



Occasional Analytical Note

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Debt Sustainability Analysis: Balance Sheet Approach vs Traditional approach

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The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Central Bank of Lesotho (CBL).

1. Introduction and Background

Governments provide a variety of social and economic services to their citizens. This is in addition to providing economic environment with conducive policies for private sector to thrive, while maintaining good governance through democratic dispensation. The services range from policy coordination, social safety nets, and infrastructure development, to mention but a few. These services are financed through different forms of taxes, fees and surcharges. However, the annual revenue collections, including grants from international partners are usually not sufficient to meet the socioeconomic obligations. As a consequence, governments operate budget deficits, which are financed through an assortment of means. This could be through drawdown of savings from the banking systems, or acquisition of debt.

Financing of fiscal deficits from dissaving may deplete international reserves, the consequences of which could be devaluation of currencies. This is particularly not desirable for a country that runs huge current account deficit. The other option may either crowd out private sector investment, or expose the fiscus to both interest and exchange rate risks. It has been observed that continuous increase in the government's financing needs usually leads to accumulation of public debt. This borrowing increases stock of outstanding debt through two main channels – interest payment and principal repayment, some of which may accrue during the same fiscal year it was contracted. Interest payments increases

budget deficit, which may manifest into what is termed 'the vicious circle of debt'.

This therefore, amplifies the need to frequently undertake the debt sustainability analysis (DSA). This is to determine the ability of government to service its debt at any point in time without the need to default, restructure or make any large policy adjustments (International Monetary Fund (IMF), 2004). Levy-Yeyati and Federico (2007), recognises that even though explicit liabilities are important, they typically constitute a small proportion of actual government liabilities. As measure of fiscal solvency, government liabilities can be inaccurate and likely misleading. Therefore, they need to be matched with the asset side of the government's balance sheet.

II. Objectives

In this regard, this article aims to scrutinise a balance sheet approach (assets and liabilities) to determine debt sustainability in contrast to the traditional DSA. This will highlight issues that distinguish the new approach from the traditional one with practical illustrations. The aim of the paper is to provide a clear complement to the traditional DSA, which suffers from significant shortfalls despite having numerous valuable applications. Thus the objectives of the paper are:

- To provide a tool for assessing debt sustainability using assets and liabilities to derive the probability of default at a given level of debt profile.
- To compare and contrast the traditional

DSA which is often used as a quick indicator for debt vulnerabilities.

This will particularly be useful as Government of Lesotho plans to fully adopt cash management.

III. Appraisal of the two Approaches to DSA

a. The traditional DSA

According to the IMF (2008), traditional DSA focuses on projecting the fiscal adjustment that keeps the debt ratios stable or declining over time. This may be misleading for assessing debt sustainability holistically as it works with aggregate figures. For instance, a high debt to GDP ratio does not explain whether debt dynamics are stable or not. This is the information that can be predicted with prior knowledge of the debt structure and economic class a country belongs to. In addition, countries may increase debt ratios by running consecutive large budget deficits for consumption smoothing or increasing capital spending to boost future growth. This may not necessarily translate into unsustainable debt positions. Likewise, the approach does not really consider whether the debt stabilises at the level which may be excessively high (unsustainable) or adequately low (sustainable), because its main focus is debt stabilisation.

In addition, Burnside (2004) noted that the stabilisation of debt ratios is extremely aggregated and does not consider shifts in risk appetite. This has been supported by literature, which found a poor correlation between debt to GDP and market based measures of risk (IMF, 2008). Furthermore,

Burnside (2004) observed that the traditional DSA does not consider the likelihood of default. He argued that it focuses on the size of the future primary balance in order to ensure sustainability and therefore avoid default, instead of evaluating the likelihood of a default. He further complained that it does not provide guidance on how various shocks may influence the ability of government to service its debt. It is, likewise, quiet regarding the government's policy adjustment to remain solvent. And finally, it is also silent about possible borrowing limits of the government that could arise from macroeconomic instability.

b. Balance Sheet Approach

The balance sheet approach presents the modern risk-based framework that incorporates the notion of distress (default) into the analysis of public debt sustainability. Distress in this context is defined as the risk that the sovereign borrower does not have adequate resources to service outstanding debt obligations on the set debt schedule, owing to assets falling beneath the guaranteed payment on liabilities. This may prompt the government to seek debt restructuring which will reduce the net present value of the debt. As a result, the new framework specifically takes account of the unpredictable nature of sovereign assets and liabilities, to provide for a risk adjusted debt analysis (IMF, 2008)

Methodology for the Balance Sheet Approach

Below are the methodologies used by other literatures.

Debt thresholds in IMF/WB DSA for LICs				
Debt-burden indicators for external public debt	Assessment of institutional strength and quality of policies			
	Weak	Medium	Strong	Debt as at 31st March
1. PV of Debt/GDP	30	40	50	36.7
2. PV of Debt/Exports	140	180	240	387.7
3. Debt Service/Exports	10	15	21	6.7
4. Debt service/Revenue	14	18	23	6.0
PV of Total Debt/GDP	35	55	70	47.9
Solvency Conditions for Traditional DSA requires: 1. Debt to GDP not to exceed given thresholds 2. No Ponzi scheme i.e debt should not be rolled over 3. Existing debt and interest to be covered by future resources				

Source: IMF Staff Guidance Note on Fund-Bank Debt Sustainability Framework for LICs (2018)

The data above shows that total public debt in Lesotho seem to be sustainable as the calculated ratio is lower than the indicative threshold of 55%. Solvency ratio debt/GDP also shows the sustainability of debt as it is below the 40% threshold. However, debt/exports has exceeded the threshold, indicating clearly that the earnings from exports cannot meet debt obligations. Finally, the liquidity ratios (debt service/exports and debt service/revenue) are also sustainable as they fall below their respective indicative threshold.

Although all but one indicator (debt/exports) suggests sustainability, it can be argued

that Lesotho has a weak fiscal stance which is a cause of concern. The weak fiscal policy can be witnessed by unstable revenues and excessive recurrent expenditures. And with the large portion of external debt to total debt volatility in exchange rate is also a culprit which undermines debt sustainability. The weak policy will in the long run make debt to be highly vulnerable to external shocks, which may eventually result in default, hence the need to incorporate assets and liabilities to determine the likelihood of default.

b. Balance Sheet Approach

Assets	Liabilities
PV of fiscal revenues Foreign exchange reserves	PV of fiscal expenditures Market value of net public debt <ul style="list-style-type: none"> • External debt • Domestic debt Base money Contingent Liabilities
<p>Balance sheet approach requires minimisation of balance sheet risk, imposing focus on:</p> <ol style="list-style-type: none"> 1. Interest rate structure (assets and liabilities should have similar interest rate characteristics). 2. Exchange rate exposure (foreign currency assets should follow foreign currency debt). 3. Maturity structure (assets and liabilities of the same maturity should be matched together). <p>Debt is considered sustainable if the asset value is higher than the predefined distress threshold at any point in time.</p>	

Source: Currie and Antonio (2002)

While both the traditional DSA and the balance sheet approach are based on realistic macroeconomic projections, the balance sheet approach further assists with recognising and measuring various fragilities such as liquidity, default and risk, allowing for deeper analysis.

V. Conclusion

The paper proposed the new risk based framework for analysing public debt sustainability, which introduced the concept of sovereign balance sheet and the effects of uncertainty. Bringing the notion of uncertainty into the picture strengthens the ability of the analysis. This approach is viewed as better than the popular debt to GDP indicator, since it accommodates different forms of government assets and liabilities. At this point, the literature is not adequately advanced to reason that there is a good approach to

assessing the probability of default given the defined budget constraint. However, the paper recommends the Contingent Claims Approach as it incorporates the default probability.

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