**STATE COAT OF ARMS**

**(IMAGE)**

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Government of the XX State of Nigeria

Annual Debt Profile and Debt Sustainability Assessment

**As at DD/MM/20XX**

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**Abbreviations and Acronyms**

|  |  |
| --- | --- |
| BEPD | Budget and Economic Planning Directorate |
| BPS | Budget Policy Statement |
| DMA | Debt Management Act |
| DMO | Debt Management Office (of the Federal Government) |
| DMU | Debt Management Unit |
| DSA | Debt Sustainability Analysis |
| EFU | Economic and Fiscal Update |
| FAAC | Federation Account Allocation Committee |
| FRA | Fiscal Responsibility Act |
| FSP | Fiscal Strategy Paper |
| GDP | Gross Domestic Product |
| IDA | International Development Association |
| IGR | Internally Generated Revenue |
| IMF | International Monetary Fund |
| INT | Interest |
| MTDS | Medium Term Debt Strategy |
| OAG | Office of the Accountant General |
| PFM | Public Financial Management |
| PR | Principle |
| SEC | Securities and Exchange Commission |
| WB | World Bank |

Executive Summary

The objective of the debt profile analysis is to describe the state and nature of indebtedness of the XX State Government, as well as the long-term sustainability of its capital expenditures, in view of the planned future.

Historical debt data was obtained from the annual reports published by the Office of the Accountant General (OAG). Additional data, such as contractor’s arrears as well as outstanding gratuity and pension payments, were obtained separately from appropriate government officials. These were summarized in quarterly domestic debt reports prepared by the Debt Management Unit (DMU) for the Federal Debt Management Office (DMO), Abuja.

The debt analysis shows the following:

* The debt stock ratios in terms of their respective thresholds, especially with regards to external debts.
* The increase/decrease/stagnation in domestic debt in 20XX/20XX, mainly due to XXX.
* The increase/decrease/stagnation in external debt in 20XX/20XX, mainly due to XXX.
* External debt service ratios over the period are XX, mainly due to XXX.
* The ratio of the total debt service to the Federation Account Allocation Committee (FAAC) revenue of the previous year (a requirement of the Fiscal Sustainability Plan), in relation to its respective threshold.

The debt situation in XX State is (not) sustainable. Please elaborate further.

# XX State Public Debt Profile

## Background and Objectives

Debt financing is an integral and very important aspect of public financial management. Capital investments are often financed with debts from domestic or external sources. As part of the process to deepen medium term fiscal framework (Economic and Fiscal Update (EFU) - Fiscal Strategy Paper (FSP) - Budget Policy Statement (BPS) process, XX State Government (XSG) through Ministry of Planning and Budget (MoPB) is preparing a Debt ustainability Analysis (DSA). The objective is to promote conduct of periodic and more comprehensive DSA, in the face of the changing debt profile of the State.

Public debt profile analysis provides a review of the historical and current debt position of the State government, for the five years 20XX to 20XX. It shows the current indebtedness of the government, which may affect the government’s immediate debt financing options and is a critical factor in the government’s short and long-term debt strategy.

The specific tasks are as follows:

* Conduct desk review of documents/data on debt;
* Hold planning/sensitization meeting with key stakeholders;
* Develop XX State debt profile as at month 20XX;
* Prepare a Report detailing the quarterly debt data collection and debt profiling procedures for the State;
* Provide an indication of the state of debt sustainability of the State.

## Sources of Data

Historical debt data was obtained from the annual reports published by the Office of the Accountant General (OAG).

Additional data, such as contractor’s arrears as well as outstanding gratuity and pension payments, were obtained separately from appropriate government officials. These were summarized in quarterly domestic debt reports prepared by the State Debt Management Unit (DMU) for the Federal Debt Management Office (DMO), Abuja.

## The Five-Year Debt Data

The XX State’s internal and external debt data for the years 20XX to 20XX were compiled and entered into a debt profile template. The following shows the summary data:

Table 1: XX State’s Annual Debt Data Summary (20XX – 20XX)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

| State: | **XX State** | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **DEBT DATA SUMMARY (IN MILLION OF NAIRA)** | |  |  |  |  |  |
| **Type** | **Debt Categories** | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** |
| Naira to US$ Exchange Rates (End of Year) | | XX | XX | XX | XX | XX |
| **Debt Stocks** | Total Domestic Debt | XX | XX | XX | XX | XX |
| Total External Debt | XX | XX | XX | XX | XX |
| **Total Public Debt** | **XX** | **XX** | **XX** | **XX** | **XX** |
| **Debt Service** | Domestic Principal Repayments | XX | XX | XX | XX | XX |
| Domestic Interest Payments | XX | XX | XX | XX | XX |
| ***Total Domestic Debt Service*** | **XX** | **XX** | **XX** | **XX** | **XX** |
|  |  |  |  |  |  |  |
|  | Total External Principle Repayments | XX | XX | XX | XX | XX |
| Total External Interest Payments | XX | XX | XX | XX | XX |
| **Total External Debt Service (PR+INT)** | **XX** | **XX** | **XX** | **XX** | **XX** |
|  | **Grand Total Debt Service** | **XX** | **XX** | **XX** | **XX** | **XX** |
| Grand Total Principle Repayments | XX | XX | XX | XX | XX |
| Grand Total Interest Payments | XX | XX | XX | XX | XX |
|  |  |  |  |  |  |  |
| **Revenue** | All FAAC Revenue | XX | XX | XX | XX | XX |
| Internally Generated Revenue (IGR) | XX | XX | XX | XX | XX |
| Other Revenues / Grants | XX | XX | XX | XX | XX |
| **Total Revenue** | **XX** | **XX** | **XX** | **XX** | **XX** |

## The Debt Profile Ratios

After the data has been prepared and entered, the table below shows the debt profile ratios generated by the template, and the following observations can be made:

* The debt stock ratios are (not) within their respective thresholds.
* Over the past XX years, the debt stock ratios have risen/fallen/stagnated. This is due to XXX. The increase/decrease/stagnation in domestic debt is due to XXX. The increase/decrease/stagnation in external debt is due to XXX.
* Domestic debt servicing ratios are XXX. This is due to XXX.
* External debt service ratios are XXX. This is due to XXX.
* The total debt to the total revenue of previous 12 months ratio, required to show compliance with the Fiscal Sustainability Plan, is XXX.
* The ratio of the total debt service to the FAAC revenue of the previous 12 months is (not) within the threshold.

Table 2: Historical Public Debt Ratios (20XX – 20XX)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

| State: | **XX State** | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **PUBLIC DEBT PROFILE RATIOS (HISTORICAL)** | |  |  |  |  |  |
| **Debt Profile Ratios** | **Thresholds** | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** |
| **DEBT STOCK (SOLVENCY) RATIOS** | | | | | | |
| Domestic Debt/Total Revenue | **XX%** | XX% | XX% | XX% | XX% | XX% |
| External Debt/Total Revenue | **XX%** | XX% | XX% | XX% | XX% | XX% |
| **Total Debt/Total Revenue of the preceding year** | **XX%** | XX% | XX% | XX% | XX% | XX% |
| **SOURCE OF DEBT** | | | | | | |
| % Domestic Debt | N/A | **XX%** | **XX%** | **XX%** | **XX%** | **XX%** |
| % External Debt | N/A | **XX%** | **XX%** | **XX%** | **XX%** | **XX%** |
| **DEBT SERVICE (LIQUIDITY) RATIOS** | | | | | | |
| Total Debt Service / FAAC Revenue of the preceding year | **XX%** | XX% | XX% | XX% | XX% | XX% |
| External Debt Service/Total Revenue | **XX%** | XX% | XX% | XX% | XX% | XX% |
|  |  |  |  |  |  |  |
| Domestic Interest Payments/Total Revenue | **XX%** | XX% | XX% | XX% | XX% | XX% |
| Domestic Interest Payments/IGR | **XX%** | XX% | XX% | XX% | XX% | XX% |

## Debt Profile Issues

The domestic debt of XX State has increased/decreased/stagnated over the past XX years. The increase/decrease/stagnation in domestic debt in 20XX/20XX is due to XXX.

The external debt of XX State has increased/decreased/stagnated over the past XX years. The increase/decrease/stagnation in external debt in 20XX/20XX is due to XXX.

Immediate recommendation for the State is to XXX.

## Some Institutional Recommendations

### Debt and Revenue Data

The Debt Management Unit should maintain a quarterly summary of debt and revenue data, in the official template that has been agreed with the Ministry of Finance.

The summary data should be reconciled with the records in the OAG.

### Quarterly and Annual Debt Reports

The DMU should prepare, and distribute appropriately, the quarterly debt position reports.

Eventually, the DMU should be able to prepare an annual debt report which reports on the performance with regards to the State’s debt policies and strategy.

### Personnel

Insert comment of the structure and staffing of DMU. All staff need to be trained in the principles and practice of public debt management.

Among other skills, DMU staff need to be computer literate, and should be able to comfortably use Microsoft Word and Excel.

# MTDS Template and DSA

The analysis uses the Medium-Term Debt Strategy (MTDS) template of the World Bank (WB)/ International Monetary Fund (IMF). Although designed for sovereign governments, it can be adapted for a state, in particular by adding revenue-based debt sustainability rather than the Gross Domestic Product (GDP) based debt thresholds.

The template allows the user to compare various sources of long and short-term loans, both external and domestic. It is able to assess the relative concessionality of the sources of credit, and it measures the risks of various instruments, such as exchange rate, interest rate, and refinance risks.

## Sources of Debt Financing

The sources of loans of a state are constrained by various laws and regulations. The provisions of the Nigerian Constitution, the Fiscal Responsibility Act 2007 (FRA), the Debt Management Act 2003 (DMA), regulate that a state can only obtain external loans through the Federal Government, and the loans would normally be required to be concessional loans from bilateral and multilateral international agencies.

While non-concessional borrowing from the domestic capital market is possible, there are also some restrictions. The DMO Act provides (among others) internal loan to be raised from the Capital Market, but it must conform to the requirements of the Securities and Exchange Commission (SEC). This could mean, for instance, that the state may not be able to use longer-term instruments which could be cheaper.

The MTDS template provides a worksheet for adding various sources of debt (“Instrument Types”), as shown below.

Table 3: Set of Debt Instrument Types and their Features

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **DSA PARAMETERS (SET BY USERS)** | |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **EXCH RATES AT END OF BASE YEAR** | | |  |  |  |  |
| **ONLY 5 FOREIGN CURRENCIES: (All foreign loans must be denominated in one of these 5 currencies.)** | | | | | | |
| USD | 304.50 | US Dollar |  | **(USD must be in this first row)** | | |
| AUA | 429.73 | African Unit of Account |  |  |  |  |
| EUR | 350.50 | Euro |  |  |  |  |
| GBP | 404.99 | British Pound |  |  |  |  |
| SDR | 426.30 | IMF Special Drawing Rights | | | | |
|  |  |  |  |  |  |  |
| **DEBT PROFILE IN THE BASE YEAR** | |  |  |  |  |  |
| **CREDITORS & CREDITOR TYPES** | **LOAN CURRENCY** | **Base Year DOD (in Millions of Loan Currency)** | **Maturity (years)** | **Grace Period (years)** | **Nominal Int Rate** | **Concessional/ Market** |
| Mult\_Creditor1 | SDR | 40.00 | 40 | 10 | 0.75% | Concessional |
| Mult\_Creditor2 | AUA | 10.00 | 30 | 10 | 1.50% | Concessional |
| Mult\_Others1 | USD | 0.00 | 20 | 5 | 1.50% | Concessional |
| Mult\_Others2 | USD | 0.00 | 20 | 5 | 2.00% | Concessional |
| Bilateral\_1 | USD | 20.00 | 20 | 2 | 2.00% | Concessional |
| Bilateral\_2 | USD | 0.00 | 20 | 2 | 3.00% | Concessional |
| Bilateral\_Others | USD | 0.00 | 20 | 2 | 5.00% | Concessional |
| Foreign\_Comm | USD | 0.00 | 10 | 2 | 12.00% | Mkt |
| Comm\_Banks | NGN | 0.00 | 3 | 0 | 15.00% | Mkt |
| FG\_SUPPORT | NGN | 43,300.00 | 20 | 2 | 8.00% | Concessional |
| PAY\_ARREARS | NGN | 75,200.00 | 3 | 0 | 0.00% | Concessional |
| 3Yr Bond | NGN | 0.00 | 3 | 0 | 20.00% | Mkt |
| 5Yr Bond | NGN | 0.00 | 5 | 0 | 18.00% | Mkt |
| 10Yr Bond | NGN | 0.00 | 10 | 0 | 15.00% | Mkt |
| 20Yr Bond | NGN | 0.00 | 20 | 0 | 14.00% | Mkt |
|  |  |  |  |  |  |  |

The table shows the instrument types, which can be a specific creditor, such as International Development Association (IDA), or a creditor type, such as bilateral creditors or bonds. Each instrument type has a number of features which determine its attractiveness, such as the grace period, the maturity period, and the nominal interest rate.

In any particular simulation, the set of instrument types is fixed. However, the inclusion of a particular instrument type in this set does not mean that the instrument type must be included in a borrowing policy.

## The Debt Strategy Worksheet

A borrowing policy selects a set of instrument types (or creditors) in a “borrowing strategy”, as shown below.

Table 4: Example - A Debt Strategy / Selected Debt Instruments (Percentages)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Strategy 1** | The historical mix of creditors | | |  |  |  |  |  |  |
|  | STATE: | XX State |  |  |  |  |  |  |  |  |
|  | **Strategy** |  | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** |
| **Mult\_Creditor1** | SDR\_1 | External | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** |
| **Mult\_Creditor2** | AUA\_2 | External | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** |
| **Mult\_Others1** | USD\_3 | External | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** |
| **Mult\_Others2** | USD\_4 | External | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** |
| **Bilateral\_1** | USD\_5 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_2** | USD\_6 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_Others** | USD\_7 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Foreign\_Comm** | USD\_8 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Comm\_Banks** | NGN\_9 | Domestic | **50%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
| **FG\_SUPPORT** | NGN\_10 | Domestic | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **PAY\_ARREARS** | NGN\_11 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **3Yr Bond** | NGN\_12 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **5Yr Bond** | NGN\_13 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **10Yr Bond** | NGN\_14 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **20Yr Bond** | NGN\_15 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
|  | **Total** | **External** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
|  | **Total** | **Domestic** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

The bottom half of the table shows the instrument types selected as percentages. The strategy has three dimensions (the year, external/domestic, and the selected instrument types). For each year, you indicate the proportions of new borrowing that should be from external or domestic sources, and within the external and domestic, you select the instrument types by assigning percentages.

The top half of the table calculates the actual proportion of the new borrowing for the year for each instrument type. “New borrowing” means the disbursement or drawdown for the year. So new disbursements for existing loan agreements are considered new borrowing. This means that actual new loan agreements (that is their actual disbursements) must take into account still disbursing old loan agreements.

## Debt Strategy Simulations

### Establishing a meaningful baseline scenario

In order to produce a meaningful baseline, some financial policy decisions were assumed in the baseline scenario. In the first few years:

1. XXX
2. XXX
3. XXX

Table 5: Baseline (capital expenditure)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **I. CAPTAL EXPENDITURE PLAN (MAIN REASON FOR NEW BORROWINGS)** | | | |  |
|  | | STATE: | XX State |  |
|  |  | **ALL AMOUNTS ARE IN MILLIONS OF LOCAL CURRENCY** | | |
| BASE YEAR | | **20XX** |  |  |
|  |  |  |  |  |
| ***MACRO-ECONOMIC, REVENUE, & FISCAL PARAMETERS*** | | | | |
| Annual Local Currency Depreciation | | 1.00% | Relative to the main loan currencies | |
| **GDP (of Base Year)** | | 3,000,000 | Local currency (in millions) | |
| **Projected GDP Growth Rate** | | 5.00% |  |  |
|  |  |  |  |  |
| Total Revenue (inc grants) | | 116,000 | 3.00% | **ANNUAL TOTAL REV GROWTH** |
| FAAC (% of Total Revenue) | | 75.00% |  |  |
| Recur Expenditure (exc. Int & Princ) | | 49,744 | 2.00% | **ANNUAL RECUR EXP GROWTH** |
|  |  | **ALL AMOUNTS ARE IN MILLIONS OF LOCAL CURRENCY** | | |
| **CAPITAL EXPENDITURE PLAN (The Main Reason for New Long-term Borrowings)** | | | | |
| Capital Expenditure: Start Amount | | 75,000 | 5.00% | **ANNUAL INCREASE** |
| Balance Capital Reserve Fund | | 5,000 | 1,500 | **ANNUAL CAP RESERVE USAGE** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. DSA SIMULATION RUN** | |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  | |  |
| **RUN ALL THE FOUR STRATEGIES** | |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  | |  |
| ***The projected outcomes for each strategy are shown below.*** | | | | | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  | |  |
| ***ALL AMOUNTS ARE IN MILLIONS OF LOCAL CURRENCY*** | | | | | |  |  |  | |  |
| **2. PROJECTED ANNUAL CAPITAL EXPENDITURE** | | | | |  |  |  |  | |  |
| 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | **TOTAL NEW CAPITAL EXP.** | | |
|  | 78,750.00 | 86,821.88 | 91,162.97 | 95,721.12 | 100,507.17 | 105,532.53 | 110,809.16 | **751,992.32** | **NGN** | |
|  |  |  |  |  |  |  |  |  | MILLIONS | |
| **3. PROJECTED GROSS FINANCING NEED (ASSUMED AS NEW DEBT)** | | | | | | |  |  |  | |
| 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | **TOTAL NEW DEBT** | | |
|  | 20,045.30 | 24,362.50 | 18,758.98 | 20,852.18 | 22,577.28 | 24,442.58 | 26,456.85 | **180,505.64** | **NGN** | |
|  |  |  |  |  |  |  |  |  | MILLIONS | |

The annual new capital expenditure, starting from 75 billion Naira and increasing at the rate of 5% per annum, produces the additional **new debts** of just over 180 billion Naira.

### Assessing the Four Debt Strategies

The MTDS template allows for defining four strategies, which are described below.

#### Debt Strategy 1 – Short-term bonds added

This strategy avoids a radical departure from the current implicit borrowing policy of the State. All external debt is from multilateral donors.

As shown in the table below, the new element in this scenario is the addition of a 3-year bond issue. The implementation of this debt strategy requires significant efforts by the State government. To issue a bond in the securities market, State officials have to coordinate with various agencies of the Federal Government, mainly the Ministry of Finance, the DMO, and the SEC. Projects have to be well-defined and their feasibility studies done, so as to present convincing cost-benefit analyses.

Table 6: Strategy 1 – The Selected Instruments

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Strategy 1** | The historical mix of creditors | | |  |  |  |  |  |  |
|  | STATE: | XX State |  |  |  |  |  |  |  |  |
|  | **Strategy** |  | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** |
| **Mult\_Creditor1** | SDR\_1 | External | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** | **80%** |
| **Mult\_Creditor2** | AUA\_2 | External | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** | **8%** |
| **Mult\_Others1** | USD\_3 | External | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** | **11%** |
| **Mult\_Others2** | USD\_4 | External | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** | **1%** |
| **Bilateral\_1** | USD\_5 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_2** | USD\_6 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_Others** | USD\_7 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Foreign\_Comm** | USD\_8 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Comm\_Banks** | NGN\_9 | Domestic | **50%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
| **FG\_SUPPORT** | NGN\_10 | Domestic | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **PAY\_ARREARS** | NGN\_11 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **3Yr Bond** | NGN\_12 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **5Yr Bond** | NGN\_13 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **10Yr Bond** | NGN\_14 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **20Yr Bond** | NGN\_15 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
|  | **Total** | **External** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
|  | **Total** | **Domestic** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

**The Debt Ratios for Strategy 1**

The following table shows the debt sustainability ratios produced by Debt Strategy 1.

Table 7: Strategy 1 – Simulation Results

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 1:** |  | **Description:** | **The historical mix of creditors** | | |  |  |  |  |  |  |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,489.68 | 178,796.18 | 209,096.63 | 242,706.89 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 19,843.79 | 24,562.31 | 29,554.34 | 34,101.07 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **116.03%** | **132.96%** | **150.96%** | **170.12%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **20.27%** | **24.35%** | **28.45%** | **31.87%** |

#### Debt Strategy 2 – Bilateral loans to be sought

Strategy 2 varies from Strategy 1 by seeking to develop bilateral donors/creditors. Bilateral loans would normally be fairly concessional, although as external debt instruments, they come with exchange rate risks. Here again much effort would be required from State government officials in order to properly utilize bilateral loans. In particular, some bilateral donors could go along with slow project implementation, risking the possibility of uncompleted projects, with large amounts of debt that still have to be paid back.

Table 8: Strategy 2 – The Selected Instruments

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Strategy 2** | More bilateral debt (correspondingly reducing the multilateral debt component) | | | | | | | | |
|  | STATE: | XX State |  |  |  |  |  |  |  |  |
|  | **Strategy** |  | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** |
| **Mult\_Creditor1** | SDR\_1 | External | **80%** | **80%** | **80%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **Mult\_Creditor2** | AUA\_2 | External | **8%** | **8%** | **8%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others1** | USD\_3 | External | **11%** | **11%** | **11%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others2** | USD\_4 | External | **1%** | **1%** | **1%** | **20%** | **20%** | **20%** | **20%** | **20%** |
| **Bilateral\_1** | USD\_5 | External | **0%** | **0%** | **0%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **Bilateral\_2** | USD\_6 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_Others** | USD\_7 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Foreign\_Comm** | USD\_8 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Comm\_Banks** | NGN\_9 | Domestic | **50%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
| **FG\_SUPPORT** | NGN\_10 | Domestic | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **PAY\_ARREARS** | NGN\_11 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **3Yr Bond** | NGN\_12 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **5Yr Bond** | NGN\_13 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **10Yr Bond** | NGN\_14 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **20Yr Bond** | NGN\_15 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
|  | **Total** | **External** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
|  | **Total** | **Domestic** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

**The Debt Ratios for Strategy 2**

Compared to Debt Strategy 1, both the debt stocks and debt service ratios are slightly worse. This is due to the substitution of bilateral instruments (which would be less concessional) for multilateral instruments.

Assuming the State can develop the bilateral sources of debt financing, the slightly higher cost of debt could be worth it. A larger pool of donors/credit sources could make it easier to plan for new projects.

Table 9: Strategy 2 – Simulation Results

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 2:** | **Description:** | **More bilateral debt (correspondingly reducing the multilateral debt component)** | | | | | | |  |  |
| **YEAR** | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,713.40 | 179,565.54 | 210,715.58 | 245,558.38 |
| Total Debt Service (TDS) |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 20,067.52 | 25,144.11 | 30,780.90 | 36,224.88 |
| **Debt/Prev Yr Total Rev** | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **116.20%** | **133.53%** | **152.13%** | **172.12%** |
| **TDS/Prev Yr FAAC** | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **20.49%** | **24.93%** | **29.63%** | **33.86%** |

#### Debt Strategy 3 – slightly longer-term bonds added

In strategy 3, the State government would try to access not just 3-year bonds but also 5-year bonds. The longer-term financing should be cheaper, and the wider repayment spread could benefit certain projects. Projects that produce early economic impact could even contribute to their repayment.

Table 10: Strategy 3 – The Selected Instruments

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Strategy 3** | Switching to longer term domestic debt | | | | | | | | |
|  | STATE: | XX State |  |  |  |  |  |  |  |  |
|  | **Strategy** |  | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** |
| **Mult\_Creditor1** | SDR\_1 | External | **80%** | **80%** | **80%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **Mult\_Creditor2** | AUA\_2 | External | **8%** | **8%** | **8%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others1** | USD\_3 | External | **11%** | **11%** | **11%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others2** | USD\_4 | External | **1%** | **1%** | **1%** | **20%** | **20%** | **20%** | **20%** | **20%** |
| **Bilateral\_1** | USD\_5 | External | **0%** | **0%** | **0%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **Bilateral\_2** | USD\_6 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Bilateral\_Others** | USD\_7 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Foreign\_Comm** | USD\_8 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Comm\_Banks** | NGN\_9 | Domestic | **50%** | **100%** | **100%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **FG\_SUPPORT** | NGN\_10 | Domestic | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **PAY\_ARREARS** | NGN\_11 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **3Yr Bond** | NGN\_12 | Domestic | **0%** | **0%** | **0%** | **50%** | **50%** | **50%** | **50%** | **50%** |
| **5Yr Bond** | NGN\_13 | Domestic | **0%** | **0%** | **0%** | **50%** | **50%** | **50%** | **50%** | **50%** |
| **10Yr Bond** | NGN\_14 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **20Yr Bond** | NGN\_15 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
|  | **Total** | **External** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
|  | **Total** | **Domestic** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

**The Debt Ratios for Strategy 3**

Compared with Strategy 1, there is not much advantage of the longer maturity bonds, except that they may be a better fit for long-term projects, by reducing the times the government has to go back to the market to borrow (the refinance risk).

Table 11: Strategy 3 – Simulation Results

((REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description:** | **Switching to longer term domestic debt** | | | | | |  | |  | |  | |  | |  | |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | | 20XX+4 | | 20XX+5 | | 20XX+6 | | 20XX+7 | | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | | 130,559.02 | | 134,475.79 | | 138,510.07 | | 142,665.37 | | 146,945.33 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | | 97,919.27 | | 100,856.84 | | 103,882.55 | | 106,999.03 | | 110,209.00 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | | 127,431.34 | | 151,650.13 | | 179,462.22 | | 210,709.06 | | 246,195.43 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | | 14,792.03 | | 19,046.23 | | 22,807.17 | | 26,842.27 | | 33,021.03 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | | **100.53%** | | **116.15%** | | **133.45%** | | **152.13%** | | **172.57%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | | **15.56%** | | **19.45%** | | **22.61%** | | **25.84%** | | **30.86%** |

#### Debt Strategy 4 – more bilateral loans and longer-term bonds

Strategy 4 is the most ambitious, seeking up to 20-year bond issuance.

Table 12: Strategy 4 – The Selected Instruments

((REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Strategy 4** | Even longer-term domestic debt | | | | | | | | |
|  | STATE: | XX State |  |  |  |  |  |  |  |  |
|  | **Strategy** |  | **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** |
| **Mult\_Creditor1** | SDR\_1 | External | **80%** | **80%** | **80%** | **20%** | **20%** | **20%** | **20%** | **20%** |
| **Mult\_Creditor2** | AUA\_2 | External | **8%** | **8%** | **8%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others1** | USD\_3 | External | **11%** | **11%** | **11%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Mult\_Others2** | USD\_4 | External | **1%** | **1%** | **1%** | **10%** | **10%** | **10%** | **10%** | **10%** |
| **Bilateral\_1** | USD\_5 | External | **0%** | **0%** | **0%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **Bilateral\_2** | USD\_6 | External | **0%** | **0%** | **0%** | **20%** | **20%** | **20%** | **20%** | **20%** |
| **Bilateral\_Others** | USD\_7 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Foreign\_Comm** | USD\_8 | External | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **Comm\_Banks** | NGN\_9 | Domestic | **50%** | **100%** | **100%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **FG\_SUPPORT** | NGN\_10 | Domestic | **50%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **PAY\_ARREARS** | NGN\_11 | Domestic | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** |
| **3Yr Bond** | NGN\_12 | Domestic | **0%** | **0%** | **0%** | **30%** | **30%** | **30%** | **30%** | **30%** |
| **5Yr Bond** | NGN\_13 | Domestic | **0%** | **0%** | **0%** | **25%** | **25%** | **25%** | **25%** | **25%** |
| **10Yr Bond** | NGN\_14 | Domestic | **0%** | **0%** | **0%** | **25%** | **25%** | **25%** | **25%** | **25%** |
| **20Yr Bond** | NGN\_15 | Domestic | **0%** | **0%** | **0%** | **20%** | **20%** | **20%** | **20%** | **20%** |
|  | **Total** | **External** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
|  | **Total** | **Domestic** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

**The Debt Ratios for Strategy 4**

This strategy (lengthening the bond tenors) further improves the sustainability ratios below the thresholds.

Table 13: Strategy 4 – Simulation Results

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 4:** | |  | **Description:** | **Even longer-term domestic debt** | | |  |  |  |  |  |  |
| **YEAR** | **Thresholds** | | | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | | | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue |  | | | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) |  | | |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,367.99 | 178,626.29 | 209,361.59 | 244,424.42 |
| Total Debt Service (TDS) |  | | |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 17,590.51 | 19,514.58 | 21,801.41 | 26,856.35 |
| **Debt/Prev Yr Total Rev** | **250.00%** | | |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **115.94%** | **132.83%** | **151.15%** | **171.33%** |
| **TDS/Prev Yr FAAC** | **40.00%** | | |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **17.96%** | **19.35%** | **20.99%** | **25.10%** |

## DSA Stress Testing

Stress testing helps to identify the risks and vulnerabilities of the Government’s current debt profile as well as debt sustainability, in view of planned future debt management policies and borrowing strategy.

The MTDS template provides means of applying revenue and exchange rate shocks (as shown in the table below), so as to see their effects on the various borrowing strategies.

Table 14: Simulation Parameters for Stress Testing

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***FOR SIMULATING REVENUE AND EXCHANGE RATES SHOCKS*** | | | | | |  |  |  |
| **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** | **20XX+8** |
|  | Significant reduction in revenue | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED TOTAL REVENUES** | | |  |  |  |  |  |
| 116,000 | 119,480 | 123,064 | 126,756 | 130,559 | 134,476 | 138,510 | 142,665 | 146,945 |
|  | Special depreciation of the local currency | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED LOCAL CURRENCY DEVALUATION** | | | | |  |  |  |
|  | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% |

The above table shows 0% values for unusual changes in either revenues or exchange rates. This means that each year’s value will go as expected, which for exchange rates means a small and regular annual depreciation of 1% of the local currency. We have already seen the results of this “optimistic” scenario in section 2.C.2 above.

### Naira Devaluation (Exchange Rate Shock)

However, over the X years of the planning horizon, it’s quite possible that some unusual economic event could happen. So, let’s first look at the effects of a one-off 30% devaluation of the Naira in, say 20XX+4, just after three years into the planning period.

Table 15: Simulation with 30% depreciation of the Naira in 20XX+4

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***FOR SIMULATING REVENUE AND EXCHANGE RATES SHOCKS*** | | | | | |  |  |  |
| **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** | **20XX+8** |
|  | Significant reduction in revenue | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED TOTAL REVENUES** | | |  |  |  |  |  |
| 116,000 | 119,480 | 123,064 | 126,756 | 130,559 | 134,476 | 138,510 | 142,665 | 146,945 |
|  | Special depreciation of the local currency | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 30.00% | 0.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED LOCAL CURRENCY DEVALUATION** | | | | |  |  |  |
|  | 1.00% | 1.00% | 1.00% | 30.00% | 1.00% | 1.00% | 1.00% | 1.00% |

To get an idea of the effects of these shocks, four tables will be placed, side by side:

1. The results of Strategy 1 without the shock;
2. The results of Strategy 1 after applying the shock;
3. The results of Strategy 4 without the shock; and
4. The results of Strategy 4 after applying the shock.

Table 16: Strategy 1 – Simulation Results (without shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 1:** |  | **Description:** | **The historical mix of creditors** | | |  |  |  |  |  |  |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,489.68 | 178,796.18 | 209,096.63 | 242,706.89 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 19,843.79 | 24,562.31 | 29,554.34 | 34,101.07 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **116.03%** | **132.96%** | **150.96%** | **170.12%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **20.27%** | **24.35%** | **28.45%** | **31.87%** |

Table 17: Strategy 1 – Simulation Results (with exchange rate shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 1:** |  | **Description:** | **The historical mix of creditors** | | |  |  |  |  |  |  |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 148,785.33 | 173.282.57 | 201,062.18 | 231,860.40 | 265,992.73 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 15,197.60 | 20,353.53 | 25,190.84 | 30,345.56 | 35,022.59 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **117.38.%** | **132.72%** | **149.52%** | **167.40%** | **186.45%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.99%** | **20.79%** | **24.98%** | **29.21%** | **32.73%** |

The effect of a 30% Naira devaluation shock in 20XX+4 is to push the debt stock ratio by 20XX+8 to 186.45% from 170.12% without the devaluation. The effect on debt service is minimal. With or without the exchange rate shock, this strategy produces ratios that are well within the thresholds.

Table 18: Strategy 4 – Simulation Results (without shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 4:** | |  | **Description:** | **Even longer-term domestic debt** | | |  |  |  |  |  |  |
| **YEAR** | **Thresholds** | | | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | | | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue |  | | | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) |  | | |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,367.99 | 178,626.29 | 209,361.59 | 244,424.42 |
| Total Debt Service (TDS) |  | | |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 17,590.51 | 19,514.58 | 21,801.41 | 26,856.35 |
| **Debt/Prev Yr Total Rev** | **250.00%** | | |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **115.94%** | **132.83%** | **151.15%** | **171.33%** |
| **TDS/Prev Yr FAAC** | **40.00%** | | |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **17.96%** | **19.35%** | **20.99%** | **25.10%** |

Table 19: Strategy 4 – Simulation Results (with exchange rate shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 4:** | |  | **Description:** | **Even longer-term domestic debt** | | |  |  |  |  |  |  |
| **YEAR** | **Thresholds** | | | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | | | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue |  | | | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) |  | | |  | 76,165.07 | 90,192.37 | 106,991.40 | 148,785.33 | 173,159.16 | 200,889.89 | 232,129.11 | 267,735.27 |
| Total Debt Service (TDS) |  | | |  | 11,536.42 | 15,196.86 | 18,833.96 | 15,197.60 | 18,068.46 | 20,071.76 | 22,481.07 | 27,667.25 |
| **Debt/Prev Yr Total Rev** | **250.00%** | | |  | **65.66%** | **75.49%** | **86.94%** | **117.38%** | **132.63&** | **149.39%** | **167.59%** | **187.67%** |
| **TDS/Prev Yr FAAC** | **40.00%** | | |  | **13.26%** | **16.96%** | **20.41%** | **15.99%** | **18.45%** | **19.90%** | **21.64%** | **25.86%** |

With Strategy 4, the effects of the 30% Naira devaluation are broadly similar, and the ratios are also well within the thresholds. Just as in the no-shock scenario, Strategy 4 performs better on the ratios.

### Sharp Drop in Revenue

Another possible unusual event (shock) to consider is a one-off 25% reduction of the annual revenue, say in the year 20XX+5.

Table 20: Simulation with 25% reduction of the annual revenue in 20XX+5

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***FOR SIMULATING REVENUE AND EXCHANGE RATES SHOCKS*** | | | | | |  |  |  |
| **20XX** | **20XX+1** | **20XX+2** | **20XX+3** | **20XX+4** | **20XX+5** | **20XX+6** | **20XX+7** | **20XX+8** |
|  | Significant reduction in revenue | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 0.00% | 25.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED TOTAL REVENUES** | | |  |  |  |  |  |
| 116,000 | 119,480 | 123,064 | 126,756 | 130,559 | 97,919 | 100,857 | 103,883 | 106,999 |
|  | Special depreciation of the local currency | | | |  |  |  |  |
|  | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
|  | **PROJECTED LOCAL CURRENCY DEVALUATION** | | | | |  |  |  |
|  | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% | 1.00% |
|  |  |  |  |  |  |  |  |  |

Table 21: Strategy 1 – Simulation Results (without shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 1:** |  | **Description:** | **The historical mix of creditors** | | |  |  |  |  |  |  |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,489.68 | 178,796.18 | 209,096.63 | 242,706.89 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 19,843.79 | 24,562.31 | 29,554.34 | 34,101.07 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **116.03%** | **132.96%** | **150.96%** | **170.12%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **20.27%** | **24.35%** | **28.45%** | **31.87%** |

Table 22: Strategy 1 – Simulation Results (with revenue shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 1:** |  | **Description:** | **The historical mix of creditors** | | |  |  |  |  |  |  |
| **YEAR** | | **Thresholds** | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | | **NGN** | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 |
| FAAC Revenue | |  | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 73,439.45 | 75,642.63 | 77,911.91 | 80,249.27 |
| Total Debt Stocks (Debt) | |  |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 188,046.20 | 256,239.42 | 331,242.87 | 413,397.23 |
| Total Debt Service (TDS) | |  |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 19,843.79 | 33,705.77 | 48,948.12 | 65,573.51 |
| **Debt/Prev Yr Total Rev** | | **250.00%** |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **144.03%** | **261,68%** | **328.43%** | **397.95%** |
| **TDS/Prev Yr FAAC** | | **40.00%** |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **20.27%** | **45.90%** | **64.71%** | **84.16%** |

Table 23: Strategy 4 – Simulation Results (without shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 4:** | |  | **Description:** | **Even longer-term domestic debt** | | |  |  |  |  |  |  |
| **YEAR** | **Thresholds** | | | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | | | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 134,475.79 | 138,510.07 | 142,665.37 | 146,945.33 |
| FAAC Revenue |  | | | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 | 110,209.00 |
| Total Debt Stocks (Debt) |  | | |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 151,367.99 | 178,626.29 | 209,361.59 | 244,424.42 |
| Total Debt Service (TDS) |  | | |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 17,590.51 | 19,514.58 | 21,801.41 | 26,856.35 |
| **Debt/Prev Yr Total Rev** | **250.00%** | | |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **115.94%** | **132.83%** | **151.15%** | **171.33%** |
| **TDS/Prev Yr FAAC** | **40.00%** | | |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **17.96%** | **19.35%** | **20.99%** | **25.10%** |

Table 24: Strategy 4 – Simulation Results (with revenue shock)

(REPLACE TABLE BELOW WITH TABLE FROM MS EXCEL TEMPLATE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Strategy 4:** | |  | **Description:** | **Even longer-term domestic debt** | | |  |  |  |  |  |  |
| **YEAR** | **Thresholds** | | | 20XX | 20XX+1 | 20XX+2 | 20XX+3 | 20XX+4 | 20XX+5 | 20XX+6 | 20XX+7 | 20XX+8 |
| Total Revenue | **NGN** | | | 116,000.00 | 119,480.00 | 123,064.40 | 126,756.33 | 130,559.02 | 97,919.27 | 100,856.84 | 103,882.55 | 106,999.03 |
| FAAC Revenue |  | | | 87,000.00 | 89,610.00 | 92,298.30 | 95,067.25 | 97,919.27 | 73,439.45 | 75,642.63 | 77,911.91 | 80,249.27 |
| Total Debt Stocks (Debt) |  | | |  | 76,165.07 | 90,192.37 | 106,991.40 | 127,431.34 | 187,924.51 | 255,959.32 | 331,548.35 | 416,148.02 |
| Total Debt Service (TDS) |  | | |  | 11,536.42 | 15,196.86 | 18,833.96 | 14,792.03 | 17,590.51 | 25,836.56 | 34,917.01 | 48,551.77 |
| **Debt/Prev Yr Total Rev** | **250.00%** | | |  | **65.66%** | **75.49%** | **86.94%** | **100.53%** | **143.94%** | **261.40%** | **328.73%** | **400.59%** |
| **TDS/Prev Yr FAAC** | **40.00%** | | |  | **13.26%** | **16.96%** | **20.41%** | **15.56%** | **17.96%** | **35.18%** | **46.16%** | **62.32%** |

Analysis.

## Summary and Conclusions

### Suggestions