

**The Meaning of External Debt Sustainability
Indicators in Mozambique in a Context of
High Predominance of Mega-projects**

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The Meaning of External Debt Sustainability Indicators in Mozambique in a Context of High Predominance of Mega-projects

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List of Acronyms

CIRR - Commercial Interest Reference Rate

CPIA – Country Policy and Institutional Assessment

EPA – Economic Partnership Agreement

EU – European Union

HIPC – Highly Indebted Poor Countries

IDA – International Development Agency from the World Bank

IMF – International Monetary Fund

LIC – Low Income Countries

LIC DSF – Low Income Countries Debt Sustainability Framework

LIC DSA – Low Income Countries Debt Sustainability Assessment (refers to the DSF applied to specific countries).

MDG – Millennium Development Goals

MDRI – Multilateral Debt Relief Initiative

NPV – Net Present value

PPG – Public and Publicly Guarantee (debt)

SADC – Southern Africa Development Community

SADC-EPA – Refers to the list of countries under the SADC configuration negotiating the EPA.

SAP – Structural Adjustment Programs

UN – United Nations

WB – World Bank

Abstract

This article critically analyzes the adequacy of using the traditional external debt sustainability indicators in the context of Mozambique. It argues that applied to the Mozambican economy, which shows high levels of concentration of production and trade on a few megaprojects, those debt indicators are not adequate measures of neither liquidity nor solvency and cannot capture the implications of the debt levels for the development of the economy. The shortcomings of the methodologies used to calculate sustainability threshold values of those indicators further reduce the reliability of Mozambican debt sustainability analysis based on those indicators.

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1. Introduction

Financing national development requires resources often not available in sufficient amounts and in favorable conditions in developing countries, making the need to borrow externally indispensable. Borrowing implies that, at a certain point, these resources have to be repaid and, therefore, the country needs to generate the necessary surplus resources to service its debt.

Despite benefitting from several debt relief initiatives Mozambique has systematically faced difficulties to comply with its external debt obligations. Only recently, mostly because of the HIPC and the MDR debt relief initiatives, Mozambique is being assessed as facing a sustainable debt position and with a long term low risk of suffering from debt distress problems.

Obviously, measuring debt sustainability requires a definition and the selection of indicators to measure it. The question that this paper addresses is how well the indicators used to measure external debt sustainability are adequate for the Mozambican context? In order to respond to this question the paper critically analyzes the definition of external debt sustainability, the indicators used to measure it and the methodology used to find the sustainability threshold values. The article focus this analysis on the Low Income Countries Debt Sustainability Framework (LIC DSF) developed by the IDA-IMF, as it is the most important approach used to measure external debt sustainability in Mozambique (perhaps the only approach) and also widely used across low income countries.

The paper argues that the currently used debt sustainability indicators (debt to exports, to public revenues and to GDP) are inadequate measures of Mozambique's external debt sustainability. This is so because in a context of high concentration of production and trade on few megaprojects

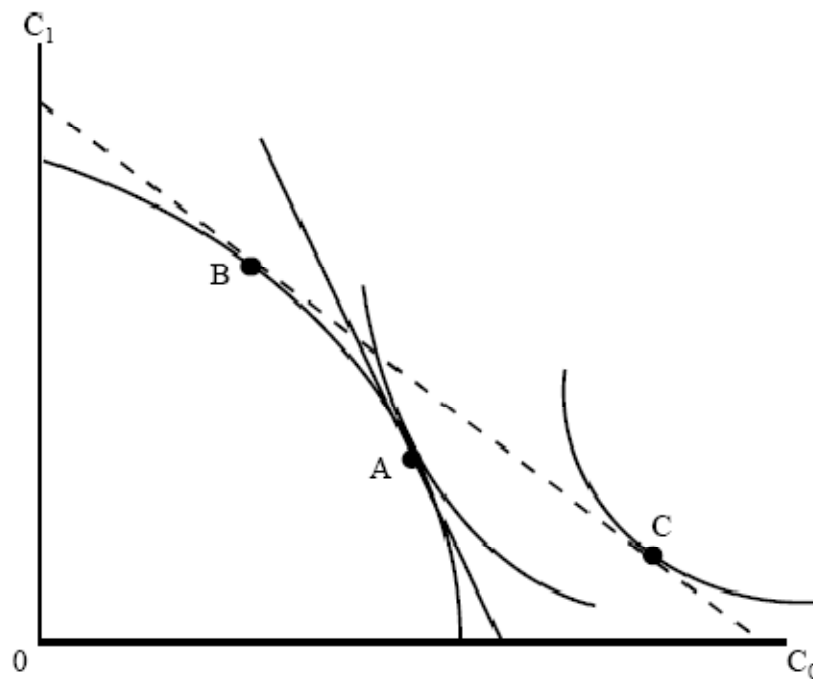
with very few and weak linkages with the domestic economy, they become poor measures of liquidity, solvency and of the burden of debt to development, which are the most important aspects that debt sustainability analysis should assess. In addition, the methodology used to find these indicators threshold values of sustainability suffers from a series of shortcomings that further reduce the reliability of the debt sustainability assessment based on these indicators and on their respective threshold values.

The dissertation is organized in four main chapters. After this introduction the next chapter presents a theoretical discussion of debt sustainability models. The third chapter presents a critical discussion of the debt indicator approach, which is the main approach used to assess debt sustainability in Mozambique, focusing on the adequacy of the ratios of sustainability to the Mozambican context and on the methodology used to empirically assesses their threshold values. The fourth chapter concludes.

2. Theoretical Approaches to Debt Sustainability

The benefits of external borrowing can be illustrated by taking the framework of the intertemporal investment-consumption model adapted to an intertemporal borrowing/lending model. The latter shows that borrowing allows the possibility of increasing a country's present and future investment and consumption fostering future growth. Additionally, external borrowing can help the country shielding from consumption adverse effects caused by income fluctuations.

Figure 1: The Intertemporal Borrowing/Lending Model



Source: Nissanke and Ferrarini (2001)

The intertemporal borrowing/lending is explained by Nissanke and Ferrarini (2001:2-3) using the diagram presented in figure 1. The model is represented in a two period budget constraint with the given levels of income, y_0 and y_1 , and a two-period utility function $U(C_0, C_1)$. An intertemporal production possibility frontier represents a trade-off between outputs in the two periods. The point

A represents autarky position, where a country has no access to international capital markets and faces the domestic interest rate r , which exceeds the world interest rate, r^* . The slope of the budget line at point A is $-(1+r)$, whereas that of the budget line at points B and C is $-(1+r^*)$. With opening up to international borrowing, two effects emerge: i) the country can divert resources to more future production at B , as it responds to the lower interest rate, r^* ; and ii) the country enjoys higher current consumption at C , as the higher utility indifference curve through point C than the one through point A indicates. Thus, external borrowing allows a country to undertake the extra investment (shown by the horizontal distance between points A and B) as well as to enjoy the extra first-period of consumption (shown by the horizontal distance between points A and C). The sum of the two horizontal distances (the distance between B and C) is the first-period current account deficit that reflects its resource gap. At the same time, whilst a move from A to C reflects trade gains due to a smoothing of the time path of consumption, further trade gains are realized by the change in the economy's production point from A to B .

However, in order to be able to respond to the commitments arising from the acquired debt, borrowing countries have to fulfill some requirements. These conditions may vary according to the debt sustainability approach that one takes. The first distinction can be whether we take the borrowers' or the lenders' approach. The borrower's approach focuses on the borrower country behavior and on its willingness¹ and ability to service its debt obligations. The lender approach focus on the lenders' liquidity and investment alternatives available in international markets. In spite of the fact that, as recognized by Belloc and Vertova (2005) and Arnone et. Al (2005), a comprehensive approach to debt sustainability should consider both the borrowers' and the lenders' approaches, this dissertation will only focus on the former. The reason for this is the fact

¹ In fact, for the sake of simplicity, most of the analyses take willingness as given and focus on the ability to repay.

that the lender's approach addresses commercial borrowing and, as such, it has not much relevance for the case of low income countries which, according to IMF (2004:7), external debt is mainly contracted from official lenders such as governments and multilateral agencies.

The borrower approach literature presents two main perspectives: the debt capacity perspective and the development perspective.

2.1 The debt capacity perspective (or financial sustainability)

The debt capacity perspective (also called financial sustainability) has its roots in the "Gap literature"² and can be divided into two groups: The approach of the *optimizing frameworks* and the *non-optimizing* models (Hjertholm, 2001).

According to Hjertholm (2001:4) the optimizing framework asks how much money a country should borrow, given the terms and conditions attached to the money available, i.e. what is the optimal level of debt? It leads to the suggestion that the optimal level of debt is that at which the marginal benefit and the marginal cost of foreign borrowing are equalized.

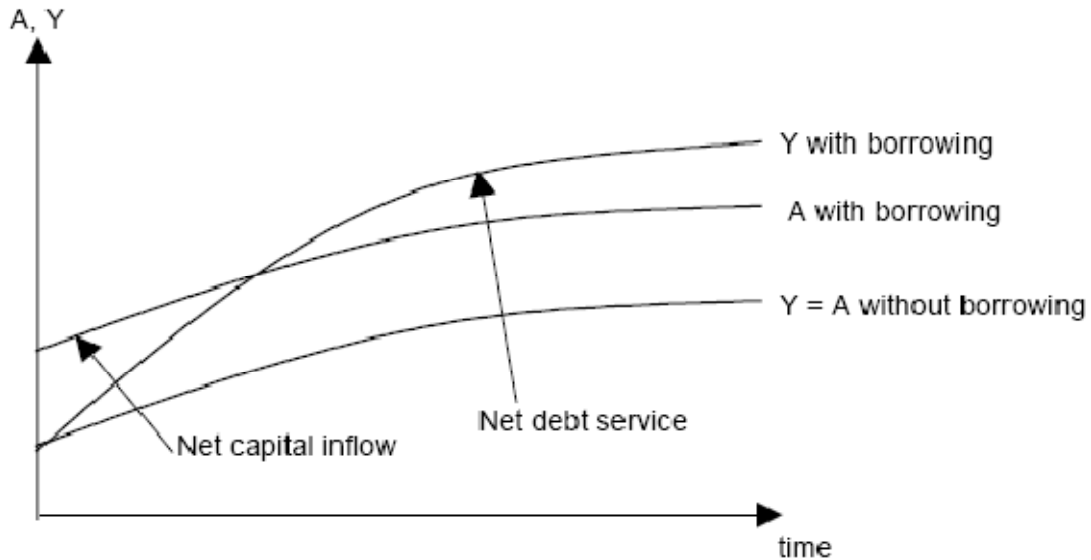
The *non-optimizing* models examine the sustainability of particular debt situations and policies in light of the expected future growth path of the economy. The non optimizing models can be divided into two groups: the *growth-cum models* and the *debt dynamics* models (idem).

The growth-cum-debt model and its derivative, the debt cycle model, can be seen as an extension of the intertemporal borrowing/lending model to a multiple period (Nissanke and Ferrarini, 2001:6). In this model, by filling the income-savings gap in the first period (the difference between

² Gap literature refers to the works analyzing the impact of foreign resources flows into the economy to fill the savings and foreign exchange gap pioneered by the work of Chenery and Strout (1966) and also the fiscal gap introduced by the work of Bacha (1990).

absorption and income), debt speeds up income growth so that the country income may exceed the absorption in the second period allowing the country to use the surplus resources to service its debt which will eventually decline.

Figure 2: The Growth-Cum-Debt Model



Source: Nissanke and Ferrarini (2001).

The growth-cum model has been mainly focused on foreign borrowing for investment purposes as it is evident from the conditions of sustainability obtained, which can be found in Nissanke and Ferrarini (2001:7):

- (1) Additions to external debt are used for growth-enhancing productive investment;
- (2) The marginal domestic savings rate, s_d , should exceed the investment ratio required by the target growth rate, I^* , i.e. s_d greater than I^* , so that debt will eventually begin to decline;
- (3) The marginal product of capital, fk , should exceed the cost of borrowing, i.e. $fk > r^*$; and
- (4) The growth rate targeted by this strategy, g^* , exceeds a stable world interest rate, r^* , i.e. $g^* > r^*$.

As the focus of the growth-cum model is on the costs and benefits of borrowing in the process of economic growth, the main conclusion, expressed in condition (4), is that a country will maintain its capacity to service debt provided that additions to its debt over time contribute (sufficiently) to growth. The condition states that, to maintain debt service capacity over time (i.e. to remain solvent), the growth rate of output should equal or exceed the cost of borrowing, measured by the rate of interest (Hjertholm, P. 2001:4).

As this condition is underpinned by the assumption that a non-increasing debt-to-GDP ratio guarantees solvency, mathematically, the condition can be obtained by trying to find the level of primary surplus that generates a constant debt-to-GDP ratio (Arnone et Al, 2005:8):

$$SURP_t = (r_t - g_t / 1 + g_t) b \quad (1)$$

Where SURP is the primary deficit/surplus, r is the real interest rate and g is the rate of growth of GDP. From equation (1) it emerges that as long as the economy grows at a rate higher than the interest rate, it is possible to run a sustainable primary deficit.

One of the main limitations of the growth-cum model is that it focuses solely on the savings-investment gap neglecting the foreign exchange gap which is particularly relevant for external debt repayment (Nissanke and Ferrarini, 2001:8; Hjertholm, 2001:5)

By contrast, the debt dynamics approach directly addresses the issue of a borrowing country's external solvency taking into account the country's external performance but neglecting the domestic savings-investment gap (Nissanke and Ferrarini, 2001:8). According to this view, since debts have to be serviced with foreign exchange, the value of exports gives a more accurate impression of income than for example GDP, as it relates more directly to debt servicing ability.

The condition for sustainability that emerges from this is that the rate of growth of exports must exceed the cost of borrowing, i.e., the interest rate (r) (Hjertholm, 2001:5).

Nissanke and Ferrarini (2001:9) show that the above condition can be obtained by expressing the ratio of exports as:

$$\dot{z} = (i - x)z + g$$

Where $z = D/X$ (debt/export ratio), g = Resource Gap/Export ratio and x = Growth rate of exports.

Then, if z is to be kept unchanged, i.e. $\dot{z} = 0$, we have an equation for a sustainable resource gap as:

$$g = (x - i) z$$

Which is positive for $x > i$. A positive value of g means that a country remains in a net borrowing position.

Another way to define solvency in the debt capacity models uses the concept of present value. According to Eaton (1993), Agenor and Montiel (1996) and Gunning and Mash (1998) the solvency condition requires that debt in any period cannot exceed the present discounted value of the borrowings country's stock of wealth or future income stream. In other words, even if the country does not keep the debt level constant or decreasing at all times, debt is still considered sustainable if in a certain time horizon the government is expected to generate enough resources to repay the present value of debt. This condition of sustainability is assessed by discounting the expected future government revenues to the present and comparing to its current debt stock. A greater (or equal) present value of future revenues than the current debt stock implies that the country is in a sustainable position.

Besides the fact of considering the domestic savings and foreign exchange gap separately, the debt capacity approach suffers from a number of other conceptual shortcomings. First, as noted by Goldstein (1993:14) it does not tell which level of debt is “safe” as, clearly, stabilizing the government debt ratio at 30 percent of GDP does not produce the same level of vulnerability as stabilizing it at 90 percent of GDP. Second, Hjertholm (2001:6) alerts that the practical use of this approach becomes difficult as it depends on determining the expected “path of the economy” and contrary to the implicit premises of the growth-cum-debt and debt dynamics frameworks, the time paths of the main factors involved (i.e. the growth rate of output, exports and imports as well the rate of interest) are inherently difficult to predict relying on assumptions that make the assessment highly subjective. Also, LICs exports and interest rate growth path are certainly not time-invariant as assumed by this approach. Moreover, as shown by Gunter (2003:8) the debt-to-exports ratio is an inappropriate proxy to measure debt sustainability in many import dependent low income countries.³ As pointed out by Hjertholm (2001) this fact has been recognized before by Kamel (1988) and Hjertholm (1991) which argue that not explicitly considering developments in the level of imports undermines the applicability of the debt dynamics model when examining debt sustainability. Last but not least, the debt capacity approach focus only on solvency where revenues are assumed to prioritize debt servicing and neglecting both liquidity constraints and the impact of large external levels of debt on developmental goals.

³ As the debt-to-exports ratio is central in the LIC DSF this point will be further discussed in the next chapter.

2.2 The Development Perspective (Economic sustainability)

The development perspective is based on the analysis of the impact of debt burden on growth through 2 main channels: i) Cash flow effects analyzed by the so called fiscal space models) and ii) disincentive effects analyzed by the debt overhang theory.

The cash flow effect refers to cuts in public investments and imports necessary for growth-enhancing public investments due to the large amounts of resources diverted to debt servicing. Also, as public investments are complementary to private investment its reduction will crowd out private investment (Arnone et Al, 2005)

Perhaps more important is the debt overhang hypothesis developed by Krugman (1988) and Sachs (1989). They argue that there is an enormous deadweight loss resulting from the way that the current debt overhang discourages investment and economic reforms in the debtor countries even beyond its direct budgetary burden. This happens because of five main reasons:

- Restrictive economic reforms become difficult to implement as the citizens as believe that this will only serve to improve the capability of servicing the debt and not making them better off.
- Private investment disincentive through the *Cash Flow* effects.
- It becomes increasingly difficult for the debtor countries to access new funds for investment as creditors perceive the higher risk of lending to those countries.
- Investments disincentives due to economy instability as, because of the lost of international creditworthiness, the government will put more pressure and rationing on domestic resources pushing up domestic interest rates, inflation and increasing credit

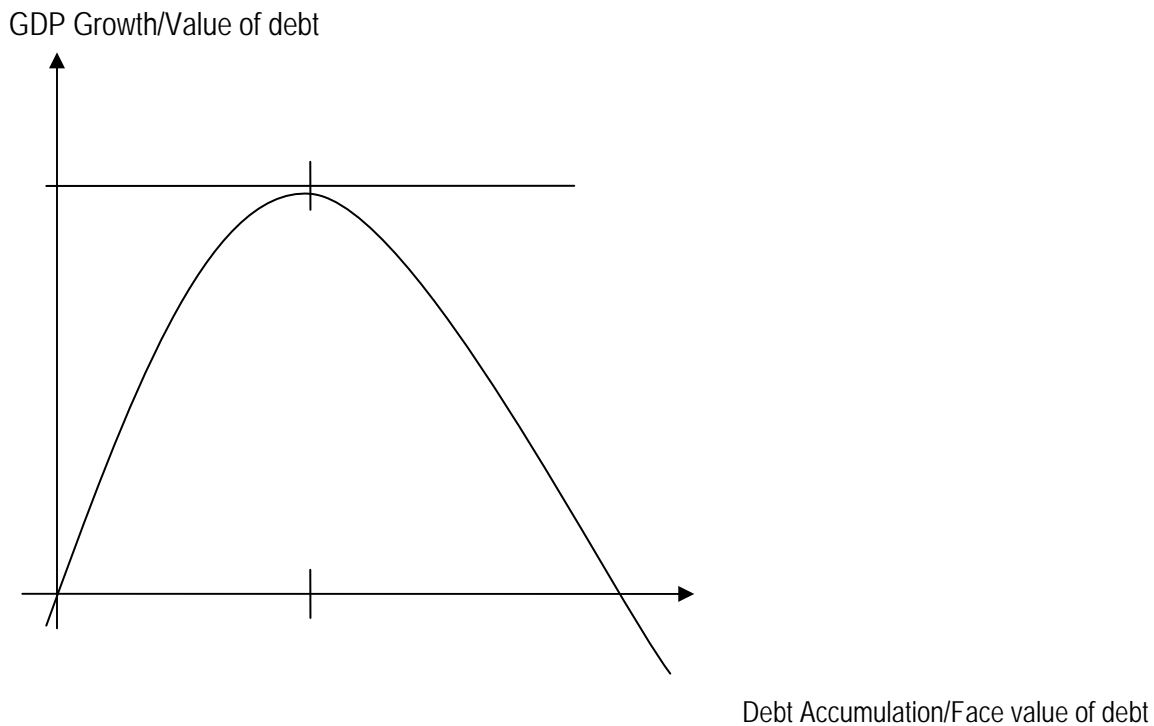
rationing. Uncertainty regarding debt payments and aid flows may also negatively impact investment and growth.

- It encourages capital flight, in order to avoid taxation, as the private sector understands that the public sector is starved for funds.

Krugman (1988) summarizes the channels through which debt relief is good for debtors and creditors postulating the existence of a “debt Laffer curve”. In the debtors’ perspective the Laffer curve shows that once debt reaches its overhang point (point A in the figure) more debt will act like a distortionary tax reducing the debtors’ economic growth and consequently its capacity of repayment making it go more and more into arrears. It is clear from this analysis that point A in the graph represents the switching point where to the left countries are in a sustainable debt position and to the right debt becomes unsustainable.⁴

⁴ In the creditors perspective one should consider the face value of debt (the value of debt contracted) in the horizontal axis and the value of debt (the expected amount that will be actually repaid) in the vertical axis. The Laffer curve shows that after a critical threshold (point A) as the face value of debt increase the value of debt declines, because external debt acts like a tax on the domestic economy. Beyond the optimal tax rate, however, the *debt tax* becomes distortionary and reduces expected revenue.

Figure 3: The Debt Laffer Curve



In spite of the acceptance of the principles of debt overhang theory, Birdsall and Deese (2002) and Cordella et Al (2005) argue that low income countries (more specifically HIPC's) do not suffer from a debt overhang problem, basing their assertion on the evidence of creditors and donors behavior. First, net official transfers to HIPC's have grown together with the debt stock from the 1970s, so they never experienced the crowding out of resources as argued by the debt overhang hypothesis. Second, knowing that this pattern is very likely to prevail imply that debt relief will not have significant effects on incentives and policies as debt is not expected to be paid in first instance. Third, more than due to high levels of debt, HIPC's' limited access to international capital markets is more related to poor institutions or lack of infrastructures that significantly reduce this countries' capacity to attract commercial lending.

However, the first two arguments do not rule out the possibility that high levels of debt may be keeping HIPC's' dependent on the official lending/forgiving trap with limited access the private

capital market. That dependence on official lending may have several negative impacts on growth as illustrated by IMF (2004:9). Those include the fact that over reliance on external aid flows may undermine a government's incentive to maintain sound macroeconomic policies and increase its own repayment capacity (moral hazard problem); or, otherwise, the weakened power in forcing its own development strategies in the negotiation with donors; the cost of debt restructuring; and the increased adverse effects related to the uncertainty accruing from aid volatility may negatively impact growth. Indeed, while the third argument can be valid, the need to link debt to growth in HIPC's can still be relevant because, as argued by Cordella et. Al (2005), even if high levels of debt do not matter for HIPC's growth it does not imply that intermediate levels of debt also do not matter. Indeed, they find a robust evidence of a highly non-linear relation between these two variables: positive at low levels of debt, negative at intermediate levels, and nil at high levels because of the high inflows of money from the donor community on this situation.

Therefore, by showing that debt problems can arise because growth is adversely affected by debt, the developmental approach calls for the consideration of the impact of debt on growth going beyond the analysis of the capacity to generate resources to service debt.

In sum, comparing the debt capacity and the developmental approach, it can be said that while the debt capacity approach asks what is the level of growth and other economic indicators (e.g. level of exports, interest rate, exchange rate, etc.) that would guarantee solvency, the developmental approach asks an additional question which is how debt accumulation impacts growth and other economic indicators in first place, and from there what is the impact to the repayment capacity. The definition of repayment capacity used by the development approach also improves in relation to the debt capacity approach. While the latter does not tell which levels of debt are "safe" the former puts great emphasis on this as, following the debt overhang theory, there are threshold

levels (point A in the Laffer curve) above which debt levels are so high that adversely impact growth.⁵

From the previous theoretical discussion, it can be extracted that a complete DSF should include both the debt capacity perspective and the developmental perspective: in order to be considered in a sustainable debt position, debt should be low enough so that it can be fully serviced without representing a resource constraint and an investment and reforms disincentive that adversely impact economic performance and that at the same time privileges a growth path consistent with poverty and human development targets.

Therefore, the next step is to define those threshold levels. In order to do so, the developmental approach would require a detailed understanding of the relationship between debt and growth and other key economic variables and their path, in specific contexts. However, when it comes to the definition of levels of debt sustainability (thresholds) the methods used are essentially based on the debt indicator approach (Hjertholm, 2001:6-7).

The debt indicator approach is the one used by the LIC DSF defining thresholds of sustainability for a selection of ratios used as indicators of sustainability and applying to low income countries debt sustainability assessments.

⁵ In reality, there seems to be no rigor when using empirical methods to apply the theoretical approaches. For instance, and perhaps in recognition of the limitation that was the lack of a determination of a safe level of debt, while the IMF/WB definition of sustainability previous to the LIC DSF was only focused on capacity to service debt with no reference to the impact of debt on economic performance – suggesting that finding levels of sustainability should be empirically focused on searching for primary or external surpluses that would guarantee non-decreasing debt-to-GDP and debt-to-exports ratios, respectively – empirically it was also based on the definition of thresholds of solvency.

2.3. The LIC DSF Debt Indicator Approach

The debt indicator approach is based in finding indicators of debt sustainability and empirically assessing the respective threshold values of sustainability. This section will critically analyze how this approach is used by the LIC DSF and its adequacy to the Mozambican context focusing on the ratios chosen as indicators of debt sustainability and on the methodologies used to assess their respective threshold values.

2.3.1 The LIC DSF Definition of Debt Sustainability

Before starting the discussion of the LIC DSF indicators it is important to present some general issues related to its definition of debt sustainability. The LIC DSF defines a sustainable level of debt if a country *can meet its current and future external debt service obligations in full, without recourse to debt rescheduling or the accumulation of arrears and without compromising growth* (IDA-IMF, 2001:4). It makes use of the debt indicator approach to derive the thresholds – point A in the Laffer curve – which guarantee that the country is not defaulting and debt is not constraining growth.⁶

From the definition we extract two key points. First, in order for its debt level to be considered sustainable the country must never default, implying that both liquidity and solvency are guarantee. Second, the explicit concern that debt servicing should not compromise growth added to the previous IMF/WB definition, represented a clear improvement towards a more developmental approach. Here, solvency is perceived as requesting not only resources generation to serve the debt but also to finance economic growth.

⁶ Where the variable on the horizontal axis could be any of the sustainability ratios used by the LIC DSF.

It is important to note that in the LIC DSF economic performance takes precedence over debt servicing. This is so because by linking the thresholds of sustainability to debt service problems (as will be shown next in this chapter) rather than to economic problems implies that at that threshold non-distress effects of debt on economic performance are guaranteed. Otherwise, values lower than the threshold would not represent a sustainable position. Implicit on this is that economic problems caused by debt occur before (or at the same time as) debt servicing problems.

2.3.2 The LIC DSF Ratios of Sustainability

The LIC DSF has defined the following ratios as indicators of debt sustainability:

NPV of debt to:

1. Exports
2. Fiscal revenues
3. GDP

Debt service to:

4. Exports
5. Fiscal revenues
6. GDP

The ratios chosen relate debt to measures of repayment capacity. The ratio to exports relates the debt burden to the availability of foreign exchange earnings of the economy, the ratio to fiscal revenues relates debt burden to the availability of domestic resources, while the ratio to GDP relates the debt burden to the broadest measure of the income-generating ability of the economy (Hjertholm, P. 2001; IMF, 2004). The choice of these indicators shows the concern with both the

domestic savings gap and the foreign exchange gap as they both contribute to the countries repayment capacity.

IMF-IDA (2004) and IMF (2007) further explains the rationale for the choice of the ratios. Debt stock indicators provide a useful measure of the total future debt-service burden of existing debt. This burden is best measured using the net present value (NPV) of debt to capture the concessionality of outstanding debt.⁷ The debt service ratios are taken as the most obvious measure of the *Cash Flow* effect, i.e., the immediate burden that debt imposes on a country by crowding out other important uses of scarce resources by the borrower. NPV debt ratios are summary indicators of the burden represented by the future obligations of a country and thus reflect long-term risks to solvency, while the time path of debt-service ratios provides an indication of the likelihood and possible timing of liquidity problems.

2.3.3 The Methodology to Calculate the Threshold Values

In order to properly explain the procedure adopted to define the thresholds of sustainability it is useful to introduce now an explanation of the Country Policy and Institutional Assessment (CPIA) concept. Following the work of Kraay and Nehru (2004) which identified the quality of policies and institutions as one of the main determinants of debt distress in developing countries, the IMF-IDA (2004) adopted essentially the same methodology to apply the analysis specifically to LICs. In order to measure countries' quality of policies and institutions the World Bank developed the CPIA composed of 16 indicators of policy and institutional quality. The CPIA score ranges from 1 to 6

⁷ In fact, as the framework uses a discount rate higher than the interest rate for concessional lending, the NPV of debt for countries benefiting from highly concessional lending is significantly less than the nominal value. The discount rate used is often of 5%, but adjustable whenever the six-month average U.S. dollar commercial interest reference rate (CIRR) deviates from the rate in the template by more than 100 basis points for a period of six months or more (IMF, 2007).

and divides countries into three performance categories: strong, medium, and poor.⁸ The main idea is that policy-dependent external debt-burden indicators are relevant because the debt levels that LICs can sustain are influenced by the quality of their policies and institutions (IDA-IMF, 2004; IMF, 2007).

In brief, and according to IMF (2004), the methodology used to find the thresholds of sustainability consisted in the following. Starting by selecting a group of LICs showing debt distress problems⁹, calculate the unweighted average of the ratio debt-to-GDP for the year before debt distress problems started. Obtained an average ratio of 43% for all countries, this value was interpreted as the global threshold ratio (regardless of countries' CPIA classification), i.e., the switching point from which an "average" country moves from a sustainable debt position to a distressed one. In order to differentiate countries according to the quality of their policies and institutions, the relationship between the burden of debt and the CPIA score was included by running probit regressions for a given level of debt distress probability. In this case the probability chosen was 20% in order to keep the global threshold of 43% (rounded to 45%) as the threshold for countries with medium CPIA score. From the same probit regression were found the threshold ratios for the weak and strong CPIA countries. The same procedure was taken to find other threshold ratios resulting in the first list of threshold ratios differentiating countries according to their CPIA score, later updated (to include new available data) to the following list:

⁸ A rating at or above 3.75 corresponds to strong performance; a rating between 3.25 and 3.75 reflects medium performance; and a rating at or below 3.25 corresponds to poor policy performance.

⁹ defined as significant arrears accumulation (in excess of five percent of total debt) on obligations to official creditors.

Table: Debt Burden Thresholds under the DSF (Applying to external public debt)

	NPV of debt in percent of			Debt service in percent of	
	Exports	GDP	Revenue	Exports	Revenue
Weak Policy	100	30	200	15	25
Medium Policy	150	40	250	20	30
Strong Policy	200	50	300	25	35

Source: IMF (2007:8).

Having the thresholds defined the next step of the LIC DSF is to use a forward looking analysis of debt and debt services dynamics and its relation to relevant economic indicators benchmarked against the thresholds to produce the debt distress risk classification.

The next chapter critically discusses the use of the LIC DSF debt indicator approach to assess the debt sustainability in Mozambique.

3. A Critical Analysis of the Meaning of the Debt Sustainability Indicators Applied to the Mozambican Context.

3.1 The Results of the Mozambique Debt Sustainability Assessment 2007-2027

The results of the Mozambique DSA 2007 placed the country in the low external debt distress risk category. Indeed, the assessment produced results for the ratios of sustainability significantly below the sustainability thresholds for the group of medium CPIA performers (corresponding to the country rating). The DSA results indicate that:¹⁰

The NPV of PPG external debt-to-GDP ratio is projected to rise from 11.6 percent in 2007 to 16.1 percent by 2013, after which it slowly declines over the remainder of the projection period to 9.9 percent by 2027. It thus remains well below the country-specific threshold of 40 percent. The NPV of PPG debt-to-exports ratio increases from 30.3 percent in 2007 to 63.3 percent by 2016—also far below the threshold of 150 percent—before falling back to about 44 percent again by 2027. The NPV of PPG debt-to-revenue ratio increases to a peak of 94.5 percent in 2010, significantly below the threshold of 250 percent. It then declines rapidly to 35.9 percent by 2027, driven in part by the assumed increase in revenue collection.

The debt service indicators also remain below their thresholds under the baseline. As a result of the assumed full delivery of remaining HIPC debt relief in 2007, PPG debt service falls in 2007. The PPG debt service-to-exports ratio, which has a threshold at 20 percent, falls from 2.5 percent in 2006 to 1.1 percent in 2007, peaking at 4.6 percent in 2021 and then gradually decreasing to 3.8 percent in 2027, always well below the threshold. The ratio of PPG debt service to fiscal revenues

¹⁰ See annex II for more detailed results in tables and graphs.

falls from 6.6 percent in 2006, to 2.9 percent in 2007, increasing slowly to 5.1 percent in 2011 and declining to 3.1 by 2027, well below the 30-percent threshold.

However, these results should be taken with caution in light of the weaknesses of the LIC DSF ratios of sustainability and methodologies as it will be discussed in the next section.

3.2 Critique to the Choice of Ratios

The first and more general conceptual problem is that this approach based on finding threshold values for a selection of ratios of sustainability is supported by the assumption that there exists a set of switching values (or at least a narrow range of values) from a sustainable to a debt distressed position, each of them applicable to all debtor countries in the same CPIA category at all times. Also implicit in the choice of this indicator is the assumption that the country is able to use a fixed fraction of its exports revenues for debt servicing (Belloc and Vertova 2005:9). However, not only there is no reason to believe that the threshold would be the same for every low income country (in the same CPIA ranking category)¹¹ as there is also no reason to accept that the same ratio represents the same burden for the same country in every stage of development or in every year. The discussion of each specific indicator that follows helps clarifying this general point.

The ratio of debt (or debt service) to exports is taken as a proxy for the availability of foreign exchange to service the debt. However, as noted by Gunter (2003:8), while these ratios may have a lot more explanation power for middle-income countries whose large part of debt is private and exports growth is closely matched by increases in trade surplus, for import and aid-dependent economies like HIPC's these ratios tend to hide the real constraints of foreign exchange for debt servicing that the economy faces.

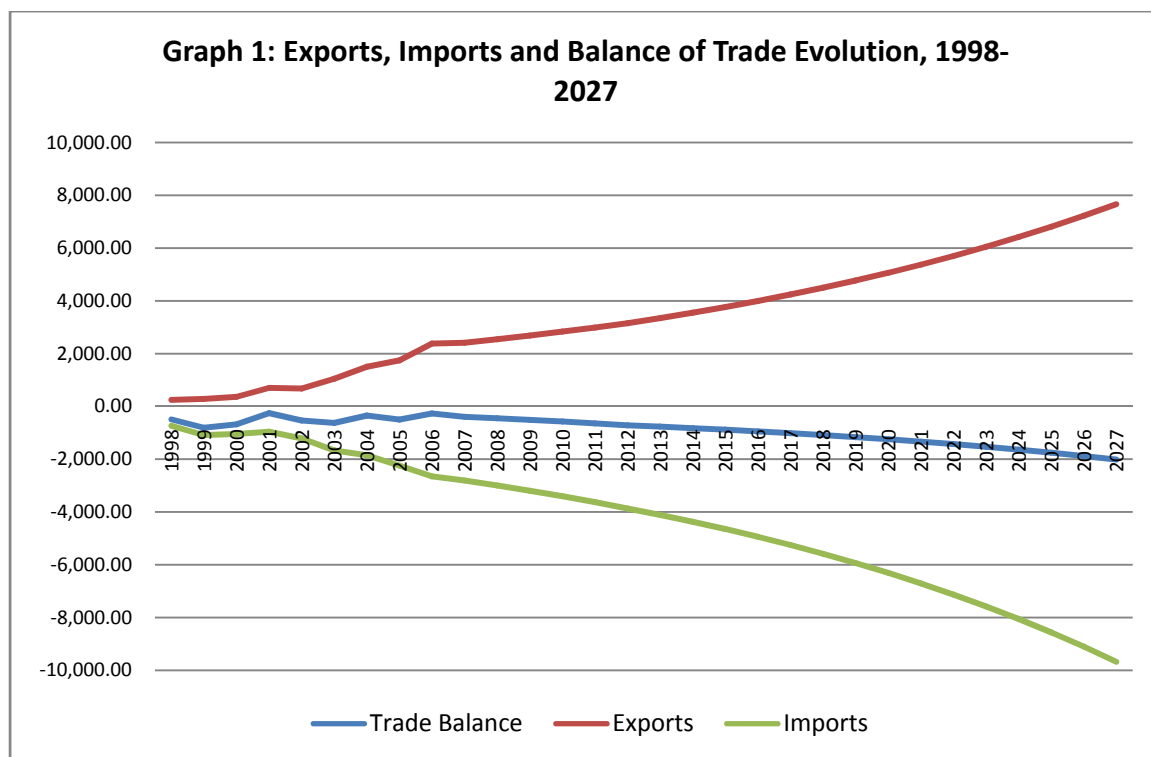
¹¹ The critique to the CPIA conception and its role in the DSF will be developed next in this chapter.

First, not all exports revenues belong or can be accessed by the government. In fact, HIPC governments usually get only a small proportion of their exports. This can happen because in many HIPC large part of the exports are from multinationals who use most of the foreign exchange earnings for imports of equipment, salaries of expatriate workers, and transfers of profits as part of the fiscal benefits granted by the local government. Second, HIPC exports reflect a large degree of re-exports meaning that no foreign exchange is earned by the country. Finally, the point made by Gunter (2003) regarding the disincentive effect that may impact an export-led strategy resulting from the use of the debt-to-export ratio in the HIPC framework, is valid for the LIC DSF. This may happen because a higher debt-to-export ratio increases the risk of debt distress resulting in a higher share of grants in its IDA financing.¹² When these factors are associated to the fact that many LICs are highly dependent on imports for investment and basic consumption, the possibility of import reduction (so that exports growth can be accompanied by a trade account improvement) without constraining growth becomes further limited. An additional problem highlighted by Martin (2004) is related to the high volatility of exports which does not provide a fair picture of the long term burden of debt in relation to the countries' exports.

Most of these arguments against the use of debt to export ratios seem to be valid for the case of Mozambique. First, the growth of Mozambique exports is not being accompanied by a reduction of the balance of trade deficit. According to the LIC this trend will prevail in the long term.

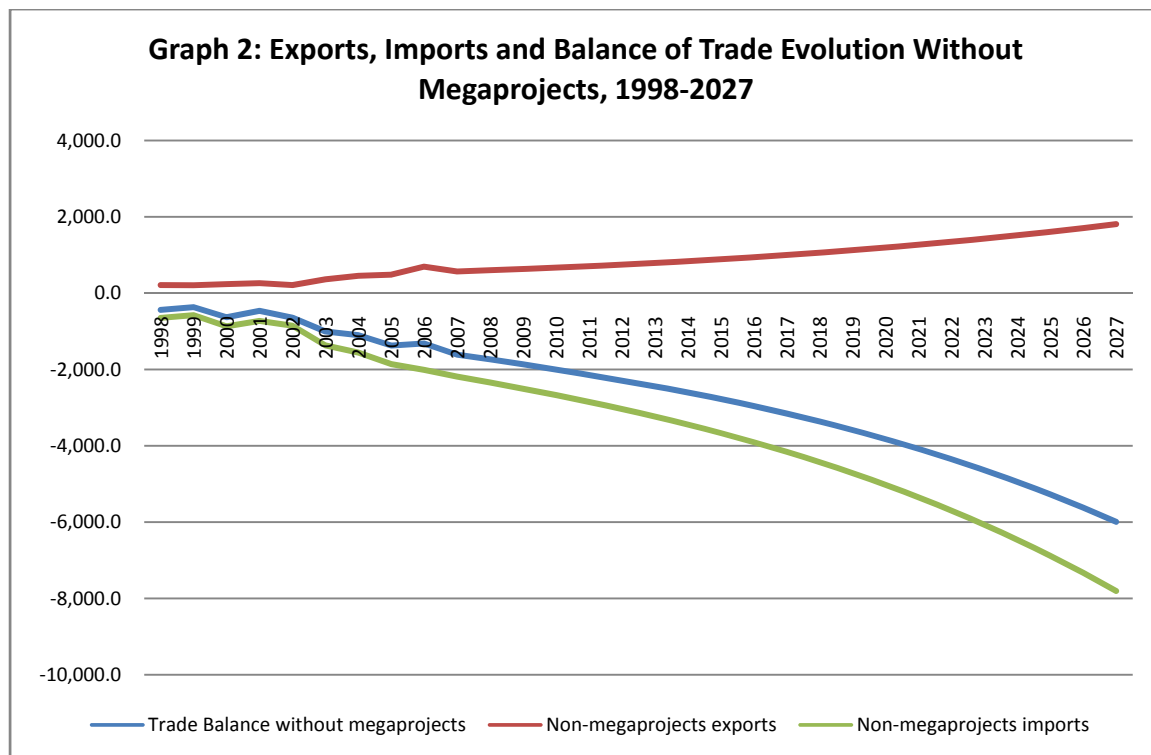
As Graph 1 shows, during the period the trade balance trend will be dominated by the imports trend rather than by the exports trend.

¹² However, this should not be generalized as it is wrong to assume that all LIC governments are willing to sacrifice valid development strategies to obtain larger benefits from external financing. Curiously, by putting 20% upfront discount to the share of grants allocated to each LIC justified under the need to control for moral hazard problems indicates that this is the perception of the IMF/WB.



Notes: the 1997-2007 part of the graph is based on INE data. The 2007-2027 part is based on the Mozambique LIC DSA 2007-2027 projections.

Second, acknowledging that the large majority of exports are done by the megaprojects which are also import intensive and with very few linkages with the domestic economy we have an even worse situation for the trade balance deficit. This situation can be clearly seen in Graph 2 where the trade balance deficit without considering megaprojects is even more accentuated and very close to the imports trend.



Notes: the 1998-2007 part of the graph is based on INE data. The 2008-2027 part is based on the Mozambique LIC DSA 2007-2027 projections.

Third, while the article did not identified and measured re-exports, because Mozambique is a coastal country with 3 important harbors used by the hinterland countries it is very likely that some of the exports registered at the customs are in fact re-exports.

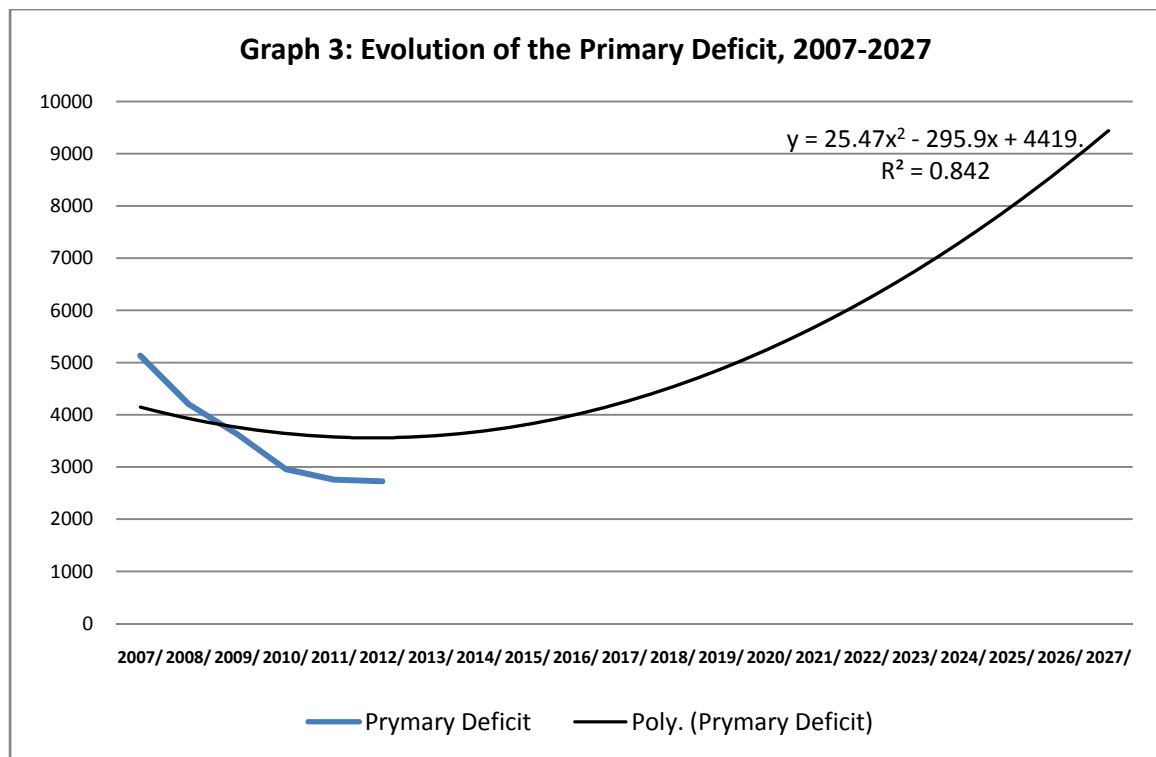
While the previous points made by Gunter (2003) about the need to consider trade surplus, instead of simply exports, when assessing repayment capacity is a valid improvement, it remains quite limited in its ability to measure government debt servicing capacity. The trade account represents only one of the possible sources of the country's foreign exchange. A more comprehensive approach should consider not only the trade balance but also the balance from all the other BoP accounts excluding grants (to keep the focus on the domestic capacity to generate resources) and external debt servicing.

A more adequate assessment of the country's external resources generation would require, besides the expansion of the analysis to all components of the BoP, a more detailed assessment of what resources enter in the country to avoid counting what is registered as foreign exchange entering in the country merely because of the BoP accounting procedures, when in reality the transactions are done using only foreign banks.

In addition, even if the amounts of foreign exchange entering in the country are properly identified, this amount would not be automatically translated into foreign exchange available to the government to service the external debt. This is so because of two aspects. First, in order to be able to access this foreign exchange the money would have to be generated by the government itself (public enterprise exports, selling of public assets, or taxes charged in foreign currency) or, being private exports, they would have to enter into the Central Bank or into the foreign exchange market circuit and this depends on the prevailing agreements between the government and the respective private entities. In addition, to this as argued by Martin (2004:16) governments may be unable (or unwilling given inflationary risks) to buy foreign exchange in the markets to transform private export earnings into government foreign exchange to pay external debt service. Also, if the Government buys foreign exchange in the market it crowds out foreign exchange available for the private sector, potentially adding problems to the real economy and to the export sector. Second, by requesting in its definition of debt sustainability that debt servicing should not constrain growth, the LIC DSF suggests that only after the amount of foreign exchange necessary for developmental activities are subtracted from the foreign exchange that the government can access, it would be feasible to use the remaining to service the debt.

A similar analysis can be done for the case of the **ratio of debt (or debt service) to government revenues**. Not all government revenues are available for debt servicing if we consider that the

government need to make developmental expenses. As government revenues growth is likely to be accompanied by expenses growth, considering only the debt-to-revenues ratio is a weak proxy of the evolution of repayment capacity. The dynamics of the primary balance would provide a more accurate assessment.



Notes: Primary deficit data is available from the Mozambique DSA (2007-2027) only for 2007-2012, 2017 and 2027. The Author used a polynomial equation to find the general trend of the primary balance for the whole period 2007-2027.

While Government revenues are expected to grow for all the period, Graph 4 shows that the primary balance deficit fall in the medium term and starts to grow from 2014-2027 giving a clear upwards trend for the whole period 2007-2027.

The extent to which Government revenues can be used to service external debt is limited by the now widely acknowledged fact that debt needs to be serviced in foreign currency and that the government revenues in local currency cannot be automatically converted into foreign exchange – not neglecting its relevance to the debt repayment capacity, though.¹³

The previous points raise another limitation of the LIC DSF sustainability indicators which is the fact that fiscal and external sustainability are assessed independently when clearly their dynamics impact on each other. As government revenues can also be in foreign exchange the same resources will be included when assessing both external and fiscal sustainability independently. Naturally, this means that the share of foreign currency in government revenues has a direct impact on both fiscal and external sustainability. Also, the fact that government may access private foreign exchange earnings if they enter into the central bank or the foreign exchange market circuit will depend on the government capacity to generate revenues in local currency to buy that foreign currency. In sum, the capacity of the government to access external resources to service the debt and finance development depend simultaneously on the country's (public and private) capacity to generate foreign currency and on government capacity to generate revenues in local currency. Therefore, a more appropriate measure of debt sustainability should consider how the fiscal and external positions jointly contribute for the debt sustainability.

This point can be reinforced by the fact that, besides external debt representing by large the largest share of total public debt, there is also a domestic debt component which tends to increase in many LICs and which can be directly serviced using government revenues in domestic currency.

¹³ The dissertation accepts the observation that increase in government revenues from printing new money may generate perverse effects to the economy (linked to inflation) and therefore will keep it restrained to revenue collection. Running down reserves is not considered as an option because of the threat that it represents to the foreign exchange stability, capital flight and BoP crisis. For obvious reasons, contraction of new debt (domestic or external) is also not considered as a source of revenue to increase debt capacity servicing.

This implies that the external debt burden should not be assessed independently from the dynamics of the domestic debt as it is the case of the LIC DSA procedure. Also overlooked in the DSA is the role of private non-publicly guaranteed debt. If this debt is growing out of the privates' repayment capacity the all country creditworthiness and stability will be affected with negative repercussions on growth.

Regarding the use of **debt ratios to GDP**, Wyplosz (2007:4) and Martin (2004:16) argue that there is little relationship between GDP and the amount of adequate revenues that can be collected.¹⁴ This point is clearly valid for Mozambique where megaprojects being important contributors to GDP contribute very marginally to the countries fiscal revenues and foreign exchange net contribution.

Concerning the use of **the NPV of debt**, as noted by Gunning and Mash (1999:3), at a general level, credit constraints limit the applicability of sustainability analyses based on present values. Besides considering that NPV of debt are being calculated by discounting debt much more heavily than it should,¹⁵ much more important is the more general point made by Martin (2002; 2004) that debt overhang problems arising from private market actors are related to their perception of the burden of debt considering nominal values rather than present values of debt.

In other words, the use of NPV in commercial terms is done to answer the question: if the debtor wishes to repay today its future debt obligations how much would he have to pay? Or, as put by IMF (2004:15) the amount that the debtor would have to put aside in reserves today, to cover its future debt-service obligations. Of course, this question is not relevant for low income countries as

¹⁴ Martin considers that the same is valid for the debt-to-GNI ratio. This could be the case because as compared to the GDP the GNI replaces the trade balance for the current account balance, even if the current account balance is more correlated to repayment capacity if it represents a small fraction in relation to the non correlated part of the GDP – as it does in most of the LICs and usually being negative – then the non-correlated trend will dominate.

¹⁵ Martin's (2004:14) comments on this are related to the HIPC II but are also valid for the LIC DSF. Rather than using CIRR rates, he argues for a discount rate freezed at those applying on investments by developing countries (around 2.5-3%).

it is very unlikely that they can do so using their own resources. While it can be found some evidence of growing reserves this seems to be more linked to prevention measures against disruptive fluctuations of the exchange rate than to serve debt obligations. In fact, adopting or accepting the strategy of building reserves today to serve future debt obligations imply that borrowers and creditors, respectively, do not believe that investing in the economy is the best way to generate resources to repay the debt. Therefore, it is very improbable that NPV values are the ones considered by the country that may trigger (or not) debt overhang problems.

Finally, one should bear in mind that the LIC DSA predicts a smooth path of the key economic variables when often this is not the case for Mozambique and for low income countries in general. Volatility, of exports for example, may produce strong impact on the countries' foreign exchange liquidity.

3.3 Critique to the Methodology Used to Find the Threshold Values

Besides the fact that the ratios chosen are very weak measures of the burden of debt to the repayment capacity and to development, the methodology adopted to find the thresholds are not well supported in analytical terms adding problems into the framework.

First, as wisely asserted by Hjertholm (2001:13) despite the fact that the objective of finding the thresholds was to define debt levels that posed a problem for economic growth the procedure taken was based on singling out countries facing problems for debt servicing. While debt servicing problems may be related to economic growth problems it is a different matter.¹⁶ Moreover, as

¹⁶ While this critique from Hjertholm (2001) refers to the procedure adopted to analyze debt indicators from the World Development Tables 1989-90 and 1992-93 and which guided the definition of the HIPC thresholds, for whatever

highlighted by Caliri (2006), the DSF establishes no link between debt and poverty and human development targets. Most likely, this is a reflection of the overly simplistic and misleading World Bank's perception that growth is good for the poor.¹⁷ However, as deeply discussed by Nissanke and Thorbeck (2007) the channels from which growth impacts poverty are complex and the relationship is not necessarily linear and positive.

Therefore, the methodology adopted was essentially based on the financial approach as debt burden was not linked even to economic growth (they do not assess which levels of debt are so large that they adversely affect growth, regardless of whether debt is being serviced in full or not) but to debt servicing. Depending on whether in each of the LICs considered debt servicing problems started before or after economic growth problems the threshold value may have been pushed down or up, respectively, than the real value.

Second, the methodology adopted to obtain the global threshold ratios (without considering the CPIA discrimination and which defined the threshold ratio for countries with medium CPIA score) was to take unweighted averages of the ratios presented by each of the countries facing debt servicing problems. This methodology establishes no link between the size of debt and the severity of debt problems. The list of countries considered contained some extreme observations showing a non normal distribution skewed to the right which tends to raise the average value used as the threshold.¹⁸

aspects that have not been replaced with the introduction of the LIC DSF the dissertation will present them as valid comments on the LIC DSF.

¹⁷ Linking debt sustainability to the MDGs, IMF-IDA (2007:5) states : *As they (debtors) strive to reach the MDGs, these countries will need to preserve debt sustainability by keeping new borrowing in step with the capacity to repay, adopting better policies and institutions that help accelerate growth, managing debt prudently, and increasing resilience to exogenous shocks.* This clearly reflects a poor understanding of the mechanisms through which debt interacts with development.

¹⁸ The graphical distribution for the debt-to-GDP ratio can be found in IDA-IMF (2004). While this work does not present the other ratios distributions, it should be noted that the in the distribution of debt-to-exports ratio for the

Third, Nissanke and Ferrarini (2007:10) references Ferrarini (2007) who argues that the empirical basis underlying the DSF is remarkably thin, relying exclusively on the empirical results reported in a preliminary World Bank working paper by Kraay and Nehru (2004), and the IMF replication of similar analysis (IMF-IDA, 2004). The approach adopted in these studies fail to take account of early signs of illiquidity which are a precursor to the occurrence of distress; of aid volatility which could have explained a high portion of illiquidity and repayment problems; all of which resulted on the adoption of a weakly supported idea that debt distress problems depend on the quality of policies and institutions as measured by the CPIA; Finally, the proxies used for shocks are grossly inadequate as they are unsuitable for distinguishing between exogenous shocks and endogenous factors.

Finally, as noted by Belloc and Vertova (2005), the procedure is an arbitrary use of history: the actual contract fulfillment by debtors is analyzed on the basis of the past fulfillment. However the past contract fulfillment depends on the past characteristics of the relationship (that is on past power relations and past strategic interactions).

In sum, the technical and theoretical shortcomings of the methodology chosen to find the thresholds of sustainability casts doubts on the validity of the results found adding even more weaknesses to the fact that the ratios don't seem appropriate to assess the impact of the debt burden on both financial as well as economic and development targets.

The use of the CPIA in the debt sustainability framework presents several shortcomings.¹⁹ First, Nissanke and Ferrarini (2007) point out that the motivation for the introduction of the CPIA in the

countries facing debt distress problems and that were used to find the HIPC thresholds, the skewness to the right was even more accentuated (see Hjertholm, 2001).

¹⁹ Other shortcomings of the CPIA and more related to its role in the aid architecture can be found in Nissanke and Ferrarini (2007). In brief, those include the fact that the formula gives precedence to aid productivity over countries

aid architecture and in the DSF comes from a technically weakly supported idea that aid effectiveness depends on the quality of policies and institutions as measured by the CPIA. Indeed, (Ferrarini, 2008) argues that changes in the definition of debt distress events and the use of the UN's economic vulnerability index (EVI), or alternative shock measures undermines CPIA's significance as a predictor of debt distress. Furthermore, the concept of good policies and institutions is based on a narrow conception of the developmental process where the CPIA scoring and its relevance on the decision of IDA financing reflects the imposition of single model of development. This model is essentially the same as that imposed under the conditionalities of SAPs (which produced the widely recognized poor results), with a replacement of the ex-ante for ex-post conditionalities, and reflect the same negligence from the IMF/WB to the recipients' perceptions of the development strategies.²⁰

Second, the imposition of donors' policies over recipients' options raises problems of ownership that may lead to reluctance in implementation which, in its turn, may result in a lower CPIA score and consequently lower IDA financing. By ultimately affecting growth this could end up creating a vicious cycle where low CPIA score and low growth feedback each other with debt position entering into the cycle exacerbating the perverse effects.

need; the fact that it neglects that the quality of institutions and policy implementation capacity are a reflection of countries' stages of development and therefore it is unfair to treat equally countries with same CPIA score but at different levels of development; and its inappropriateness to build the sense of ownership and partnership in the relation between recipients and donors.

²⁰ This limitation of the CPIA and how repayment objectives may contradict developmental goals is interestingly put by Caliri (2006:13). According to him, being a one-size-fits-all measurement of what a "good policy" is, the CPIA in itself contradicts the intention of the DSF to bring about country-by-country analyses. Good policies are not universal and depend on what are the priorities that the country is seeking to achieve under what prevailing circumstances. For instance concerning rural institutional settlements, one would expect the specialization on export products to be highly graded if one seeks better debt repayment capacity, but anticipate agrarian reform and the protection of poor farmers if poverty reduction is at stake.

Third, Nissanke and Ferrarini (2007) argue that, even as a measure of that single minded development model, the CPIA still suffers from other major shortcomings. Those are related to the fact that the CPIA is not an objective measure of the quality of policies and institutions, but a set of subjective scores by bank staff, based on questionnaires organized with country teams at the WB. In addition, the WB assertion that the assessment of quality of policies and institutions is done by considering only aspects under the country's control (*inputs*) is deceiving. In reality, many indicators can be seen as reflecting *outcomes* influenced by exogenous events.²¹ This performance-based aid disbursement has the additional disadvantage that it can very easily result in highly volatile aid flows with severe consequences to liquidity and debt position.

Fourth, the way both the DSF and the IDA financing allocation framework are conceived aggravates these liquidity problems as well as solvency problems. This is so because first, as the share of grants increases as the higher the debt distress risk classification and as grants are subject to an upfront 20% discount, then the percentage of total IDA financing that is discounted upfront increases for countries with higher debt distress risk. Obviously, this can create or intensify debt sustainability problems if those reflect liquidity constraints (Nissanke and Ferrarini, 2007). Second, as put by Oddone (2007) both liquidity and solvency are undermined because countries facing shortages in resources are not allowed borrowing from other non-concessional sources at the risk of suffering a penalization from the IMF/WB. This penalization consists in reducing IDA allocations by 20 to 40 percent or hardening the terms of its loans, by increasing the interest rate and/or shortening the loan repayment period. Third, solvency problems are further heightened by the fact that the DSF is highly dependent on assumptions about the future path of key economic

²¹ Nissanke and Ferrarini (2007) mention as examples of aspects affected by exogenous factors outside the governments control and endogenous to growth, the ability of governments to pursue aggregate demand or fiscal policy, consistent with price stability and achieving external and internal balances and the aptitude in providing public goods depends also on their revenue-raising capacity.

variables which, as noted by Gunter (2003) and Martin (2004), the IMF/WB tend to define them very overoptimistically. Unrealistic optimistic scenarios result in lower share of grants which might undermine countries solvency.

Fifth, Despite the evidence that vulnerability to exogenous shocks were one of the most important determinants of the debt crisis and recognized even by the WB/IMF, they are only given significance as crisis predictors in the LIC DSF alternative scenarios prediction, being left out of the process of defining indicative thresholds and of the core IDA allocation process (Nissanke and Ferrarini, 2007:11-12). Even as a crisis predictor the role of shocks is underestimated because first, as Arnone (2005:13) argues, shocks are only considered in a partial equilibrium and no secondary effects are considered and, second, as noted by Nissanke and Ferrarini (2007:10), the DSF fails to account for large shocks occurring with probability lower than 25 per cent.

In this sense, Nissanke and Ferrarini (2001; 2004; and 2007) argue for a state contingent debt contract as ex-ante debt relief mechanism to deal with debt crises facing commodity dependent, low income countries. By making the distinction between the consequences of debtors own efforts and events beyond its control this scheme could align the incentives of and improve the overall relationship between borrowers and lenders as well as reduce the debtors' liquidity constraints.

In sum, the highlighted shortcomings of the LIC DSF evidence that the framework has no developmental content as it completely neglects the relationship from debt to poverty and human development, it poorly addresses economic sustainability as it does not link debt to economic problems, and it inadequately addresses financial sustainability as it depends on weak proxies of repayment capacity and on improperly defined thresholds and because in association with the IDA allocation process it can potentially create or exacerbate both illiquidity and insolvency problems.

4. Conclusions and Recommendations

Applying a framework to monitor low income countries debt dynamics is fundamental in order to take preventive measures seeking to avoid the perverse effects that debt can have on countries' development dynamics. In this sense the introduction of a regular assessment of debt sustainability in Mozambique should be welcomed.

However, the potential benefits from the adoption of this regular assessment could be overwhelmed by the dangers accruing from its conceptual and technical fragilities. Those fragilities may lead to dubious results from the country's DSA which can mislead the countries strategies to deal with external debt burden on the economy.

While improper assessment of countries' debt distress risk arise mainly because of the misperception of the LICs structural characteristics (in the case of Mozambique the neglecting of the fact that megaprojects that concentrate a large of production and trade have very few and weak linkages with the rest of the economy) resulting in the use of weak proxies of repayment capacity benchmarked against improperly defined thresholds of sustainability with no link to economic and development concerns, the negative impact on the country's debt position may arise because of the impact on liquidity and solvency that the DSF and its role in the international aid architecture produce, as a result of a negligence of specific countries' needs and structural characteristics in favor of imposing a one-size-fits-all development model and of its analytically weakly supported ideas.

Therefore, acknowledging both the positive and negative aspects of the DSF, some improvements would be welcomed. These would have to include i) a replacement of the indicators of debt burden to take into account not only the countries' capacity to service the debt but also their needs to take

developmental expenses; ii) a proper definition of the thresholds taking due consideration of external shocks vulnerability and linking debt to development problems with an improved understanding of their relationship; iii) an added joint framework to assess fiscal and external sustainability with adequate consideration of the impact of domestic and of private non-publicly guaranteed debt on the overall debt distress risk. These improvements imply that the DSAs would require a more country specific in-depth analysis of the country's structural characteristics and its debt and development dynamics.

References

1. AfDB-OECD (2008). African Economic Outlook.
2. Agénor, P. and P. Montiel (1996) Development Macroeconomics, Princeton: Princeton University Press.
3. AIM (2007). Tax Revenue to Fill Gap caused by Swedish Aid Reduction. Nr. 134, 19 August.
4. Alfieri, Andrea et Al. (2006). Estimating the Impact on Mozambique of Different Trade Regimes: SADC, SACU or MFN? Discussion Paper nr. 29E, August 2006. Ministry of Planning and Development. Republic of Mozambique.
5. Arnone, Marco et. Al (2005). External Debt Sustainability: Theory and Empirical Evidence.
6. Bacha, E. (1990), 'A Three-gap Model of Foreign Transfers and the GDP Growth Rate in developing Countries', Journal of Development Economics, 32, 279-296.
7. Belloc, Marianna and Vertova, Pietro (2005). On foreign debt sustainability of developing countries: towards a long run approach for development. Department of Economics University of Siena, Siena, Italy.
8. Birdsall, Nancy and Deese, Brian (2004). Beyond HIPC: Secure Sustainable Debt Relief for Poor Countries. Center for Global Development. Working Paper No. 46.
9. Caliri, Aldo (2006). The New World Bank/IMF Debt Sustainability Framework. A Human Development Assessment. Background Paper prepared for the CIDSE/CI Working Group on Resources for Development.
10. Castel-Branco, Carlos Nuno et. Al, 2004. National Assessment Study of an Economic Partnership Agreement (EPA) Between Mozambique and the European Union (EU).
11. Chenery, H.B. and Strout, A.M. (1966), 'Foreign Assistance and Economic Development', American Economic Review, 56.
12. Cirera, Xavier (2004). Analysis of the Potential Impact of the Economic Partnership Agreements.
13. Cordella, Tito, Luca Antonio Ricci and Marta Ruiz-Arranz. 2005. Deconstructing HIPCs' Debt Overhang, mimeo, Washington D. C., International Monetary Fund.
14. Eaton, Jonathan (1993). 'Sovereign Debt: A Premier'. *The World Bank Economic Review*, 7 (2): 137-72.
15. Oddone, Francesco (2007). Debt sustainability or defensive deterrence? The rise of new lenders and the response of the old. Eurodad.
16. Ferrarini, Benno (2008). Proposal for a Contingency Debt Sustainability Framework. World Trade Institute, Bern, Switzerland.
17. Goldstein, Morris (2003). Debt Sustainability, Brazil, and the IMF. Institute for International Economics. Working Paper nr. 03-1. February 2003.
18. Gunning, Jan Willem and Mash, Richard (1999). Debt Relief and Debt Sustainability For Low Income Countries. Centre for the Study of African Economies. University of Oxford.
19. Gunter, Bernhard G (2003). Achieving Long-Term Debt Sustainability in All Heavily Indebted Poor Countries (HIPCs). Discussion Paper prepared for the Intergovernmental Group of 24 (G-24) XVI Technical Group Meeting in Trinidad and Tobago. February 13-14, 2003.
20. Gunter, Bernhard G., (2002) What's Wrong With the HIPC Initiative and What's Next?, Policy Development Review, Vol. 20, No. 1, pp. 5-24.
21. Hjertholm, Peter (2001). Debt Relief and the Rule of Thumb: Analytical History of HIPC Debt Sustainability Targets. UNU-WIDER Discussion Paper nr. 2001/68.
22. IDA-IMF (2007). Staff Guidance Note on the Application of the Joint Fund-Bank Sustainability Framework for Low Income Countries. Washington, DC.
23. IMF (2007a). Republic of Mozambique Debt Sustainability Analysis. Washington, DC.
24. IMF-IDA (2004). Debt Sustainability in Low Income Countries – Proposal for an Operational Framework and Policy Implications. Washington, DC.
25. Kraay, Aart and Nehru, Vikram (2004). When is External Debt Sustainable? World Bank Policy Research Working Paper, nr. 3200, Washington, DC.

26. Krugman, Paul (1988). Financing Vs Forgiving a Debt Overhang. *Journal of Development Economics*, 29, pp. 253-268. North Holland.
27. Mathew, Martin (2002). Debt Relief and Poverty Reduction: Do We Need an HIPC III? Debt Relief International. Paper Presented to the North-South Institute.
28. Matthew, Martin (2004). Assessing the HIPC Initiative: The Key Policy Debates. Chapter II in *Debt Relief Myths and Realities*, Ed. By Teussen, Jan and Age Akkerman. FONDAD.
29. Nissanke, M., and B. Ferrarini (2001). 'Debt Dynamics and Contingency Financing Theoretical Reappraisal of the HIPC Initiative'. WIDER Discussion Paper 2001/139. Helsinki: UNU-WIDER. (Also in [2004] T. Addison. H. Hansen and F. Tarp (eds), *Debt Relief for Poor Countries*. Basingstoke: Palgrave Macmillan for UNU-WIDER.)
30. Nissanke, Machiko and Thorbeck, E. (2007) [A Quest for Pro-Poor Globalization](#). Chapter 14 of the book, *Advancing Development* edited by George Mavrotas and Anthony Shorrocks, Palgrave/Macmillan, ISBN 0 230-01904-8
31. Nissanke, Machiko and Ferrarini, Benno (2007). Assessing the Aid Allocation and Debt Sustainability Framework: Working towards Incentive Compatible Aid Contracts. UNU-WIDER. Research Paper nr. 2007/33.
32. Northover, Henry et Al. (1998). A Human Development Approach to Debt Relief for the Worlds Poor. CAFOD. UK.
33. Plano de Acção para a Redução da Pobreza Absoluta, 2006-2009 – PARPA II (2005). Governo de Mocambique. Republica de Mocambique.
34. Sachs, Jeffrey D. (1989). The Debt Overhang of Developing Countries. In *Debt Stabilization and Development*, by Calvo, Guillermo et. Al. Oxford: Basil Blackwell.
35. Wyplosz, Charles (2007). Debt Sustainability Assessment. The IMF approach and Alternatives. Graduate Institute of International studies. HEI Working Paper nr. 03/2007.

ANNEXS

Annex I – LIC DSF Criteria for Country Debt Distress Risk Classification

Depending on how the country's current and projected external public debt indicators compare with the thresholds under the baseline, alternative scenarios, and stress tests, a country is classified as (IDA/R2005-0056 and [SM/05/109](#)):

- **Low risk.** All debt indicators are well below relevant country-specific debt-burden thresholds. Stress testing and country-specific alternative scenarios do not result in indicators significantly breaching thresholds.
- **Moderate risk.** While the baseline scenario does not indicate a breach of thresholds, alternative scenarios or stress tests result in a significant rise in debt-service indicators over the projection period (nearing thresholds) or a breach of debt or debt-service thresholds.
- **High risk.** The baseline scenario indicates a protracted breach of debt or debt-service thresholds but the country does currently not face any payment difficulties. This is exacerbated by the alternative scenarios or stress tests.
- **In debt distress.** Current debt and debt-service ratios are in significant or sustained breach of thresholds. The existence of arrears would generally suggest that a country is in debt distress, unless there are other reasons than debt-service burden for not servicing its debt.

Source: IMF (2007:13)

Annex III - Mozambique Debt Sustainability Assessment 2007 Main Assumptions

The medium-term assumptions in the baseline scenario for 2007–27 are consistent with the authorities' medium-term macroeconomic framework described in the government's Plano de Acção para Redução da Pobreza Absoluta II (PARPA II).

Real GDP growth is projected to average 7.0 percent per year during 2007–10 and 6.5 percent thereafter, representing a deceleration from its annual average of 8.6 percent during 2001–06. The 6.5–7.0 percent projection falls within the 5–8 percent range projected by the World Bank in its most recent Country Economic Memorandum for Mozambique (Report No. 32615-MZ).

Consumer price inflation is projected to fall to 5 percent in the medium-to-long term, as oil prices stabilize and inflation converges to levels closer to Mozambique's main trading partner (South Africa).

The real effective exchange rate is expected to remain broadly unchanged, in line with the relative stability observed over the past decade.

Export growth is projected to accelerate slowly from 5.5 percent in the medium term to 6.1 percent in the long term. This is driven to a large extent by traditional (nonmegaproject) exports that grow at the rate of Mozambique's trade partner import demand growth and megaproject exports that are affected by world prices on aluminum and gas.

Import growth is projected to decelerate slowly from 6.6 percent in medium term to 6.3 percent in the long-term. Import growth associated with megaprojects is assumed to equal the rate of megaproject export growth, assuming that the import content of megaprojects remains roughly constant on average. All other imports are assumed to grow at the rate of real GDP growth.

The noninterest current account deficit after grants is projected to expand slowly from 3.2 percent of GDP during 2007–12 to 3.7 percent in 2013–2025, due to slightly higher import growth than export growth.

Fiscal revenues are expected to rise from 14 percent in 2006 to 16 percent of GDP in 2010 reflecting a 0.5 percent of GDP annual revenue effort on account of improved revenue administration and broadening of the tax base. Beyond 2010, nontax revenues from natural resource exploitation particularly megaprojects are expected to make a growing fiscal contribution. The tax to GDP ratio is projected to reach about 22 percent in the long-term, the level estimated as Mozambique's potential tax ratio by a number of studies.¹³ Total expenditures remain roughly constant as a percent of GDP in the long term, resulting in a domestic primary deficit ranging between 2–4 percent of GDP from 2007–27.

External grants to the government are projected to remain high at an average of 9 percent of GDP during the medium term, which will help finance the "second wave of reforms" needed to sustain broad-based growth and achieve the MDGs by 2015. No grant financing is assumed to come forward from IDA. The share of program and project grants versus lending is assumed to fall over time: grants are assumed to fall from approximately 8 percent of GDP in 2006 to around 2.3 percent of GDP by 2027.

Source: IMF (2007a)

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