceeds in a diversified international portfolio of assets, for example. In short, the composition and quality of public spending financed by oil reserves also matter.