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CENTRAL GOVERNMENT DEBT SUSTAINABILITY

by

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EXECUTIVE SUMMARY

Namibia has been experiencing an increasing level of Government debt particularly domestic component and this has raised concerns regarding the sustainability of fiscal policy in Namibia.

At end of 2002/03 fiscal year, the Government debt stock to GDP ratio reached 25.2 percent, which is slightly above the 25 percent Debt/GDP ratio benchmark adopted by Cabinet and confirmed in the Medium Term Expenditure Framework (MTEF).

In addressing the debt sustainability, the debt structure remains one of the worrisome component in recent policy debates. As at end of 2003 domestic debt formed 80 percent of total debt, of which 54 percent of domestic debt is short-term or maturing in less than a year. The concentration of Government debt into short-term maturity instruments exposes Government to the rollover risk and complicates cash flow management.

As expected the increase in debt levels resulted in high interest and principal payments. This implies that a growing proportion of current resources is set aside for servicing debts, leaving fewer resources for non-debt related programmes and projects.

The fiscal outlook indicates that Debt/GDP ratio could reach 29.0 percent by 2005/06. The evolution and the sustainability of the debt-GDP ratio depends on the real interest rate on the debt, the real growth rate of the economy, the primary balance of the Government budget (the surplus or deficit excluding interest payments), and debt ratio in the last period.

To evaluate the debt sustainability in Namibia this paper proposes a simple algebra approach developed by Ley. Three broad scenarios were developed based on various assumptions. The scenarios are as follows historic, MTEF(2003-2005) period base line and MTEF (2003-2005) period worst case scenario. The approach shows a sustainable fiscal stance of the Government debt stock for the two first scenarios while unsustainability was depicted in the assumed worst-case scenario.

The analysis was further complemented by the use of the cointegration approach used by MEFMI in their research on debt sustainability. The MEFMI approach has shown that Government revenues and expenditures are co-integrated of order one, which implies that the budget deficit has been sustainable and will be sustainable at least in the medium term.

However, the debt-to-GDP ratio is still projected to be above the recommended limit of 25 percent contained in the NDP2 and MTEF. If the Government continues to accumulate debt at a faster rate and macroeconomic conditions deteriorate this may lead to unsustainable debt levels.

In order for the Government debt to remain sustainable, the study proposes some policies to address the future path of debt stock. The Government should try to remain below the agreed fiscal limits to leave room for maneuvering in difficult times.

Developing an optimal balance between external and domestic debt. It is important to find the lowest possible funding source for the different projects.

High real interest rates and low real economic growth period are bad for debt sustainability. For the Government debt to remain sustainable more efforts should be geared to increase economic growth.

1. INTRODUCTION

The proliferation of the Namibia's Central Government debt, particularly domestic debt, poses the question of medium to long term sustainability of the Central Government debt and fears are being expressed about the possibility of the country falling into a debt crisis that has affected a number of sub-Saharan African countries. An economy is said to have achieved fiscal sustainability when the ratio of Government debt to GDP is stationary and declining in the long run.

Most studies done in this area have focused on policies to stabilize the ratio of external debt to exports. A comprehensive answer to the fiscal sustainability question, however, requires going beyond the country's external debt, and to consider the sustainability of aggregate Central Government debt, including both foreign and domestic debt. Consensus has been that in order for Government debt to be sustainable, it has to be optimally structured.

Like many other developing countries, Namibia has experienced a persistent budget deficits and rising levels of Central Government debt. The objectives of fiscal policy in Namibia focused on stimulating employment and investment and alleviating poverty. This policy approach has put pressure on Government to increase spending, which led to an increase in the budget deficits and consequently rising Central Government debt.

Investigating the sustainability of Central Government involves addressing the conceptual question of whether a Government can continue to operate under its fiscal policy without creating a rapidly growing debt to GDP ratio. Studies carried-out in the region by MEFMI and Ikhide², classified Namibia among countries having sustainable debt levels by end of 1997. These studies however, used 1997 data and since then, the debt situation and most assumptions behind the performance of macroeconomic variables in Namibia have changed significantly. The debt structure and level changes is also be different in the increase in the domestic debt from 10.2 percent of GDP at the end of 1992/93 to 17.3 percent of GDP in 1997/98 and further to 21.3 percent of GDP at the end of 2002/03. In addition, the external debt increased from 1.8 percent of GDP in 1997/98 to 3.9 percent of GDP in 2002/03.

In summary, the increase in levels of Central Government debt particularly the domestic debt has raised concerns regarding the sustainability of fiscal policy in Namibia. The Government stock of debt is slightly above the 25 percent of GDP benchmark spelt out in the NDP2 and confirmed in the Medium Term Expenditure Framework (MTEF) for 2003/04. The purpose of this study is therefore to evaluate the fiscal sustainability of the Central Government debt in Namibia. The study sheds some light on levels when Government debt is unsustainable and provides policy actions to be pursued to stabilize the debt. Finally, the study offers recommendations on the fiscal policy path that is compatible with aggregate debt sustainability in the future for Namibia.

The methodology developed by Ley³ to debt sustainability is the main approach used in this study. The Approach uses a simple algebra in measuring debt sustainability of a country taking into account various macro-economic indicators. To reinforce the findings by the Ley Approach to debt sustainability, the study also used the methodology developed by MEFMI⁴ and various rule of thumbs (used as early warning signals for fiscal sustainability). The MEFMI approach on debt sustainability follows a simple basic econometric technique by looking at the cointegration between revenue and expenditure.

The study consists of six sections. The introduction as dealt with above form section 1, while section, 2 discusses the debt situation and macroeconomic performance in Namibia. Section 3 deals with the review of the relevant theoretical literature underpinning Government debt sustainability. Section 4 presents the methodology adopted in this study. The results and their analysis are covered in section 5. Section 6 concludes.

² Ikhide's study was on Namibia.

³ Eduardo Ley is a senior economist in the Asian division of the IMF Institute

⁴ Macroeconomic & Financial Management Institute of Eastern and Southern Africa

CHAPTER TWO

2. THE NAMIBIAN MACROECONOMIC PERFORMANCE

The purpose of this chapter is to review the performance of the fiscal and other key macroeconomic variables such as the economic growth, inflation rate as well as interest rates development with the view to provide a framework for assessing debt sustainability in Namibia. In this regard, the chapter briefly discusses the trends in revenue, expenditure and budget deficit. It provides an overview of the Central Government debt as well as the trends in interest payment. Furthermore, the overall fiscal outlook is considered to help forming a view of how outstanding stocks of liabilities are likely to evolve over time relative to the economy's ability to pay.

2.1 Overview of Government's Fiscal Sustainability

2.1.1 Budget Deficit

Revenue as a percentage of Gross Domestic Product (GDP) decreased from 33.2 percent in 1992/93 to a low of 30.2 percent in 1996/97, but thereafter increased to 33.6 percent in 2002/03. Total Government revenue to GDP ratio has fluctuated around an annual average of 32 percent over the same period. Expenditure as a share of GDP decreased from 38.1 percent in 1992/93 to 36.2 percent in 2002/03. As a share of GDP total Government expenditure, fluctuates around an annual average of 35.6 percent.

Table 2.1 Revenue, Expenditure and Budget Deficit Trends (As a % of GDP)

	1992/ 1993	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004
Total Expenditure	38.1	34.9	32.6	34.3	36.0	35.4	35.7	36.2	35.0	36.7	36.2	34.9
Revenue	33.2	31.5	30.9	30.7	30.2	32.9	31.8	33.0	33.6	32.1	33.6	30.9
Conventional Budget Deficit	-4.9	-3.4	-1.6	-3.6	-5.8	-2.5	-3.9	-3.2	-1.4	-4.3	-2.7	-4.0
Primary Budget Deficit(+)/Surplus(-)	-4.7	-2.7	-0.7	-2.5	-4.1	-0.5	-1.3	-0.9	0.6	-2.2	0.2	-1.5
Interest Payments	0.2	0.7	1.0	1.1	1.6	2.0	2.5	2.3	2.2	2.3	3.0	2.8

Source: Ministry of Finance and Bank of Namibia

An important by-product of debt sustainability analyses is the computation of the public sector's primary balance compatible with a sustainable and stable debt to GDP ratio. The primary balance is defined as the overall balance, excluding interest payments. The primary balance to GDP in Namibia was in deficit of -4.7 percent in 1992/93 fiscal year, and it improves to a surplus of 0.2 in 2002/03 fiscal year. The dynamic path for the sustainable primary balance depends on a number of key variables, including nominal interests on both external and domestic debt; the rates of domestic and foreign inflation, the rate of growth of real GDP, and the sustainable rates of growth on both types of debt.

2.1.2 Government Debt Structure and Profile

The total Government debt to GDP ratio has increased from 15.5 percent at the end of 1992/93 to 26.7 percent in 2002/03. This ratio is slightly beyond the 25 percent of GDP benchmark spelt out in the NDP2 and confirmed in the Medium Term Expenditure Framework (MTEF). The increase in debt has been driven mainly by the need to finance the budget deficits, mainly funded domestically. Sovereign domestic debt has increased steadily since independence from 10.2 percent of GDP at the end of 1992/93 to 21.3 percent of GDP at the end of 2002/03.

Table 2.2 Total Government Debt as a percentage of GDP+

	1992/ 1993	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003
Debt as a % of GDP	15.5	18.9	17.4	20.1	21.1	19.1	20.4	22.2	21.8	25.6	25.2
Domestic debt as a % of GDP	10.2	14.0	13.5	16.3	17.9	17.3	18.2	19.4	17.9	20.1	21.3
Domestic debt as a % of total debt	65.4	73.8	77.2	81.2	84.9	90.5	89.0	87.7	82.1	78.4	84.7
External debt as a % of GDP	5.4	5.0	4.0	3.8	3.2	1.8	2.2	2.7	3.9	5.5	3.9
External debt as a % of total debt	34.6	26.2	22.8	18.8	15.1	9.5	11.0	12.3	17.9	21.6	15.3

Source: Reports of the Auditor General 1992/93 — 1998/99, Ministry of Finance Budget Documents 02/03, for 01/02: preliminary General Ledger figures, October 02 and Bank of Namibia.

Over the past years, the composition and structure of domestic debt have changed. Whilst Treasury bills accounted for only 38.7 percent of the total domestic debt in 1993, they replaced internal registered stock as the main domestic debt instrument, accounting for 54.0 percent of total domestic debt by the end of 2002/03. The concentration of Government debt into short-term maturity instruments exposes Government to the rollover risk and complicates cash flow management. The funding of capital projects with short-term debt instruments is also not desirable/encouraged as it creates a maturity-mismatch problem.

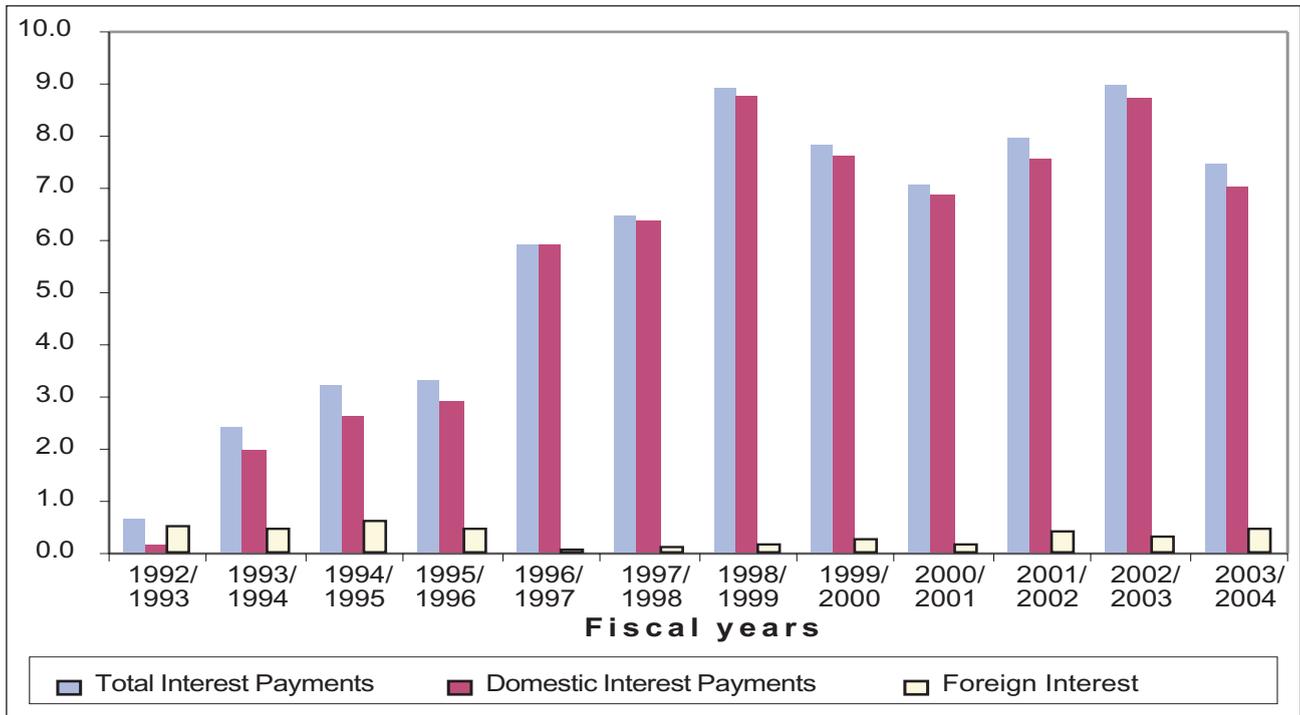
On the other hand, Government's foreign debt stock increased only moderately since independence. As a percentage of GDP foreign debt increased from 1.8 percent of GDP in 1992/93 to 3.9 percent in 2002/03. Virtually, all-foreign loans acquired by the central Government are used to finance capital projects.

2.1.3 Interest Payments

As expected the increase in debt resulted in high interest payments. Measured as a percentage of total expenditure interest payments on domestic debt have increased from 1.0 percent in 1992/93 to about 6 percent in 2002/03. Since the interest charges are paid from central Government revenue, the size of the interest payments relative to revenue determines the capacity of the Government to meet its other recurrent and capital obligations. As a proportion of tax revenue, interest payments increased from 0.6 percent in 1992/93 to 9.0 percent in 2002/03. This

implies that Government is setting aside a growing proportion of its current revenue for servicing debts, leaving fewer resources for non-debt related programmes and projects.

Chart 1 Interest Payments (As % of Tax Revenue)



Source: Bank of Namibia and Ministry of Finance

2.1.4 Fiscal outlook

The Government is committed to achieving macroeconomic stability through fiscal discipline. In order to guide fiscal policy making, Government has set explicit target for expenditure, the budget deficit and levels of national debt in the MTEF 2001/02-2003/04. These targets are as follows:

- . Expenditure should be limited to 30 percent of GDP
- . The budget deficit should not exceed an average of 3 percent of GDP,
- . Government debt should be limited to 25 percent of GDP

Total expenditure as a percentage of GDP is projected to increase from 36.2 percent in 2002/03 to 36.8 percent in 2005/06. The expenditure increases are still largely personnel expenditure driven which is assumed to grow with economic activities (due to envisaged salary increase, an additional employment of ex-combatants in the police force, and the tourism related activities). With persistent high spending on personnel, increases in net lending and future interest payments, it appears that it will be difficult to contain expenditure below 30 percent in the medium term, as recommended in the latest Medium Term Expenditure Framework for 2001/02-2005/06 period.

The budget deficit is projected to increase from 2.7 percent in 2002/03 to 4.3 percent in 2005/06. The forecast increase in the budget deficit is largely due to an envisaged decline in SACU receipts and high level of Government expenditure. It indicates that the budget deficit as a percentage of GDP remains higher than the target of 3 percent set in the MTEF.

Sovereign debt stood at 25.2 percent of GDP in 2002/03, but it is projected to increase to around 29.0 percent of GDP by 2005/06. This increase is due to high projected budget deficit of 4.3 percent of GDP in 2005/06. On average for the period 2001/02- 2004/05, debt to GDP ratio is projected to be 27.6 percent, which is above the recommended limit of 25 percent contained in the MTEF and NDP2.

Debt service payments are forecast to grow substantially in the MTEF period as repayment of the principal on foreign loans commenced. Total interest payments are projected to grow as a percentage of GDP from 3.0 percent in 2002/03 to 3.8 percent in 2005/06. As a percentage of revenue, it is expected to grow from 8.1 percent in 2002/03 to 8.5 percent in 2005/06. These increases were especially justified in the environment of high interest rates and volatile exchange rate, however, with the improvement in this situation, it is hoped that debt service payments would be sustainable in the medium term.

2.2 OVERVIEW OF THE NAMIBIAN MACROECONOMIC PERFORMANCE

A review of the fiscal performance will not be complete, without reviewing the performance of the key macroeconomic indicators and highlighting their outlook. This is important, as the future performance of these indicators will have a bearing on the sustainability of the country's debt.

2.2.1 Growth Performance

Output growth in Namibia started to improve considerably after independence, surpassing the 1.1 percent average achieved during the previous decade. During the period 1991-94, the economy grew by 4.6 percent on average. Between 1995 and 1999, the average growth rate of real GDP decelerated to 3.5 percent. For 2002, the economy grew by 3.3 percent annually.

Table 2.3 Namibia: Selected Macroeconomic Indicators (percent)

Components	1990- 1994	1995-1999	2000-2004
GDP growth	4.6	3.6	3.2
Inflation	12.2	8.4	9.17
Interest rates*	13.49	15.08	10.58**
Export /GDP	46.0	44.2	47.2
Budget balance/GDP	-2.7	3.8	3.8

Source: Bank of Namibia * TB rate ** 2000-May 2003

Inflation rate in Namibia has followed a downward trend, falling from a high of 17.1 percent in 1992 to 6.2 percent in 1998. During the period 1990-1994, the inflation rate recorded an average rate of 12.2 percent. The average inflation decelerated further to 8.4 percent for the period 1995-1999. This was in line with the tight monetary policy stance in the Common Monetary Area (CMA) region.

Domestic interest rates are directly influenced by developments in the South African money markets. The Bank of Namibia maintains its bank rate in close alignment with the South African repo rate. During the 1990s, there were a number of changes in interest rates. The major rates followed trends in South Africa during the period under review. For instance, the money market rate (Tbs) recorded an average of 13.49 percent in the early 1990s and then increased to 15.08 percent between 1995 and 1999. Between 2000 and May 2003, on average it fell to 10.58 percent.

2.2.2 Medium Term Economic Outlook (2002 -2006)

The economic growth in the medium term is expected to average at 3.5 percent per year, somewhat above the population growth rate of 2.6 percent. The growth would largely be primary (on account of zinc production) and secondary sector (EPZ activities) driven. This indicates that the economy is becoming more diversified, when compared to the previous decade and less reliant on Government services.

Inflation is projected to decline moderately during the 2002-2006 periods; the average rate for the year 2004 is projected to decline to 6.5 percent in 2004. The reduction is in line with the CMA country s monetary policy objective of bringing inflation down.

CHAPTER THREE

3. LITERATURE REVIEW

In this chapter, we reviewed the question of debt sustainability particularly borrowing from the literature on work done on the so-called developing countries. These are countries characterized by high debts, un-diversified export base, large share of agriculture in GDP, and a large share of the labor force in the primary sector. They have little access to private financial flows and are considered as unable to sustain the rules of international financial markets. These countries have generally low savings and investment ratios, hence slow growth.

Developing countries use foreign borrowing as a mechanism to address the gap between savings and desired investment and the export-import gap. Such borrowing adds to total resources available to an economy over a given period and enables higher expenditure than would otherwise be possible. If properly utilized, the resources can benefit the countries and contribute to economic growth and poverty reduction, and smoothen out consumption in response to shocks. However, when inefficiently allocated, the cost of borrowed resources can contribute to macro-economic management problems in the form of high or even unsustainable levels of debt serving obligations.

Fiscal sustainability resurfaced as an issue during the 1980s and 1990s. In what came to be a leading contribution to the field of fiscal sustainability, Blanchard (1993:309) states that the key issue is whether the current course of fiscal policy can be sustained without Central Government exploding or imploding. If debt threatens to explode, Government will have to increase taxes, reduce expenditure, monetise or even repudiate debt. Thus, the central issue is the tendency of Central Government over time. If it is stable and does not explode or implode, fiscal policy is sustainable.

3.1 Debt sustainability

Debt sustainability can be defined as the fiscal position that maintains debt at a level that can be serviced without an undue burden of adjustment. In the literature, the analysis of fiscal sustainability has been based on both net and gross debt. Gross debt is commonly used in the analyses of debt sustainability in developing countries. Gross debt is defined as the stock of outstanding Government financial liabilities. Net debt is defined as gross Government debt minus liquid assets of the Government.

The IMF and the World Bank define debt sustainability of a country as its ability and willingness to meet current and future debt service obligations in full, without recourse to debt rescheduling or accumulation of arrears and without comprising growth. There are three key determinants of debt sustainability (IMF and World Bank, 2001). These are (a) the existing stock of debt and its repayment terms, (b) development of a country's repayment capacity including growth, exports, and fiscal revenues, and (c) growth and terms of new borrowing. These determinants are in turn closely inter-related and are linked to domestic and external policies. The existing stock of debt reflects past policies and is a starting point for determining long term debt sustainability. This stock will necessitate a given level of future taxation to service the debt. A heavily initial debt service burden could discourage investment and reduce resources available for development expenditures.

The developments in the country's repayment capacity determined by growth in incomes and exports and the new flows of external finance are also important for long-term debt sustainability. These depend largely on present and

future policies. Similarly, the growth and terms under which new financing is contracted including the composition will have an effect on future growth through returns to investment and the impact on taxation.

Many indicators have been used in debt analysis including both stock and debt service concepts relative to variables associated with a country's potential repayment capacity. Broad indicators such as debt-to-GDP ratios and debt service-to-GDP ratios compare the burden of debt to the ability of the economy as a whole to generate income. Debt-to-export ratios and the debt service to export ratio link the levels of debt and debt service to the availability of foreign exchange earnings in the economy as a whole. Debt- and debt service - to- fiscal revenue ratios link the debt burden more closely to the ability of the public sector to generate income. The Net Present Value (NPV) of debt is used to compare debt among creditors with different repayment schedules. However, no single indicator captures all the elements of debt sustainability. For instance, a country can have a low debt service ratio and a relatively high NPV of debt-to-exports ratio depending on the profile of debt repayment for the country. A very open economy may have a low debt- to- exports ratio and yet a high debt service burden relative to Government revenue. Hence, different debt indicators need to be considered simultaneously in assessing long-term sustainability.

In our study, unsustainability is indicated as a position where the real interest rate exceeds the real economic growth rate and where the primary balance persistently is either in a deficit or in a surplus not large enough to cover the excess of the real interest rate over the real growth rate. This simply means that the growth in tax collections cannot keep up with the growth of the interest cost. As a result, Government has to borrow increasingly to pay for interest cost.

3.2 The Namibian Debate on Fiscal Debt sustainability

With the onset of increasing Central Government/GDP ratio in Namibia during the late 1990s, the sustainability of fiscal policy came under scrutiny. The issue was especially important given increasing demand for higher social expenditure, rising level of public spending on a wage bill, and increasing transfers to public enterprises.

During the late 1990s, several experts expressed their view about the sustainability of fiscal policy (MEFMI 1999, Ikhide 1998). The MEFMI studies that included Namibia in a sample of nine MEFMI countries, which investigated whether the behaviour of domestic debt is consistent with a sustainable fiscal policy, concluded that domestic debt in Namibia and Botswana was strongly sustainable over the sample period. Using OLS on growth rate of debt and on mean interest rates shows that deficit was sustainable because the rate at which the debt exploded was less than the mean interest rate.

The Ikhide (1998) covered the period 1995 to 1999 on the trends and sustainability of domestic Central Government in Namibia, concluded that the primary (non-interest) deficit was sustainable and the conventional deficit was clearly unsustainable. According to Ikhide (1998) there was a rapid rise in domestic debt particularly between the periods 1995 to 1999. Domestic debt was highly skewed towards short-term maturity. This could have some negative implications if such borrowing was used mainly for long term or capital expenditure. Increased in debt service payments and this implied that a proportion of current revenue be set aside to service these debts, thereby limiting the amount of resources available to finance needed development projects. The effect of macroeconomic factors on Government's fiscal stance was found to be remarkable. Thus adverse macroeconomic factors like exchange rate depreciation, interest rate increases and fall in output could have severe negative impacts on Government finances. Most importantly, although the primary (non-interest) deficit of Government was sustainable, the author cautions the interpretation of the overall fiscal stance.

In summary, debt sustainability in developing countries should not be seen in isolation from the general economic management. These countries have a narrow production and export base, are heavily dependent upon primary commodities, which make them particularly vulnerable to external shocks. The growth of incomes, exports, and fiscal revenues, which reflect economic policies of these countries are the underlying determinants of the evolution of their capacities to service debt over the longer term.

It is important to realize that there is nothing wrong with borrowing, externally or domestically to finance key development projects in the economy. In fact, borrowing has served as the engine for sustained economic growth in many high performing Asian economies. What is undesirable is to raise funds whose cost exceeds marginal return on investment. Indeed sub-optimal utilization and application of borrowed funds was a salient feature for debt sustainability problems in many of the developing countries.

On the indicators of debt sustainability, the unsustainability level is indicated as a position where the real interest rate exceeds the real economic growth rate and where the primary balance persistently is either in a deficit or in a surplus not large enough to cover the excess of the real interest rate over the real growth rate. This simply means that the growth in tax collections cannot keep up with the growth of the interest cost. As a result, Government has to borrow increasingly to pay for interest cost.

CHAPTER 4

4. METHODOLOGIES AND RESULTS ANALYSIS

This section presents the main approach used to assess debt sustainability in this paper, which is the Ley developed approach supported by the MEFMI approach and various rules of thumb. The section starts by outlining the superiority of the adopted Ley approach, followed by data description under these approaches.

Ley approach has been chosen as the main approach among all other methods due its simple algebraic application, variables used that are relevant to Namibia s economy and its comprehensiveness to determine debt sustainability. It is the latest approach in debt management developed by Ley (2003) to test fiscal sustainability of the central Government/s. The approach uses simple algebra that is window based (excel) to establish whether debt is explosive or convergent⁵ using nominal interest rate, GDP deflator, real growth rate, and real effective interest rate, among others. It has also additional elements to be used for debt stabilization at a targeted level of debt-to-GDP ratio.

Data description in the Ley approach: The main variables used in this methodology are nominal interest rate, GDP deflator, real growth rate, initial debt-to-GDP ratio, targeted debt-to-GDP ratio and real effective interest rate. The period covered is between 1998 to 2005, which is subsequently divided into three reporting periods; 1998-2002 (historic), 2003-2005 (MTEF baseline projections) and 2003-2005 (MTEF worst case scenario).

Data description in the MEFMI Approach: The main variables used in this approach are Government revenue and Government expenditure between the periods 1990 to 2002.

4.1 ADOPTED APPROACHES TO DEBT SUSTAINABILITY

4.1.1 Debt Sustainability - Ley Approach

A simple algebra of fiscal sustainability constructed by Ley (2003) is adopted in this study to assess whether the current course of fiscal policy can be sustained, without an exploding or imploding debt. According to this approach, debt sustainability is defined as a situation in which a borrower is expected to be able to continue servicing its debts without an unrealistically large future correction to the balance of income and expenditure. Debt also becomes unsustainable when it accumulates at a faster rate than the borrower s capacity to service it.

The Government budget constraint implies that:

$$D_t = (1 + r_t)D_{t-1} - B_t - \tilde{M}_t \quad (1)$$

Let D_t denote the stock of Government debt at the end of year t , let r_t be the (average) nominal interest rate, B_t the primary Primary balance ($B_t > 0$ means that the Government has a surplus) and let M_t denote the end-of-period stock of high-powered money. Equation (1) always holds ex-post. It simply states that the Government will meet its debt obligations, and that any gap, $B_t < 0$, must be either financed by new debt issues, or monetized, or a mix of the two. In contrast, a surplus, $B_t > 0$, can be used to reduce the stock of debt.

⁵ It refers to a situation where debt level is increasing over time (explosive) or stabilizing over time (convergent).

Law of motion of the Government debt-to-GDP ratio:

$$d_t = \frac{(1+r_t)}{(1+g_t)(1+\pi_t)} d_{t-1} - (b_t + \mu_t) \quad (2)$$

$$d_t = \frac{(1+i_t)}{1+g_t} d_{t-1} - (b_t + \mu_t) \quad (3)$$

$$d_t = \phi_t d_{t-1} - (b_t + \mu_t) \quad (4)$$

Where i_t is the real interest rate, π_t is the seigniorage, g_t is the real economic growth, d_t is stock of Government debt, b_t is the primary Primary balance, and ϕ_t is a discount factor defined as $\phi_t = (1+i_t)/(1+g_t)$. **Equation (4) is the fundamental fiscal-sustainability identity.** It is worth noting that ϕ_t is an endogenous factor. However, for simplicity, we shall take ϕ_t as given here.

The most common case in developing countries (and recently in developed countries) is that they have a positive interest rate differential ($i_t < g_t$). If the interest—growth differential is positive or large, the debt-to-GDP ratio is regarded as being Explosive Debt-Dynamics ($i_t > g_t \Rightarrow \phi_t > 1$) as contrast to Convergent Debt-Dynamics ($i_t < g_t \Rightarrow \phi_t < 1$). If the interest-growth differential is positive or the large debt-to-GDP ratio will blow up unless the last term in equation (4) i.e. B_t , which is basically the Government primary surplus, is large enough to compensate for the explosiveness of the debt stock. This means that if the Government wants to achieve a target of debt-to-GDP ratio by a certain time period, while at the same time debt/GDP ratio is explosive they must run primary surpluses (equation 6), large enough to fill the gap each year.

Stabilizing Debt-to-GDP ratios subtract d_{t-1} on both sides of equation (3) to obtain an expression for the change in the debt-to-GDP ratio:

$$\Delta d_t = \frac{(i_t - g_t)}{1+g_t} d_{t-1} - (b_t + \mu_t) \quad (5)$$

If we want $\Delta d_t = 0$, solve for $(b + \mu)$ to obtain:

$$(b_t + \mu_t) = \frac{(i_t - g_t)}{1+g_t} d_{t-1} \quad (6)$$

4.1.2 Debt sustainability (MEFMI Approach)

This approach is used to complement the Ley approach. To understand the test of sustainability it is necessary to start with the Government dynamic budget constraint. To derive the dynamic budget constraint recall that the Government's one period budget constraint is given by:

$$\Delta B_t = G_t^r - R_t \quad (i)$$

Where B_t = nominal value of the Government debt, G_t^r = Government expenditure including interest payments on debt ($G_t + rB_{t-1}$), and R_t denotes tax revenue. The value of spending minus taxes is often referred to as primary deficit. When the nominal interest rate on debt (g_t) is assumed to be stationary around the mean (r), we can rewrite equation (i) as follow:

$$B_t - (1 + r)B_{t-1} = E_t - R_t \quad (ii)$$

Where $E_t = G_t + (r-R)B_{t-1}$ is G_t^r with the interest rates taken around a zero mean because (ii) holds for every period forward hold for every period forward substitution yields:

$$B_t = \sum_{j=0}^{j+1} \gamma^j (R_{t+j} - E_{t+j}) + \lim_{j \rightarrow \infty} \gamma^{j+1} B_{t+j} \quad (iii)$$

Where $\gamma = (1+r)^{-1}$. The representation of (iii) in terms of the difference operator, ΔB_t is:

$$G_t^r - R_t = \sum_{j=0}^{j+1} \gamma^j (\Delta R_{t+j} - \Delta E_{t+j}) + \lim_{j \rightarrow \infty} \gamma^{j+1} \Delta B_{t+j} \quad (iv)$$

Where (iv) is derived by applying the difference operator Δ to equation (iii) and using equation (i). For equations (iii) and (iv) to impose a constraint analogous to the intertemporal budget constraint faced by an individual, it must hold that:

$$E_t = \lim_{j \rightarrow \infty} \gamma^{j+1} \Delta B_{t+j} = 0 \quad (v)$$

in equation (iv) If equation (v) is satisfied, then intertemporal budget balance or sustainability holds because this would require that the Government run future surpluses equal in expected present-value terms, to the current market value of debt. To test condition with equation (v), the procedure in the literature is to test for stationarity of ΔB or alternatively to test for the stationarity of $G_t^r - R_t$ (if they are each $I(1)$ with cointegrating vector, $(1,-1)$ imposed. An equivalent procedure is to test for cointegration in the regression equation,

$$R_t = \mu + bG_t^r + \varepsilon_t \quad (vi)$$

and thus test the $0 < b < 1$ which is a necessary and sufficient condition for sustainability (i.e. that equation (v) hold). Furthermore, cointegration is only a sufficient condition, Quintos (1995). Quintos points out that the condition $0 < b < 1$ has serious policy implications because a Government that continues to spend more than it earn has a high risk of default and would have to offer higher interest rates to service its debt.

Testing for debt sustainability therefore proceeds as follows. If R_t and G_t^r are $I(1)$, we will run regression (equation vii) and test the null hypothesis that $b = 0$ against the one-sided alternative that $b > 0$. If the null hypothesis accepted then the deficit is sustainable, but if it is rejected, we test the null hypothesis that $b = 1$ against the alternative that $b < 1$. If the null is accepted so that $b = 1$, the condition of cointegration between R_t and G_t^r is fulfilled or there is full cointegration.

4.1.3 The Rules of Thumb

Various rules of thumb have been developed to test for debt sustainability. The important aspects of these rules of thumb are that they can be used as early warning signals for fiscal sustainability. They may seem somewhat arbitrary, but can be useful for practical purposes. The Maastricht Treaty of the European Union, the Commonwealth Secretariat, and the debt Relief international has developed various sustainability ratios⁶. The key ratios are as follows:

- Fiscal deficit should not be more than 3 percent of GDP
- Total Government debt service should not exceed 15 percent of Government revenue
- Total Government debt should not exceeds 25 percent of GDP
- Government domestic debt should not be consistently higher than 167 percent of domestically generated Government revenue.
- Government domestic should not exceeds 20 percent of GDP
- Government external Debt to GDP not more than 5.1 percent
- Government external Debt to Exports should not exceeds 10 percent.

Most of these indicators are adopted by the Namibian Government through the MTEF, NDP2 as well as the Debt Management Strategy (still under review).

4.1.4 Limitation of Debt Sustainability Models⁷

For any particular country, debt sustainability analysis has some limitations. The calculations are sensitive to the projections of exogenous variables and the margins of error are inevitably large.

The debt sustainability methodology applied in this paper does not tell what could be a safe Government debt to GDP ratio, it only indicates whether it is stable, rising, or falling. However, stabilizing it at 25 percent of GDP does not produce the same level of vulnerability as stabilizing at 45 percent of GDP. History counts in the evaluation of a safe debt ratio.

⁶ See Johnson (2001) for a detailed discussion of these ratios.

⁷ This extracted from article written by Caryl McNeilly, an Assistant to the Director of the IMF Institute.

Another issue is that the models used in debt analysis do not acknowledge how difficult it is to change the variables that affect sustainability. Debt sustainability models show that a debt ratio could be stabilized by increasing the primary budget surplus by only one or two percent. This could be misleading as it had been proven to be difficult or impossible in some economies to improve their primary budget surplus even by one percent.

The standard framework of debt analyses ignores the foreign exchange constraint. The framework does not take into account the resource availability to service external debt that could be captured by export to GDP ratio. Looking only at the external debt-GDP ratio implicitly assumes that production can easily be shifted to exports to generate the foreign exchange needed for debt service. But such a reorientation is difficult in countries with a history of import substitution policies and with a low ratio of exports to GDP.

Finally, it is not easy to identify the appropriate real interest rate to apply to the debt stock in sustainability projections. If the Government engages in risky borrowing strategies (e.g., short maturities, dollar indexation) the current nominal interest rate may be substantially lower than the future rate. The choice of deflator to convert the nominal to real interest rate is also important. As there is sometimes a temptation to deflate nominal interest rate by the highest price index and that result into lower real interest rate.

CHAPTER 5

5. RESULTS AND ANALYSIS

In this section, we present the results and analysis as underpinned by the various methodologies adopted in the previous section.

5.1 Debt Sustainability (Ley Approach)

In the case of Namibia, we tested the debt sustainability using three scenarios. The first scenario used the historic data from 1998-2002. In the second scenario the MTEF projections from 2003-05 were used. The last scenario, which is the worst-case scenario, assumed deterioration in the key macroeconomic indicators for the MTEF period 2003-05. As reviewed by Ley (2002), a typical debt sustainability evaluation consists of focusing on Government debt-GDP ratio. The fiscal debt is said to be sustainable only if the debt-GDP ratio is stable or declining over time while a rising ratio denotes unsustainability pattern.

(a) Historic data Scenario (1998-2002)

Under the historic data scenario we want to examine whether or not the path followed by the Government debt during the period 1998 to 2002 was sustainable. Table 5.11 below shows that between 1998-2002, Government ran on average a primary deficit of —0.8 percent, debt-to-GDP ratio of 24.7 percent, marginally below the target of 25 percent and real growth rate of 2.8 percent, which is more than the real effective interest rate of 1.67 percent.

The result shows that the Government of Namibia's interest-growth differential is — 1.13 for the period 1998-02, while the discount factor (ϕ_t) is 0.994, meaning that the debt stock of the Government is sustainable or convergent debt-dynamics since ($i_t < g_t \Rightarrow \phi_t < 1$) (refer to equation (4) -the fundamental fiscal-sustainability identity). Though the discount factor is less than 1, it is a weak sustainability and very close to 1 and does not leave much for manoeuvring in future, especially if some key macro economic variables deteriorate. According to this approach, it is important that real growth rate should surpass the real effective interest rate so that economy is in the position to service its debt obligations.

Table 5.1 Macroeconomic Indicators (Percentage of GDP) 1998-2002

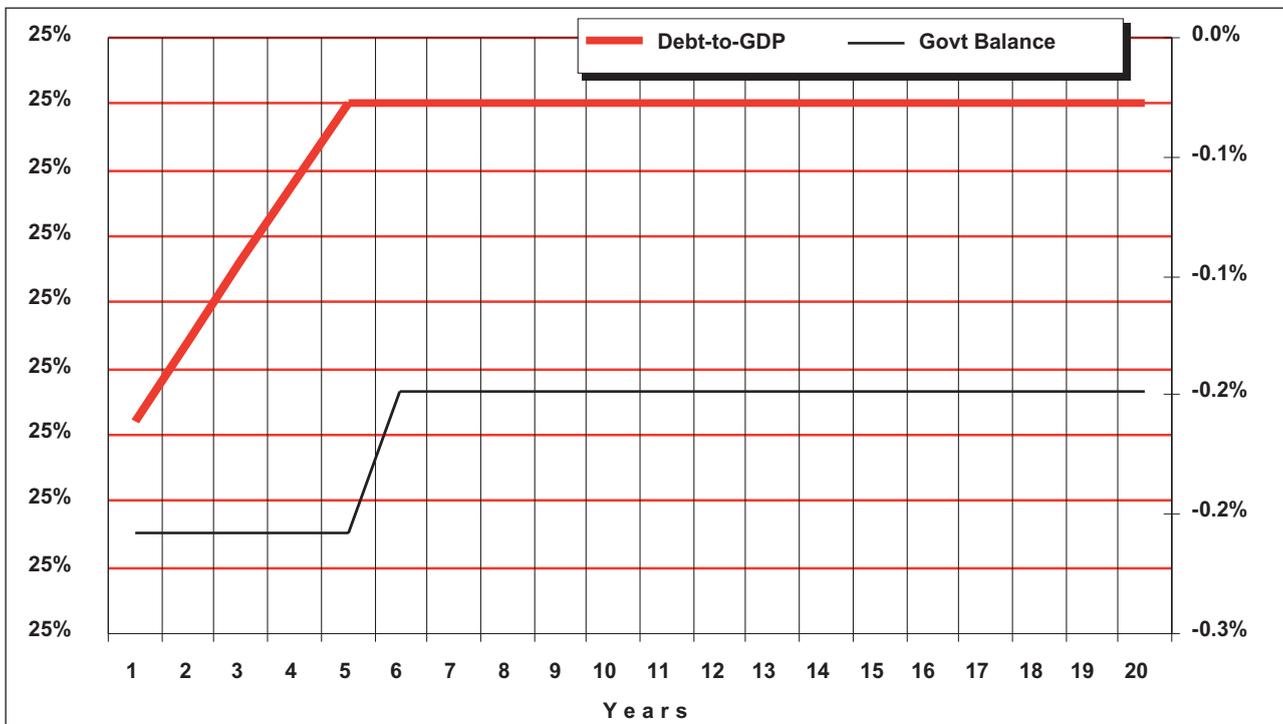
Nominal Interest Rate	r	12.10%
GDP Deflator	„	9.70%
Real Growth Rate	g	2.80%
Initial Debt-to-GDP	d	24.70%
Budget Deficit	b	-3.30%
Real effective Interest Rate	i	1.67%
Interest-Growth Differential	i-g	-1.13%
Discount Factor	Φ	0.994
% (Equation(6))		
t	Primary balance	Debt-to-GDP
1	-0.8	25%
2	-0.8	26%
3	-0.8	27%
5	-0.8	28%
6	-0.8	29%
8	-0.8	30%
20	-0.8	37%

Source: Bank of Namibia

The lower part in table 5.1 indicates that if we assume that the macro economic conditions provided in the upper part would remain unchanged in next 20 years, while running a primary deficit of 0.8 percent, the targeted debt-to-GDP ratio of 25 percent will be difficult to maintain. As we can observe in the lower part of table 5.1, debt-to-GDP ratio will rise from 26 percent in year 2 to about 37 percent in year 20. Although the debt is still sustainable during this period according to approach used here, it is interesting to note that it is deviating substantially from an official targeted level of 25 percent. Moreover, is generally accepted that debt should remain stable or decline over time if the objective of sustainability is to be achieved.

Such an increasing debt as seen in the above scenario will require stabilization measures to keep the debt at the agreed targeted level. Stabilizing debt-to-GDP ratio by a specified time period, equation (5) requires that the Government to run primary surpluses. The larger is the real interest-growth differential, the larger the required surplus. The ideal case is when the differential is zero and thus the fiscal position is convergent debt-dynamics as opposed to explosive debt-dynamics.

Chart 5.1 Stabilizing debt-to-GDP ratio with 1998-02 projections (achieve target within 5 years)



Source: Bank of Namibia

For the Government to stabilize the target of 25 percent debt-to-GDP ratio in 5 years time, attempts should be made to run lower primary deficits of about 0.2 percent on average for the next 5 years. This should be followed by a smaller deficit if the target of 25 percent is to be achieved as observed in chart 5.1. This is based on the assumption that the economy will register more or less the same macro economic performance as for the period 1998-02. However, according to the projections of both the Bank of Namibia and Ministry of Finance, this may not hold since Government debt is projected to increase to around 30 percent of GDP by 2004/05 due to the high projected deficit of over 4 percent as opposed to an average debt ratio of 24.7 percent of GDP and deficit of 3.3 percent for 1998-02.

(b) The MTEF Scenario (2003-05)

Here we examine debt sustainability using the MTEF projection to see whether or not Government's future fiscal policy stance is going to be sustainable. For the period 2003-05, the performance of the economy is projected to be better than for the period 1998-02 on the back of improved real growth rate of 3.5 percent, which is far

better than the real growth rate of 2.8 percent for 1998-02. Though the budget deficit and thus the debt-to-GDP ratio is expected to deteriorate, this would be offset by the high real growth rate, which is more than real effective interest rate.

The result for the projected period of 2003-05 shows the Government of Namibia's interest-growth differential of -1.46 and the discount factor of 0.976 . This means that Namibia's future fiscal stance is also sustainable and is projected to be better than 1998-2002. An improved fiscal sustainability of 2003-05 is primarily due to improved projected macro economic performances of the economy, namely real growth rate, which is higher than the real effective interest rate forecasted for the period, while inflation remained more or less the same.

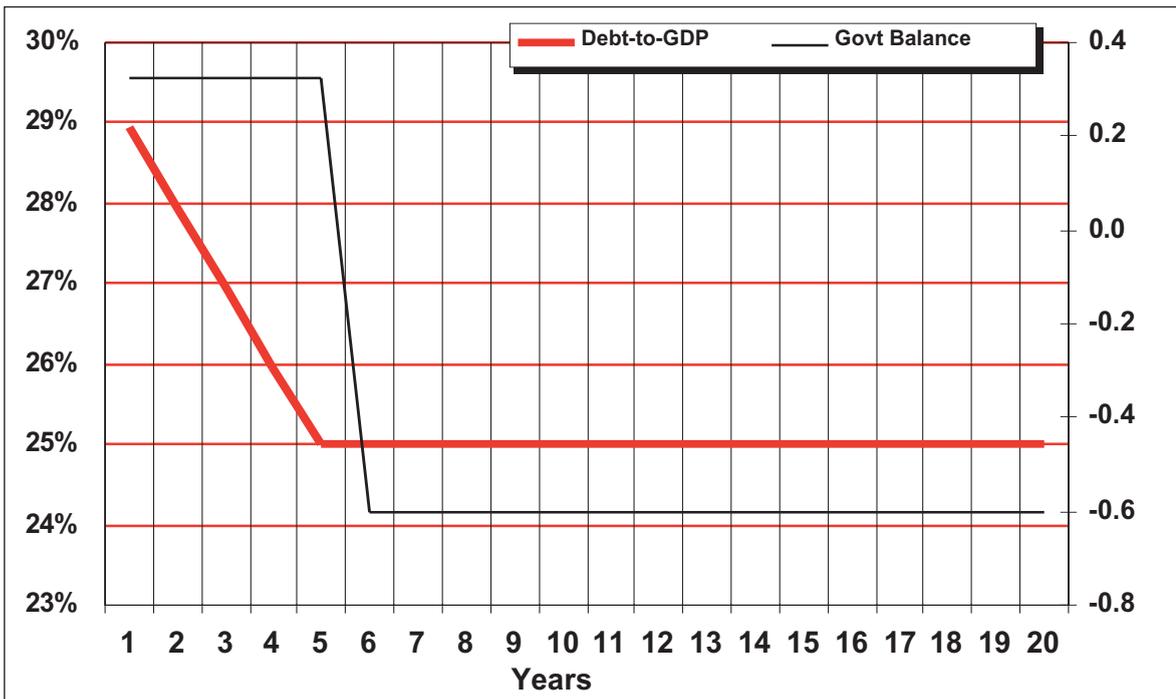
Table 5.2 Macroeconomic Indicators (Percentage of GDP) 2003-05

Nominal Interest Rate	r	11%
GDP Deflator	„	9.90%
Real Growth Rate	g	3.50%
Initial Debt-to-GDP	d	26.70%
Budget Deficit	b	-2.0
Real effective Interest Rate	i	2.04%
Interest-Grow Differential	i-g	-1.46%
Discount Factor	Φ	0.976
t	Primary balance	Debt-to-GDP
1	-0.8	27%
2	-0.8	27%
3	-0.8	27%
5	-0.8	27%
6	-0.8	28%
8	-0.8	30%
20	-0.8	29%

Source: Bank of Namibia

The lower part of table 5.2 shows that if macro economic variables remain unchanged in next 20 years, while running a projected primary deficit of about 0.8 per cent, the debt-to-GDP ratio will be increasing. This again will deviate from the targeted level of debt to GDP ratio of 25 percent. In order to stabilise this debt to a targeted level certain measures must be put in place or otherwise the benchmark would have to be scaled upward.

It appears that the target of 25 percent in this scenario gets even more difficult to achieve (chart 5.2). Assuming that the debt-to-GDP ratio will be about 30 percent on average for the period 2003-05, the Government must run primary surpluses of 0.3 on average if it wants to bring down the ratio from 30 percent to 25 percent in five years time.

Chart 5.2 Stabilizing debt-to-GDP ratio with 2003-05 projections (achieve target within 5 years)

Source: Bank of Namibia

The projected recovery of the economy, averaging at about 3.3 percent between 2003 and 2004 as well as the abatement of inflationary pressures will help tremendously to keep real growth rate of the economy above the real effective interest rate. This in turn results in low (less than 1) or negative interest-growth differential. This is a fundamental condition for sustainability according to the Ley Approach. However, the debt-to-GDP ratio is still projected to be above the recommended limit of 25 percent contained in the NDP2 and MTEF. Therefore, it will be really difficult if not impossible for this target to be maintained given the high projected deficit in MTEF and new foreign borrowings in the pipeline, unless the economy outperforms the projections and the expectations.

(c) MTEF Worst Case Scenario (2003-2005)

This scenario covers the period 2003-05 and evaluating whether Government debt will still be sustainable if the macro economic environment worsened for that period. A number of major macro economic variables are assumed to perform poorly on average for period 2003-05. For instance nominal interest rate is assumed at 14.5 percent, inflation at 11.2 percent, primary deficit of 2 percent, debt-to-GDP ratio of 33 percent, real interest rate at 2.97 percent and real growth rate at a mere of 1.8 percent, which is below real interest rate.

The results of the worst-case scenario show that the interest-growth differential is 1.17 percent and the discount factor is 1.01. This is an extremely explosive and vicious debt situation, which is strongly explosive. It resulted from high real interest rate relative to economic growth and in turn led to a discount factor of more than 1. As explained earlier, debt sustainability requires real interest rate to exceed GDP growth. In a case such as this one where a strong primary surplus is necessary to reduce the Government debt. However, as we can observe in table 5.3 the capacity of the Government to service its debt obligations are severely hampered by the high real interest rate, which in turn contributed to a slower growth rate.

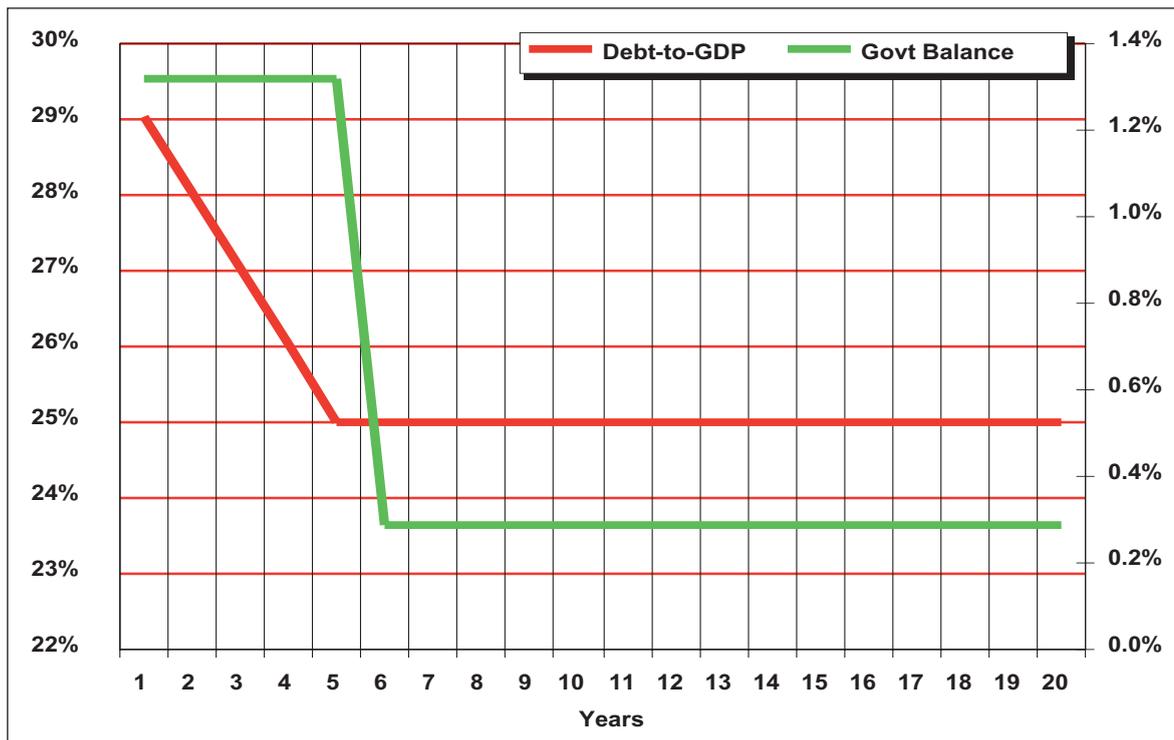
Table 5.3 Macroeconomic Indicators (Percentage of GDP) 2003-05

Nominal Interest Rate	r	14.5%
GDP Deflator	,	11.2%
Real Growth Rate	g	1.8%
Initial Debt-to-GDP	d	30.0%
Budget Deficit	b	-5.0%
Real Interest Rate	l	2.97%
Interest-Growth Differential	$i-g$	1.17%
Discount Factor	Φ	1.01%
t	Primary balance	Debt-to-GDP
1	-2.0	32%
2	-2.0	35%
3	-2.0	37%
4	-2.0	40%
5	-2.0	42%
6	-2.0	44%
7	-2.0	47%
8	-2.0	50%
20	-2.0	82%

Source: Bank of Namibia

The lower part in Table 5.3 presents what the Debt-to-GDP ratios would be like in this scenario. Debt-to-GDP ratio will explode from 32 percent in year 1 to 42 percent in year 5 and ultimately to a massive of 82 percent in year 20. These ratios are not stable and will lead to high real interest rate, which in turn slows economic growth.

Stabilizing debt-to-GDP ratio at 25 percent at a specified time period equation (5) requires the Government to run primary surpluses. The larger is the real interest-growth differential, the larger the required surplus. The ideal case is when the differential is zero and thus the fiscal position is convergent debt-dynamics as opposed to explosive debt-dynamics.

Chart 5.3 Stabilizing debt-to-GDP ratio with 2003-05 projections (achieve target within 5 years)

Source: Bank of Namibia

The worst-case scenario is the most difficult target to stabilize. Debt-to-GDP ratio would be 32 percent if the worst-case scenario materializes. As a result, this will require the central Government to run primary surpluses of about 1.3 percent on average to stabilize the ratio back to the target of 25 percent in five s time and thereafter a surplus 0.3 percent to maintain the target (chart 5.3). This requires reprioritization of expenditures or mobilisation of revenue.

5.2 Debt sustainability (MEFMI Approach)

Our analysis in this section will be based on the sustainability test we formulated earlier (see section 4.1.2, equation 6), which rely on cointegration analysis of the two variables, Government revenues and expenditures. Actual data from 1990/91 to 2002/03 was obtained from the Ministry of Finance. Additional data on revenues and expenditures were taken from the Medium Term Expenditure Framework (2003/04 —2005/06).

The variables were first tested for stationarity, using the augmented Dickey-Fuller test. The results show the Tax revenue is integrated of order (1) with the ADF test statistic of -3.974471 , which is slightly less than the critical values of -3.9271 at 5 percent level of significance. The same was also true for Government expenditure. Then we tested for cointegration between revenue and expenditure using Engle-Granger's residual based test. Our sample was for the period 1990/91 — 2001/02 for actual data. Then the sample was extended from 1990/01 to 2005/6. This period include projections in the future. The null hypothesis of no cointegration was rejected at 5 percent confidence level in both samples. We concluded that the two variables are cointegrated and this means that Government deficit/debt has been sustainable and will be sustainable, at least in the medium term.

5.3 The Rules of Thumb

In this case, we look at the data from 1998 to 2005 to assess whether or not the Government of Namibia debt appears to be sustainable. The figures presented below in table 5.4 are in line with the evolving macroeconomic structures presented in the Macroeconomic Outlook and the present stance of fiscal policy as set out in the Medium Term Expenditure Framework.

Table 5.4 Debt Indicators for Namibia (1998 -2005)

In percentage	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Fiscal Deficit/GDP	-3.9	-3.2	-1.4	-4.3	-2.7	-4.0	-3.3	-4.3
Total Govt debt / GDP	20.4	22.2	21.8	25.6	26.7	25.6	27.1	29.0
Interest payments on Total debt/ Revenue	7.9	7.1	6.5	7.3	8.1	8.5	8.6	8.5
Govt domestic debt / GDP	18.2	19.4	17.9	20.1	21.3	22.4	21.5	22.6
Govt domestic debt/ Revenue	61.3	60.6	58.4	61.6	64.1	63.1	62.6	60.2
Govt external Debt/ GDP	2.2	2.7	3.9	5.5	3.9	5.3	5.3	4.9
Govt external debt/ exports*	8.2	9.4	9.9	16.4	13.1			

Source: Bank of Namibia and Ministry of Finance * On a calendar year basis

(a) Fiscal deficit/ GDP not more than 3 percent

Low and stable fiscal deficits are of critical importance for the favorable long run prospects of a country, as well as for avoiding the short run macroeconomic ills of high inflation, high real interest rates, and real overvaluation. It is clear from the data that it is a challenge to contain the fiscal deficit/ GDP ratio to 3 percent. On average the deficit, appears to be 3.25 percent marginally above the target level.

(b) Government debt/GDP should not exceed 25 percent

This ratio has been on the increasing path and estimates suggest even high levels. Debt is said to be sustainable if debt to GDP is stationary and declining in the long run. From table 5.4, it is clear that Namibia's debt is likely to remain above this level in the period under review.

(c) Debt service repayments not more than 15 percent of Government revenue

In this case, we are using total interest payments on total debt as a proxy for debt service repayments (interest plus principal repayment). The reason for this is due to unavailability of data on principal repayment. The total interest payments have been increasing slowly since 1998/99 and are expected to rise further. In terms of the target, it appears to be sustainable, but caution should be exercised, as this is only one component of this target. With the commencement of repayment of principal on foreign loans, this ratio could increase and may even surpass the target in the Medium term.

(d) Government domestic debt should not exceed 20 percent of GDP

Domestic debt is typically contracted on non-concessional terms. The fiscal costs of serving such a debt could be quite high in cases where the outstanding stock of domestic debt is high relative to GDP. In the case of Namibia, the domestic debt /GDP ratio the target range is set at 20 percent. This target has slightly been exceeded and projection shows further increase.

(e) Domestic debt not consistently higher than 167 percent of domestically generated Government revenue

Domestic debt has been on the rise, however as a ratio of domestically generated Government revenue it is far below the target. The ability to service this debt becomes crucial, as domestic debt cannot be defaulted, unlike external debt. This is because domestic debt is mostly held by the banking sector and default or unsustainability may trigger a banking crisis.

(f) Government External debt/GDP not to exceed 5.1 percent

Government external debt has been increasing steadily. Due to the sensitivity of external debt to exchange rate, great cautious should be exercised and maintain this in affordable limits. Namibia poses a small export base that is less diversified and highly dependable on foreign market prices.

In conclusion, in analyzing debt sustainability all indicators should be considered, as there is no single one that can provide the right measure of sustainability. The Government should try to remain below the agreed limits to leave room to maneuver in difficult times.

Chapter 6

6. CONCLUSION AND POLICY RECOMMENDATIONS

6.1 CONCLUSION

In this study, we investigated whether the behaviour of debt in Namibia is consistent with a sustainable fiscal policy. The analysis was based on the approaches developed by the Ley and MEFMI. The methodologies used concluded that the fiscal stance of the Government debt has been sustainable and remains sustainable in the medium term, if all assumptions underpinning the MTEF do hold.

The study made several assumptions under three broad scenarios: (i) historic scenario; (ii) MTEF scenario (2003-05); (iii) MTEF worst-case scenario. The first two scenarios show that the debt was sustainable and will remain sustainable if all MTEF assumptions hold. In other words, if the country run a real economic growth rate of above 3 percent, inflation below 10 percent, primary deficit of 0.8 will be sustainable for the MTEF period scenario.

However, Namibia's Central Government debt may become unsustainable if the macroeconomic environment changes, i.e. having an inflation rate of more than 10 percent, economic growth rate of below 2 percent, primary deficit of 2.0, and initial debt as ratio of GDP deteriorate to 33 percent. Then in such an environment, the Central Government will become explosive and hence unsustainable.

The projected recovery of the economy, averaging at about 3.5 percent between 2003 and 2005 as well as the abatement of inflationary pressures will help tremendously to keep real growth rate of the economy above the real effective interest rate. This in turn results in low (less than 1) or negative interest-grow differential. This is a fundamental condition for sustainability according to the Ley Approach.

The MEFMI approach of fiscal sustainability has shown that Government revenues and expenditures are co-integrated of order one, which implies that the budget deficit has been sustainable and will be sustainable at least in the medium term as we extended the sample to include the Medium Term Expenditure Framework's (MTEF 2003/04-2005/06) data. We also looked at the co-integrating coefficient (b), between revenues and expenditures, which is said to be the necessary condition for sustainability and it was indicating a strong form of sustainability over both periods.

In analyzing debt sustainability, all indicators should be considered, as there is no single one that can provide the right measure for sustainability. At this rate, Government may find it difficult to service its debt in the near future. The Government should try to remain below the agreed limits to leave room to maneuver in difficult times.

More generally, a serious note of caution is required when applying a debt target threshold to individual countries. No single threshold can reliably define the turning point at which a country's debt will prove unsustainable, as country-specific factors and circumstances beyond the debt ratio play important roles.

6.2 POLICY RECOMMENDATIONS

The finding of this study is that the current sovereign debt is sustainable. Accordingly, when the debt of a country is sustainable, it implies that the Government can continue to operate under its current fiscal policy without creating a rapidly growing debt to GDP ratio (i.e. the debt process is not explosive). For this situation to be sustained the following appropriate policy and recommendations are presented below.

- . The Government should try to **remain below the agreed limits** to leave room to maneuver in difficult times. Low and stable fiscal deficits are a necessity for the favorable long run prospects of a country, as well as for avoiding the short run macroeconomic ills of high inflation, high real interest rates, and real overvaluation.
- . **The Government should improve the primary balance/ GDP ratio** and this could be achieved through a combination of revenue increase and expenditure reducing measures. These would boost fiscal surplus, and help to sustain and possibly even reduce the Debt/GDP ratio in the long term.
- . **High real interest rates are bad for debt sustainability:** If the Namibian economy is hit with negative shocks and its real interest rate rises, it is hard to envisage that the economy will grow, and this reduces the ability of Government to service its debt.
- . **Improve utilization of project financing resources.** Borrowing has served as the engine for sustained economic growth in many high performing Asian Economies. However, what is undesirable is the raising of funds whose costs exceed the marginal return to investment. It is therefore important to improve the project feasibility assessment capacity and strengthen implementation and tracking systems within the public sector.
- . **Develop an optimal balance between External and Domestic Debt.** It is important to find the lowest possible funding source for different projects. Both debts can trigger economic crises; therefore, the cheapest way for financing should be always considered. The decision on whether to borrow externally or domestically depends on many factors including the relative interest rate on domestic and external debt.
- . **Enhance debt sustainability:** debt sustainability can only be maintained within a comprehensive fiscal framework. Very often, external imbalances are a result of fiscal imbalances; hence, fiscal consolidation including tax reform is a key factor in maintaining debt sustainability.
- . **Slow growth periods are bad for debt sustainability:** The authority must seek to pursue growth-enhancing strategies to ensure that the economy remains on a higher growth rate path.
- . **Sustainable fiscal position:** Prudent budgeting and reorienting of expenditures from nonproductive sectors to growth enhancing activities within a medium term would also help to achieve a sustainable fiscal position.

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APPENDIX

Table A1: Cointegration Test Results for Government Revenue and Expenditure

Sample(adjusted): 1992 2005
 Included observations: 14 after adjusting endpoints
 Trend assumption: Linear deterministic trend
 Series: Expenditure, Revenue
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test

Hypothesized		Trace	5 Percent	1 Percent
No. of CE(s)	Eigenvalue		Statistic	Critical Value
None **	0.7852	31.4465	18.17	23.46
At most 1 **	0.5074	9.9125	3.74	6.40

*(**) denotes rejection of the hypothesis at the 5%(1%) level

Trace test indicates 2 cointegrating equation(s) at both 5% and 1% levels

Hypothesized		Max-Eigen	5 Percent	1 Percent
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Critical Value
None **	0.7852	21.5339	16.87	21.47
At most 1 **	0.5073	9.9125	3.74	6.40

*(**) denotes rejection of the hypothesis at the 5%(1%) level

Max-eigenvalue test indicates 2 cointegrating equation(s) at both 5% and 1% levels

Unrestricted Cointegrating Coefficients (normalized by b *S11*b=I):

Expenditure	Revenue
-0.00676	0.00637
-0.00376	0.00573

Unrestricted Adjustment Coefficients (alpha):

D(Expenditure) 233.829 37.793
 D(Revenue) 53.785555 -109.8522

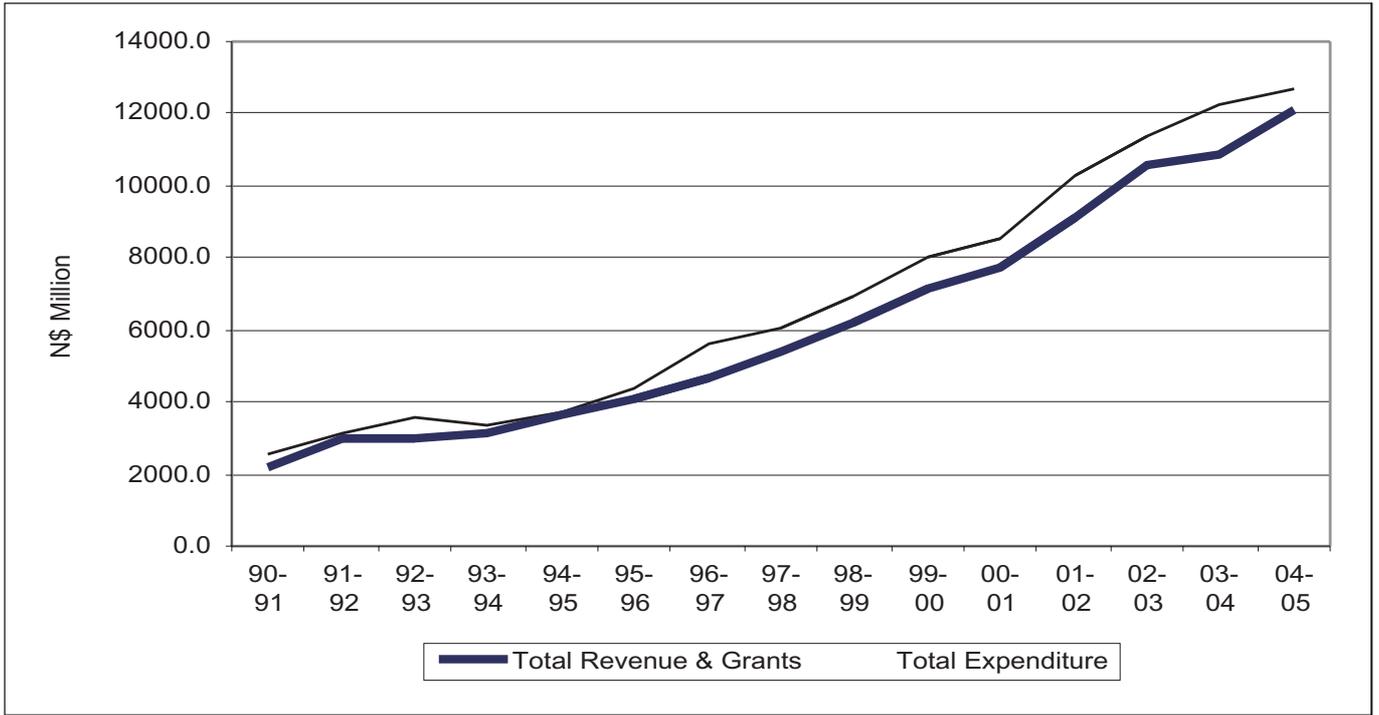
1 Cointegrating Equation(s): Log likelihood -178.6235

Normalized cointegrating coefficients (std.err. in parentheses)

Expenditure	Revenue
1	-0.9423
	0.0493

Source: Bank of Namibia

Chart A1 Revenue and Expenditure Plot (1990/91 -2004/05)



Source: BoN