KADUNA STATE

2020 DEBT SUSTAINABILITY ANALYSIS (DSA)

December, 2020

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CHAPTER ONE

INTRODUCTION

1.1 Background

The Debt Sustainability Analysis (DSA) report is mainly a detailed analysis of debt sustainability profile of Kaduna State. It is a key component of fiscal strategy that outlines capacity for additional financing through borrowings. Since debt has become a major part of public finance structure, a critical analysis is needed to ascertain the possibility of its existence or otherwise, in the budgeting system and public expenditure.

This report covers a period of 2015-2019, analysing trends and pattern of public finances, and evaluate the debt sustainability for a period of 2020-2029. The analysis also highlights recent trends in revenue, expenditure, and the related policies adopted by the state. A debt sustainability assessment is conducted, including scenario and sensitivity analysis, in order to evaluate the prospective performance of the State's public finances.

1.2 Summary of Findings

Public Debt has increased significantly over the last two years, particularly foreign debt stocks, with the proceeds being used to fund significant and important capital investment. These new debt drawdowns have largely been on concessional facilities like the World Bank, tipping the debt portfolio towards foreign debt. 2020 and 2021, the former certainly impacted by COVID-19 and the latter likely to suffer from second wave and/or legacy challenges and will likely result in significant increases in borrowing.

These borrowing are likely to move Kaduna State above the Debt to Revenue ratio of 200% by the end of 2021, but all other ratios (including Debt to GDP and Debt Service to Revenue), remain untroubled. As with Federal Government, the issue of Debt to Revenue is more a revenue issue that debt, and there are positive movements in this respect.

Furthermore, over the medium term, given revenue projections (which are very prudent from a Federation Account Allocation Committee (FAAC) perspective), prudent management of recurrent cost and at least maintenance of the current (2021) levels of Capital Expenditure, Kaduna will significantly reduce its debt burdens under the liquidity and solvency lenses, and the baseline shows a rebalancing of the Domestic: Foreign ratio and movements to longer maturity in the domestic debt market.

The Baseline and shocks simulated in section 4 of this report show that Kaduna State, given the trajectories presented, should maintain within threshold ratios under most of the individual shocks, and there is also possibility for additional borrowing compared to this scenario, particularly if revenue reforms at Federal and State level continue to progress.

1.3 Overall Results

The Kaduna State Government target on Internally Generated Revenue (IGR) is to be able to fund all recurrent and even part of other expenditure so as to set its FAAC and Grants for infrastructural development. The increasing generation and collection of IGRs from 2015 to date is a clear indication and direction that Kaduna state is within a comfortable zone to debt sustainability/threshold considering the ratios of debt to revenue, GDP, etc. Furthermore, the State urban renewal program is a deliberate strategy in providing basic infrastructure to attracting foreign and local investors which is undoubtedly set to expand on the tax base and increase IGR.

From the foregoing therefore, and the charts indicators arising from the data on the DSA template which is a true reflection of the State's position has placed the State in a very comfortable position in terms of debt sustainability and further reasonable borrowing plans.

CHAPTER TWO

KADUNA STATE FISCAL AND DEBT FRAMEWORK

2.1 Fiscal Reforms

Over the last Five years, Kaduna State Government introduced a five-year plan, 2016-2020, to restore the State to its former glory. in order to realise this vision, a strategic framework was initiated for effective resource projections, prioritization of expenditure and an implementation plan to deliver results and monitor progress. For this purpose, revenues were projected at N124B per annum and expenditure estimated at N638.7B. The plan thus intends to leverage on innovative sources of financing and partnerships with the private sector to accelerate progress. As part of the state initiative for additional funding, N800B was targeted for PPP in agro-allied industries, railway and road transport, Hospitality and retail sectors.

Kaduna State has passed a number of new / revised laws related to Public Financial Management over the last five years, and performed particularly well in the 2018 World Bank State Fiscal Transparency, Accountability and Sustainability (SFTAS) Annual Performance Assessment (APA).

2.2 2021-2023 MTEF and 2020 Budget

Kaduna State has in the last five years institutionalised preparation of Medium-Term Expenditure Framework (MTEF). The document serves as a tool for multi-year fiscal Planning and Budget formulation process aimed at enabling the State Government to realistically set fiscal targets and effectively allocate resources to strategic priorities Key elements of the MTEF are the Economic and Fiscal Update (EFU), Fiscal Strategy Paper (FSP) and Budget Policy Statement (BPS). The latest edition of the MTEF covers the period 2021-2023 and is referenced later in this report.

The EFU provides economic and fiscal analyses which form the basis for the budget planning process. It is aimed primarily at guiding policy and lawmakers in the State Government. The EFU also provides an assessment of budget performance (both historical and current) and identifies significant Global, National and State level factors affecting implementation. The FSP determines the resources available to fund Government programs and projects from a fiscally sustainable perspective. The BPS states the overarching policy goals that will guide the Government's budget decisions and how the budget accords with the government’s short-term intentions. It also states any changes to the government’s long and short-terms fiscal objectives and assesses how changes in the long-term fiscal objectives and short-term fiscal intentions situates with the principles of responsible fiscal management. As a principle, the MTEF only recognises approved budget figures as source data.

2020 BUDGET - As a result of COVID-19 pandemic and the crash in global crude oil prices witnessed at the beginning of the year 2020, the initial approved Kaduna State 2020 Budget is no longer achievable. So many assumptions on which the 2020 budget was based on were no longer realistic, which is why the initially approved 2020 budget was revised to take into account the new realities brought by COVID-19 and the global crude oil price crash. The budget size for the year 2020 is N259.25BN revised to N223.60BN. Capital Expenditure is N146.10BN, accounting for 65%, while recurrent (Personnel and Non-Personnel) is N77.48BN representing 35%.

CHAPTER THREE

REVENUE, EXPENDITURE, FISCAL AND DEBT PERFORMANCE, 2015-2019

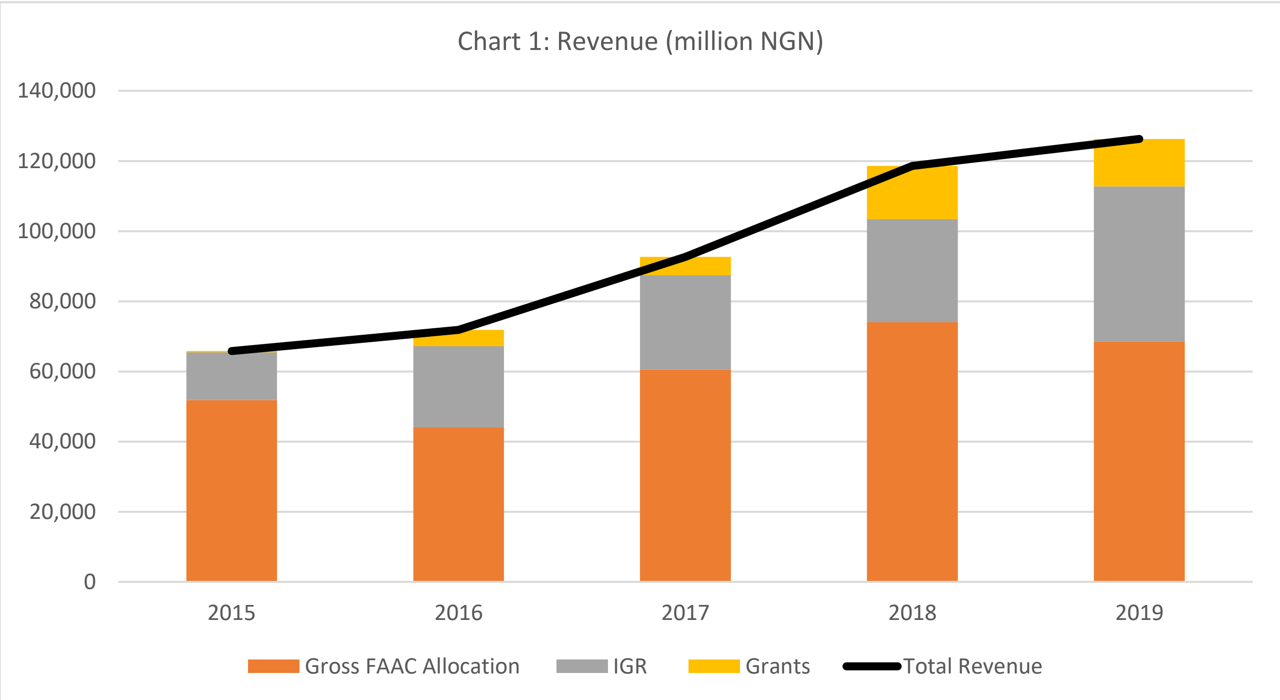
3.1 Revenue, Expenditure and Fiscal Performance, 2015-2019

3.1.1 Revenue Performance

Total Revenue Trend. The document looks at Statutory Allocation, VAT, IGR, Excess Crude, and Capital Receipts – original budget versus actual for the period 2015-2019 and 2020 budget.

Aggregate Revenue grew substantially in nominal terms over the period with IGR and Grants making up a larger proportion – the Kaduna State Tax Codification and Consolidation Law supported IGR growth.

Federation Account revenues suffered in 2015 and 2016 due to drops in crude oil prices and slight dips in production. VAT has grown steadily other than a slight blip in 2015. However, aggregate revenue as a percentage of State GDP fell from 4.3% in 2015 to 3.9% in 2019.



Source: Audited Financial Statements

3.1.2 FAAC Allocations

There has been a steady increase in Statutory Allocation since 2016/2017 economic recession. After falling from N50.4 billion in 2014 to N26.7 billion in 2016m it recovered in the subsequent two years to N49.3 billion in 2019. This increase is as a result of the rise of global oil prices, stability in crude oil production owing to the improved security in the oil rich Niger Delta Region and improved economic activities which directly affects Company Income Tax (CIT) and Customs and Excise Duties (C&E).

Other factors leading to the improved Statutory Allocation include the Federal Government's zeal to improve the non-mineral revenue to reduce its over-dependence on oil and gas as its major revenue sources. Significant reforms were introduced mainly in FIRS (Federal Inland Revenue Service) and Nigerian Custom Service which yields positive results. We experienced a decline in the Statutory Allocation at the end of the first quarter through to the second quarter of 2020 due to the supply glut in the global oil market and the effect of the Novel COVID-19 pandemic which caused global oil prices to crash below $20/barrel.

VAT has constantly surged since the country exited recession in 2017 – not least as a result of continued high level of Consumer Price inflation. This trend is expected to continue following the signing into law of the Finance Bill 2019 which effectively raised the VAT rate from 5% to 7.5%. This will potentially increase revenue that will accrue to Government. However, the lockdown caused by the COVID-19 Pandemic has slowed down economic activities and this is expected to cause a drop in VAT. Recently, The Nigerian Senate had approved the funding of the North East Development Commission (NEDC) from the VAT realised in the Country. A total of 3% deductions from VAT will be deducted monthly for a period of ten years. This will also affect the projected amount for VAT in Kaduna State 2021 and beyond.

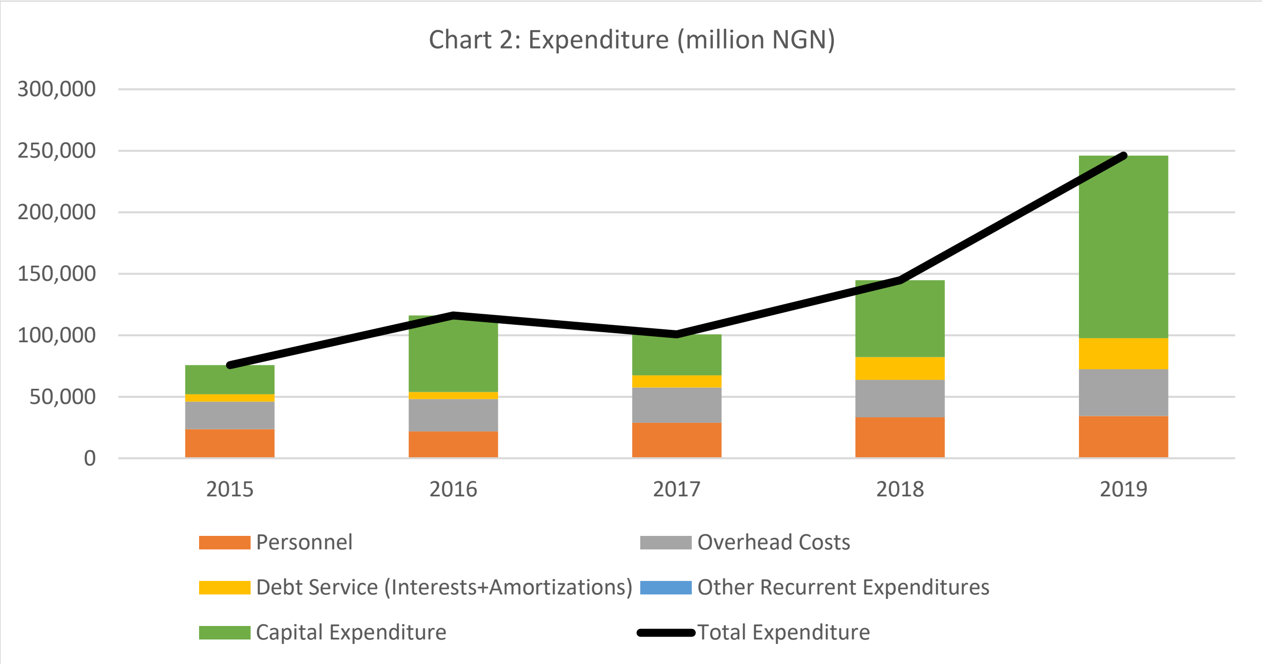
3.1.3 IGR

IGR in the state has more than doubled as a proportion of total revenue between 2015 (17%) and 2019 (36%), and almost tripled in nominal terms from N15.9 billion to N44.2 billion over the same period. This is not least as a result of the passage in 2016 of the Kaduna State Tax Codification and Consolidation Law has greatly enhanced collections and blocked leakages.

The budget for grants between 2015 and 2017 has been very unrealistic with a poor performance in collection. This is partially attributed to the non-capture in government's accounts of funds granted by Development Partners when that is received and spent through bank accounts that are not under the control of the OAG. Other reasons for poor performance include delays in the negotiations with Implementing Partners and non- timely payment of counterpart funds and other requirements from the State Government. The launch of the Kaduna State International Development Coordination Framework (2017- 2020) has greatly contributed in addressing the aforementioned challenges.

3.1.4 Expenditure Performance

The report looks at Recurrent (Personnel & Overheads) and Capital Expenditure.. After a slight decline in 2017, expenditure grew substantially in 2018 and 2019, with the latter largely being based on Capital Expenditure. Debt Service has increased slightly as a result of the increase debt stock. Kaduna State has made an effort to keep a check on personnel and overhead expenditure to free up resources for capital investment. However, the minimum wage implementation did cause an increase in personnel costs in 2019. In aggregate, expenditure grew by 225% over the period, with 70% growth in 2019 alone. The Capital Expenditure ratio grew from 31% to 60% between 2015 and 2019. Similar to IGR, expenditure as a percentage of State GDP grew considerably over the period, from 3.6% to 7.7%.



Source: Audited Financial Statements

3.1.5 Main Expenditure Variations

Personnel - Remunerations due to the employees of the State which is paid centrally through the Treasury Single Account (TSA) make up the overall Personnel Cost. With the introduction and implementation of the new Pension Scheme and re-structuring of the Civil Service in 2016, the State recorded a sizeable decline in the number of staff from the service. This further contributed to the decrease in the Personnel Cost. In addition to this, the introduction and implementation of the IPSAS Chart of Account where some Components of the Personnel Cost are now being captured as Overheads further explains the decrease in the actual as against the budgeted.

There was a significant increase in budgeted and actual Personnel Expenditure in 2017 – this is due to the capture of 60% contribution from Local Government Councils for the Primary Health Care Personnel cost and also plans for additional staff into the service has informed the increase in the Budgeted Personnel figure of 2017 and 2018. Performance of Personnel Cost from 2016-2018 experienced a steady rise due to employments in key Ministries such as Ministry of Health, Education, Planning and Budget Commission among others. In 2019, the implementation of the N30,000 Minimum Wage explains the disparity between the budgeted and actual, which informed the projected increase in the Personnel Cost in the 2020 Budget.

Overhead - Overhead Costs, often referred to as overhead or operating expenses are those expenses associated with running the government that cannot be linked to creating or producing a product or service. They are the expenses the government incurs in the day-to-day running of the government. The adoption of Zero-Based Budgeting (ZBB) system, cutting down of Overhead Cost by 60%, the reduction of ministries from 24 to 14 were all targeted at reducing the cost of governance in the State, blocking leakages and wastes.
As global oil prices plummeted in 2015/2016, Kaduna State adopted a Budget Adjustment Mechanism which was aimed at prioritising Capital Expenditure (CAPEX) over Recurrent Expenditure most especially Overhead Cost. The effect cannot be seen in the figure above because of the Government's decision to pay outstanding and three years backlogs of gratuities it inherited.

Furthermore, the implementation of IPSAS is another reason for the sharp increase which takes away gratuity as personnel component to overheads. Once, this backlog is cleared, it is expected that the Overhead cost should decline drastically. We expect to see a fall in Overhead Performance in 2020 because of the effect of Covid-19 Pandemic which necessitates cut on non-essential spending especially overheads.

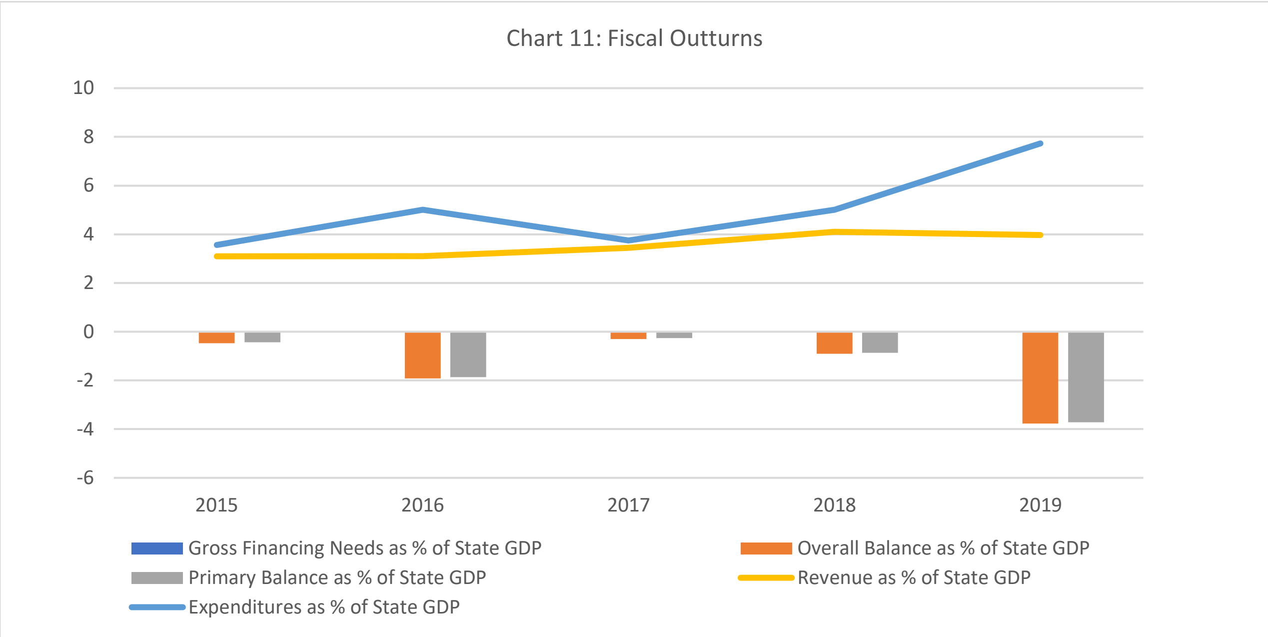
Capital Expenditure - The drawdown of the World Bank Loan has led to an increase of Actual Capital Expenditure in 2019 which recorded 84.21% performance. The decline in 2019 budgeted as compared with previous years follows a realistic approach, capturing only undisputable revenue that are set to accrue to the State. This was as a result of the State's resolve to make a modest revenue projection in line with the actual trend to avoid mismatch between budget and the actual.
A better Performance will likely be seen in 2020 as the State launched its Urban Renewal Programme which prioritize projects under it for better Budget Performance.

3.1.5 Main expenditure variations

Capital Expenditure has been the most variable – largely based on the availability of funds – drops in FA revenues in 2015 and 2016 followed by a recovery in 2018 onwards and increased access to loans.

3.1.6 Fiscal Outturns

The Primary Balanced Trend revealed that the Gross Financing Needs of the state was at its height in 2019. This is as a result of the Economic Transformation Programme for Result (PforR) facility of the World Bank which could have accessed since 2018.



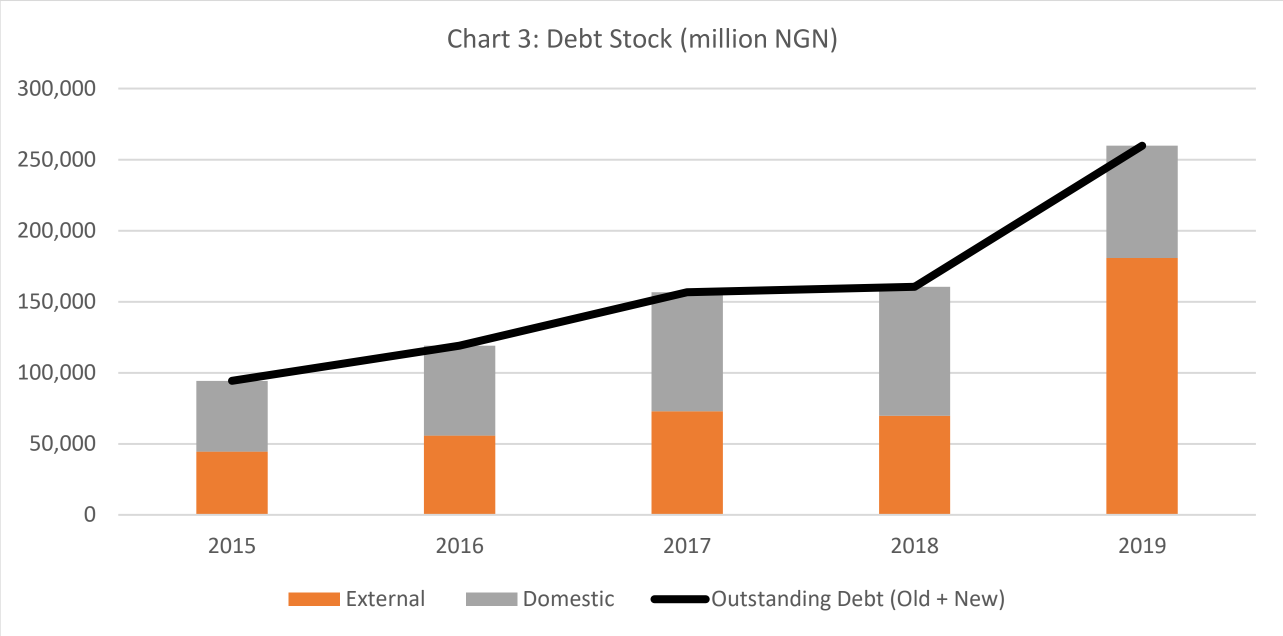
Source: Audited Financial Statements

The overall balanced trend shows a rising effect from 2015 to2016 and a diminishing outcome in year 2017 while noticing an increasing trend and reaching a climax in 2019 with expenditure reaching close to 8% of State GDP – this coincided with larger than usual primary and overall balance deficits.

3.2 Kaduna State Debt Portfolio, 2015-2019

The public debt includes the explicit financial commitments – like loans and securities – that have paper contracts instrumenting the government promises to repay. The State shall use this standard definition of public debt, which considers non-contingent debt and thus the obligation to repay them is independent of the circumstances, as well as excludes contingent liabilities (i.e. guarantees, state own enterprises non-guaranteed liabilities)."

Total Debt, broken into Domestic and Foreign (External) for the period 2015-2019 is show in the graph below.



Source: Audited Financial Statements

3.2.1 Total Debt Stock

The Total Debt of the state continue to rise from 2015-2019, growing by more than 150% over the period. This is due to the sharp decrease in the state's FAAC revenue allocation and access to concessional external loans. Though the IGR has been generally increasing, but it is a much smaller proportion of total revenue. The state had to increase its internal borrowing (mainly from the Federal) to fund its annual budgets. The devaluation of the Naira in 2016 contributed to increasing debt stock (Naira value of External Debt). Debt has also grown as a percentage of State GDP, from 4% in 2015 to 8% in 2019, albeit this is still well within the 25% threshold. As a percentage of revenue, debt is much closer to the upper threshold of 200%. In fact, it surpassed this threshold in 2019 for the first time (206%).

3.2.2 Debt Composition

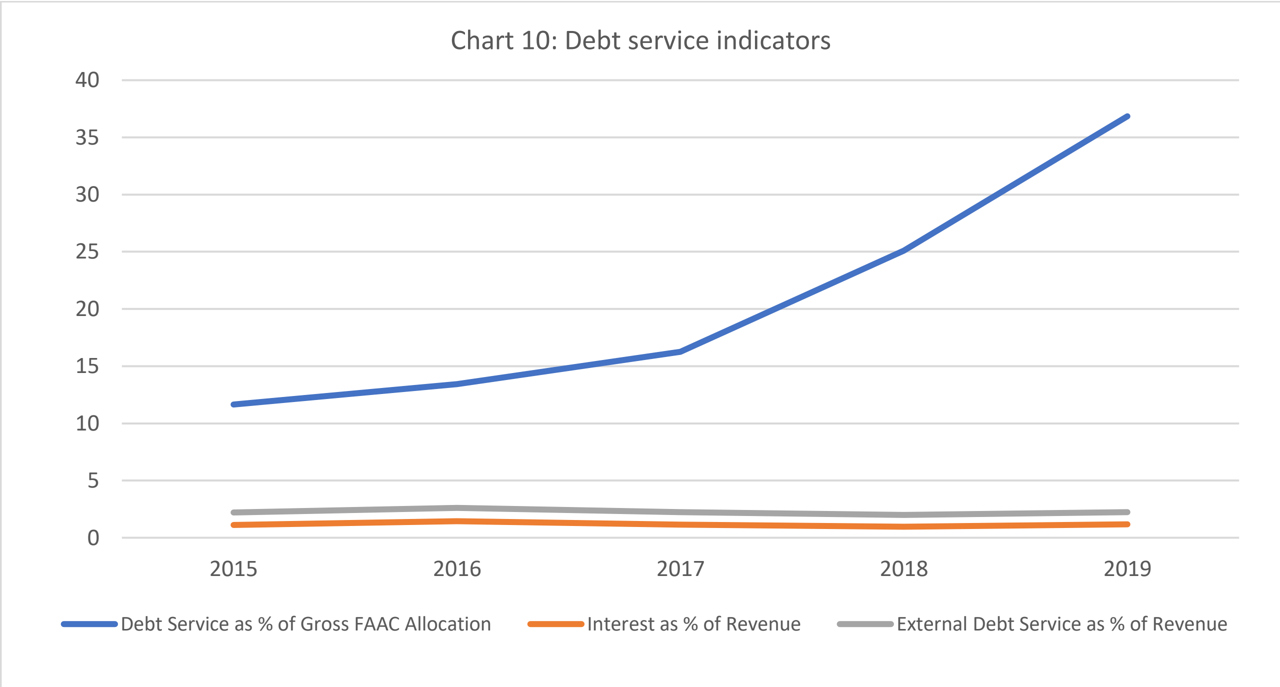
The composition of the debt is Foreign to Domestic as at end of the 2018 was 68% to 32%, respectively. This has changed quite significantly since 2015 when the ratio was slightly in favour of Domestic debt. World Bank accounts for more than 60% of foreign debt as at 2019, with the remainder coming from other Multi-laterals. Slightly more than half of Domestic debt as at 2019 (50.1%) was arrears (Contractor, Pensions and Gratuities), with the remainder being various loans from Federal Government (including the Budget Support, Salary Bailout and Excess Crude account).

The 2019 closing debt stock by item is summarised in the table below.

Item	Currency	Denomination	2019 Year End
Total External Debt - Stocks	US Dollars	Million	**554.78**
World Bank (WB) (including International Development Association (IDA) and IBRD)	US Dollars	Million	389.64
African Development Bank (AfDB) [including African Development Fund (AfDFP) and Africa Growing Together FUND]	US Dollars	Million	16.68
Multilateral Creditor (1) IDB and BADEA	US Dollars	Million	148.47
Total Domestic Debt - Stocks	Naira	Million	**78,898.31**
Budget Support Facility	Naira	Million	17,530.18
Salary Bailout Facility	Naira	Million	12,831.10
Excess Crude Account Backed Loan	Naira	Million	8,972.79
Contractors' Arrears	Naira	Million	16,389.98
Pension and Gratuity Arrears	Naira	Million	23,174.26

3.2.3 Cost and Risk Profile

Whilst total debt service as a proportion of FAAC revenues has increased considerably since 2015, the interest element of this is still relatively low, and with IGR growing, the ratios are more appropriately considered against total revenue. As noted above, the foreign exchange risk on the debt portfolio has increased considerably due to the increased foreign debt holding (largely as a result of draw downs in 2019).



CHAPTER FOUR
CONCEPT OF DEBT SUSUTAINABILITY, ASSUMPTIONS, RESULTS ANALYSIS AND FINDINGS

4.0 Introduction-Concept of Debt Sustainability

The concept of debt sustainability refers to the ability of the government to honour its future financial obligations. Since policies and institutions governing spending and taxation largely determine such obligations, debt sustainability ultimately refers to the ability of the government to maintain sound fiscal policies overtime without having to introduce major budgetary or debt adjustment in the future. Conversely, fiscal policies are deemed unsustainable when they lead to excessive accumulation of public debt, which could eventually cause the government to take action to address the unwanted consequences of heavy debt burden.

With Indicative Thresholds	**Without Thresholds**
Debt/GDP – 25%	Debt Service/FAAC Allocation
Debt/Revenue – 200%	Interest Payment/Revenue
Debt Service/Revenue – 40%	External Debt Service/Revenue
Personnel Cost/Revenue – 60%	

The state, going by the Thresholds, is sustainable under the baseline scenario and the majority of the stress tests (shocks).

4.1 Medium Term Budget Forecast

The state has been developing the Medium -Term-Expenditure Framework which provided a projection of revenue and expenditure of the Government. The assumptions are described below.

4.1.1 Macroeconomic Outlook

Kaduna State has recently published its 2021-2025 State Development Plan (SDP) which includes GDP and revenue growth projections for the state. Furthermore, the Kaduna State 2021-2023 MTEF further expands on these assumptions particularly with regards Mineral sector assumptions. The precise details in these documents can be found on the Kaduna State Government website www.kadgov.ng, www.pbc.kadgov.ng , however the Macro-Mineral framework for the MTEF is provided below.

Item	2020	2021	2022	2023
National Inflation	12.20%	15.00%	11.30%	11.40%
National Real GDP Growth	-3.40%	1.70%	2.40%	2.70%
Oil Production Benchmark (MBPD)	1.4	1.7	2.0	2.0
Oil Price Benchmark	$20.00	$35.00	$55.00	$55.00
NGN:USD Exchange Rate	360	360	360	360
Other Assumptions				
Mineral Ratio	34%	34%	35%	38%

Beyond 2023 (MTEF) and 2025 (SDP), projects are harder to forecast. The State Economy is projected to grow by 10% per annum from 2026 onwards in nominal terms. No explicit macroeconomic assumptions have been assumed at the national level (influencing largely FAAC receipts), however as below the assumptions related to revenue are prudent.

4.1.2 Revenue and Expenditure Assumptions

Federation Account revenue estimates (Statutory Allocation, VAT) for the period 2021-2023 are again as per the Kaduna State MTEF which are based on elasticity forecasting (see MTEF for more details). Beyond this (i.e. from 2024) it is assumed that Statutory Allocation remains stable at the 2023 levels (this is a prudent assumptions) where VAT grows by a further 7.5% per annum (which is modest given the likely inflation rates and Federal tax reforms).

IGR forecasts for 2021 is based on the approved 2021 budget, and thereafter until 2025 on the SDP. This is premises on IGR reforms that are currently being formalised in a Medium Term Revenue Collection Strategy (MTRCS). Beyond 2025, when the full effect of the IGR reforms should be in place, it is anticipated that State IGR will grow at the same pace as State nominal GDP.

Grants are anticipated to remain as at the level of the 2021 budget throughout the period 2021-2029. KDSG will, as part of the SDP, look to ensure it is continually assessing potential sources of grants both from withing Nigeria and externally.

From an expenditure perspective, Kaduna State Government has the desire to ensure sufficient funds are available for Capital Investment, but at the same time acknowledging the need to keep up with and ensure operation and maintenance costs (i.e. overheads) are sufficient to maintain assets and provide services. Using the 2021 approved budget as a base, personnel costs are forecast to rise by 5% per annum and overheads by 7.5% over the period 2022-2029.

After debt service, capital expenditure is forecast to be maintained at 2021 budget levels through 2022-2024, growing by 3.5% per annum thereafter under the scenario in this DSA.

4.2 Borrowings Assumptions

4.2.1 Domestic Borrowing-Terms (interest rate, maturity and grace period)

Kaduna State intends to rebalance its debt portfolio towards a balance mixture of long and short-term maternity and domestic and foreign source. The desire is to focus domestic debt towards longer maturity bonds (or equivalent) over the period 2021-2029. It is aimed this classification or borrowing, regardless of final source, is based on 11.5% interest and 10 years maturity.

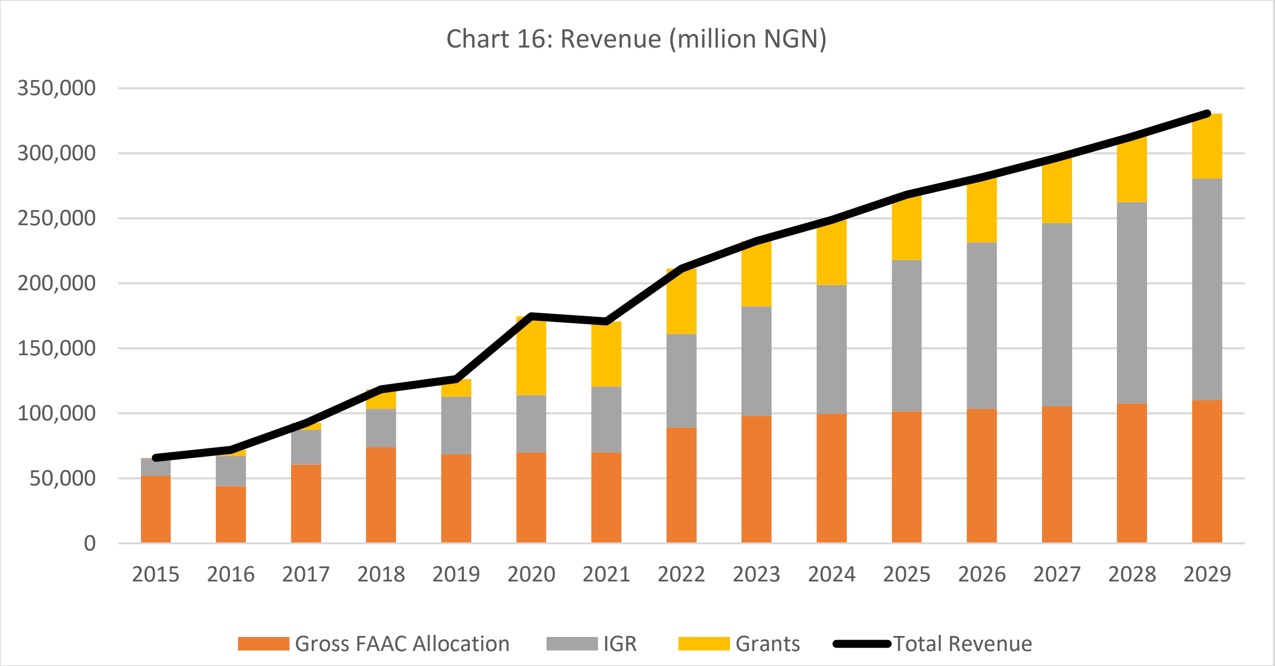
4.2.2 External Borrowing-Terms (Interest rate, maturity and Grace Period)

These are multilateral loans sourced from different financial institutions for various infrastructure development projects. The financial institutions include International Development Association (IDA), African Development Bank (AfDB), Islamic Development Bank (IDB), etc. Availability beyond the current secured sources will be key for the state to identify, but typically it is assumed interest rates between 1.1% and 2.5% and maturity between 20 and 30 years.

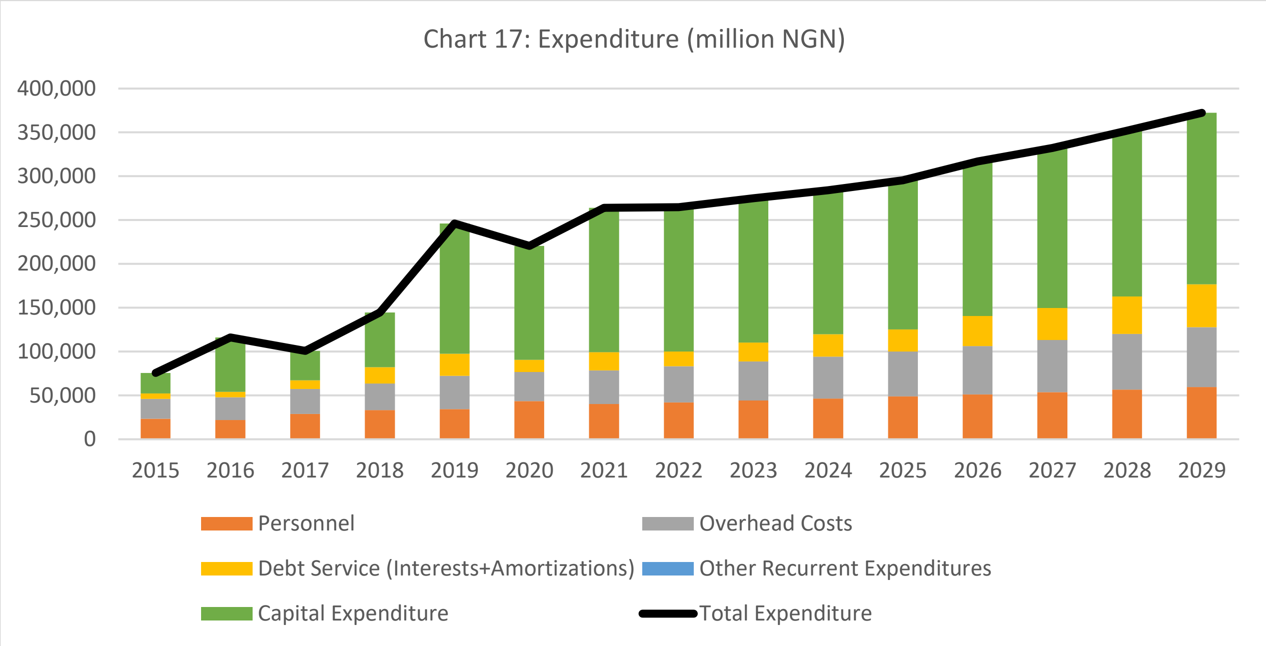
4.3 Simulation Results and Findings

4.3.1 Projected Revenue, Expenditure, Overall and Primary Balance over the Long Term

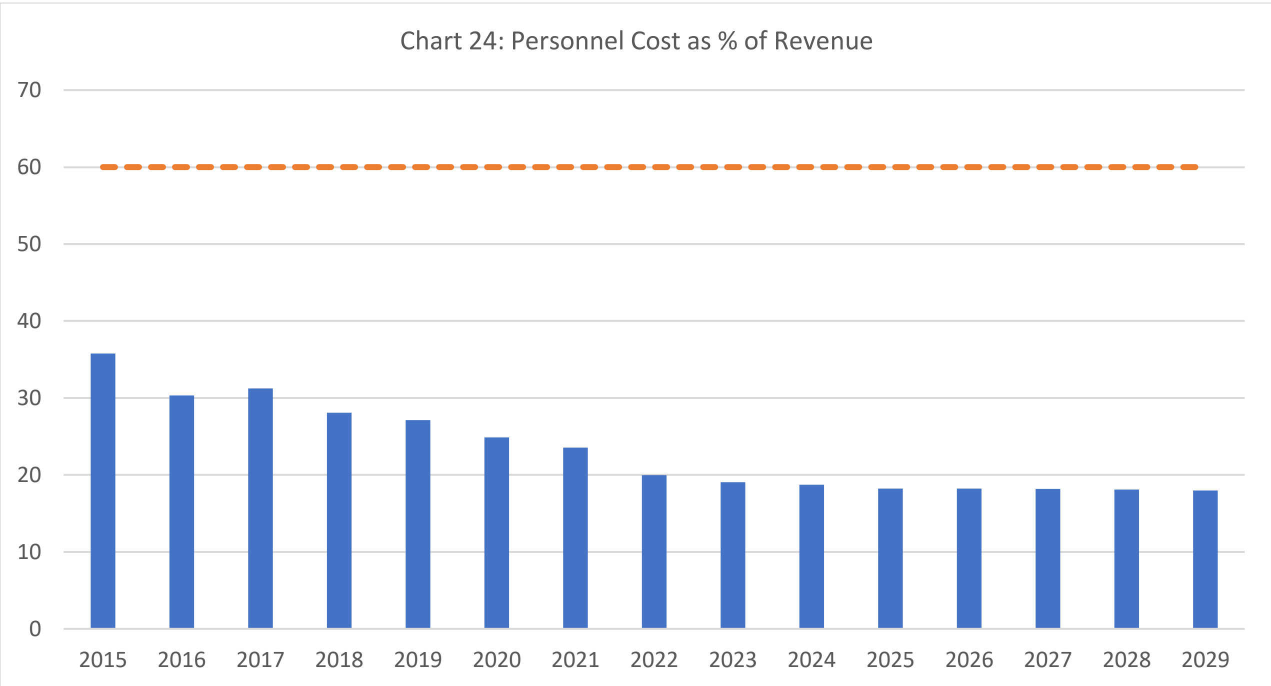
Based on scenario described in section 4.1.2, revenues (as shown in Chart 16 below) will grow steadily over the period 2021-2029. The average annual nominal growth over the nine year period is 7.5% (not withstanding the slight decline in 2021). IGR is forecast to grow proportionately faster than the other revenue sources (FAAC, Grants), the latter being slightly less under the control of the State, hence prudence is applied.



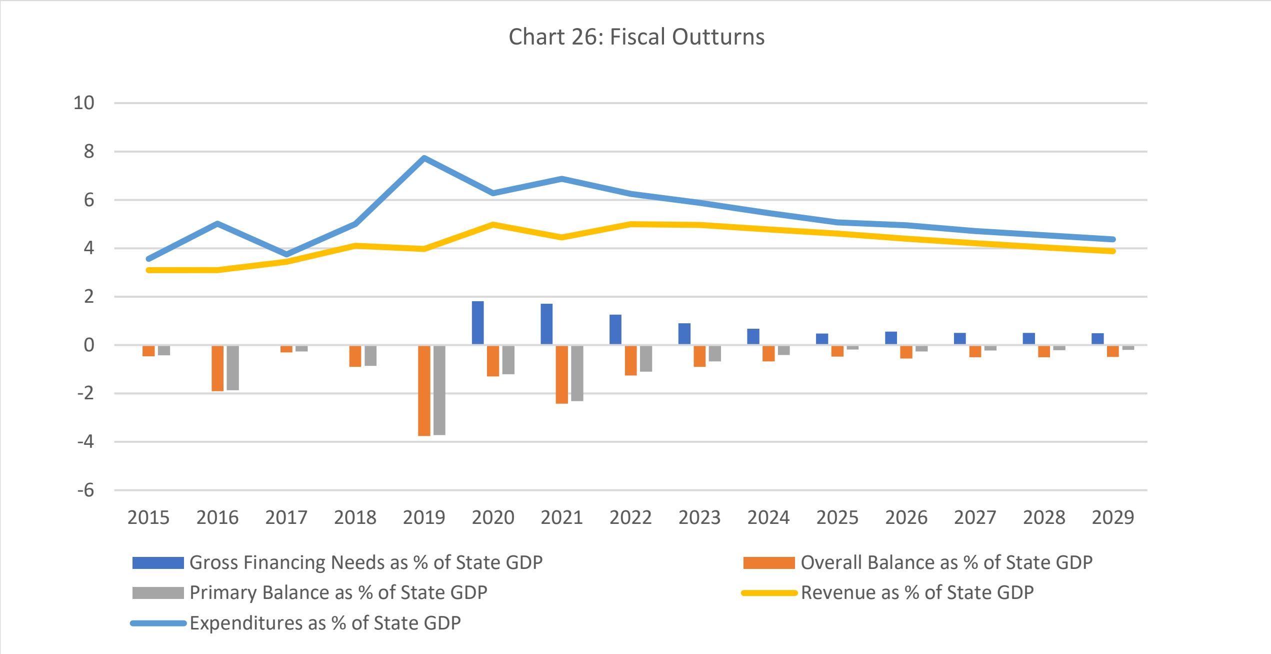
Expenditure will grow at a slightly slow pace, on average by 5% per annum (as shown in Chart 17 below), as the level of borrowing decreases.



As revenues grow and Kaduna State continues to maintain a tight balance on recurrent expenditures in favour of capital investment, personnel expenditure should fall from 24% in 2021 to 18% in 2029. This is shown in Chart 24 below.

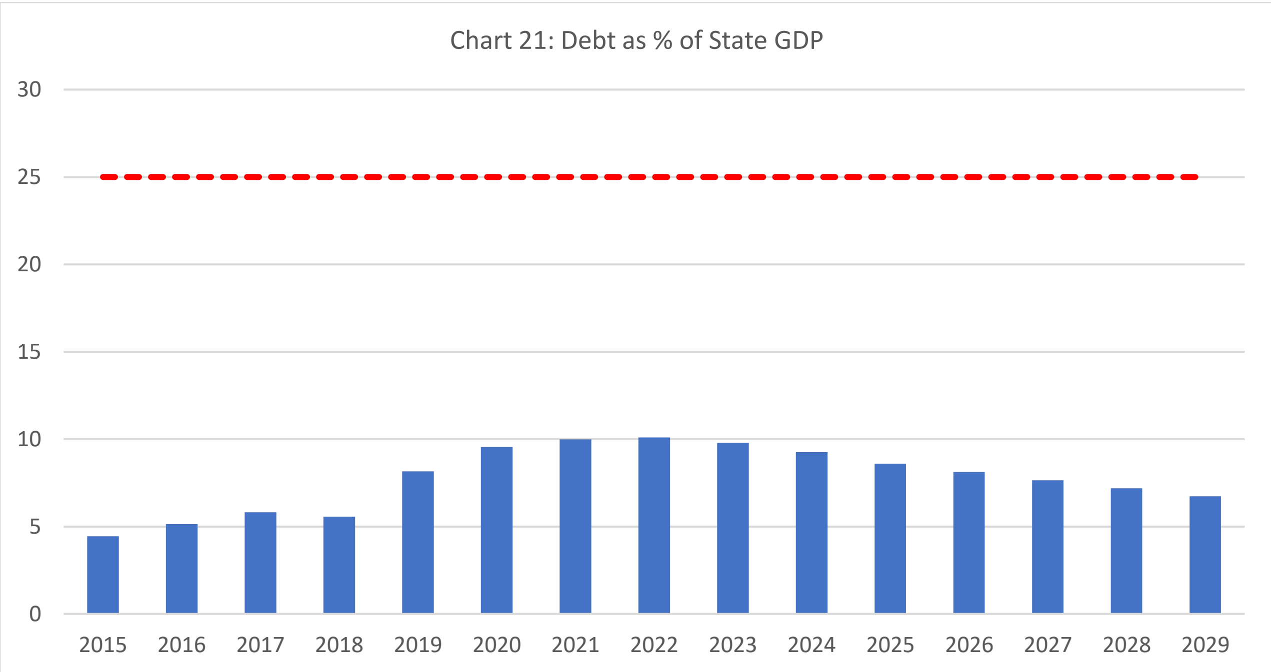


The resultant impact on the fiscal out-turns is positive after a spike (negative) in primary and overall balance in 2019 and 2021, and associated spike in deficit financing. From peaks in 2019-2021 of -3.75% (primary and overall balance) and 1.8% gross financing these are all substantially reduced year on year through to 2029. The peaks in the period 2019-2021 are based both on the increased access to finance and desire to invest in capital infrastructure and the financing sort during the COVID-19 pandemic. This is shown in Chart 26 below.

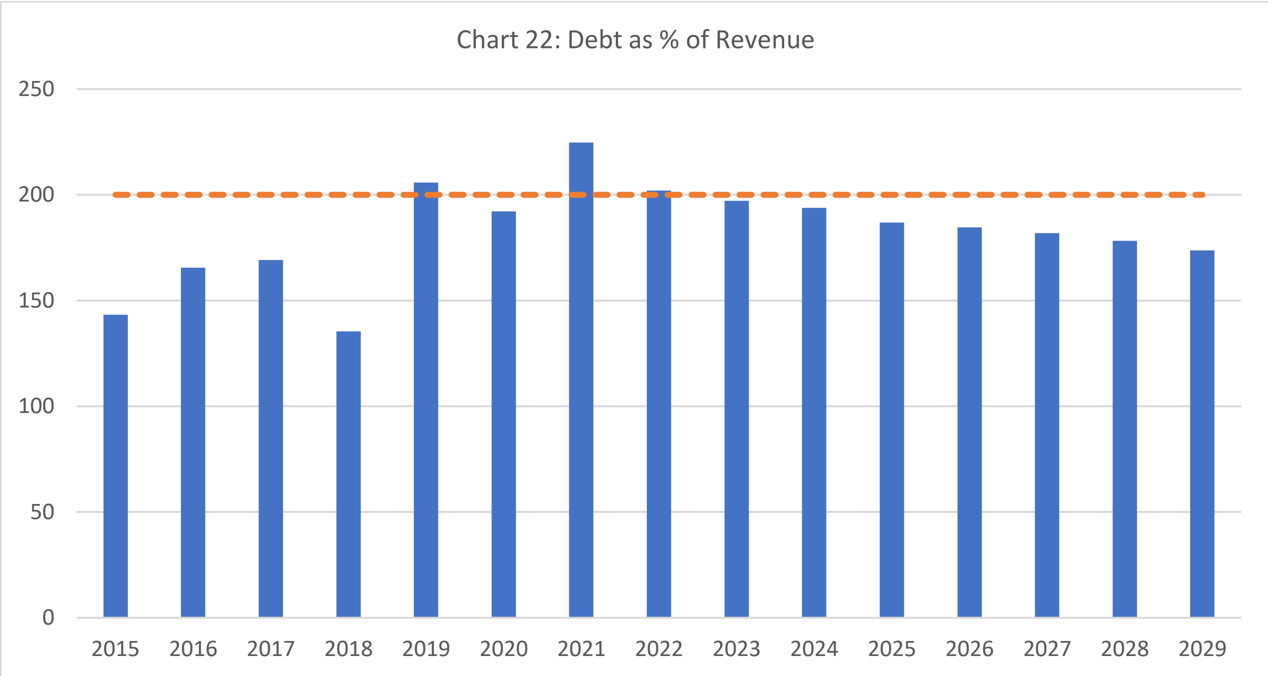


4.3.2 Main Findings and Conclusion of the Baseline Scenario in terms of debt sustainability.

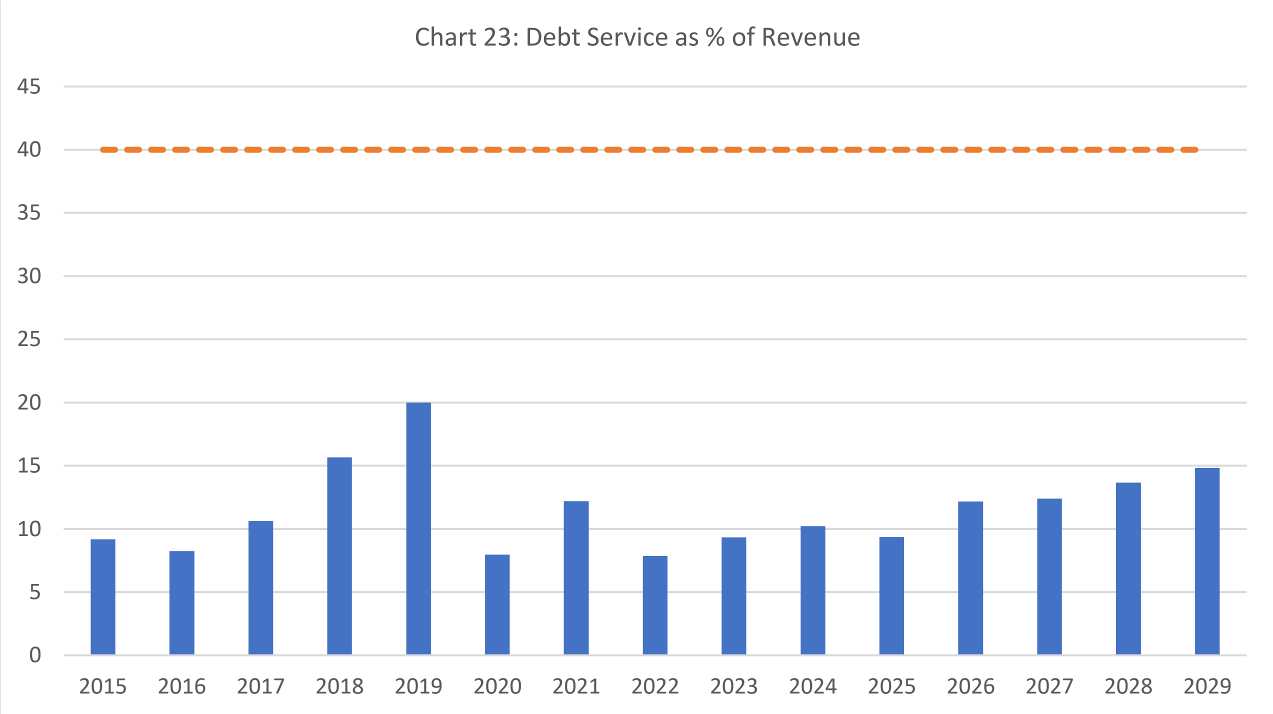
Although Public Debt relative to GDP has increased considerable over the period 2018 to 2021 (forecast), it is well within the threshold of 25%. Furthermore, after a peak of 10% in 2021 and 2022, the ratio declines under the baseline scenario over the remainder of the forecast period, dipping below 7% in 2029.



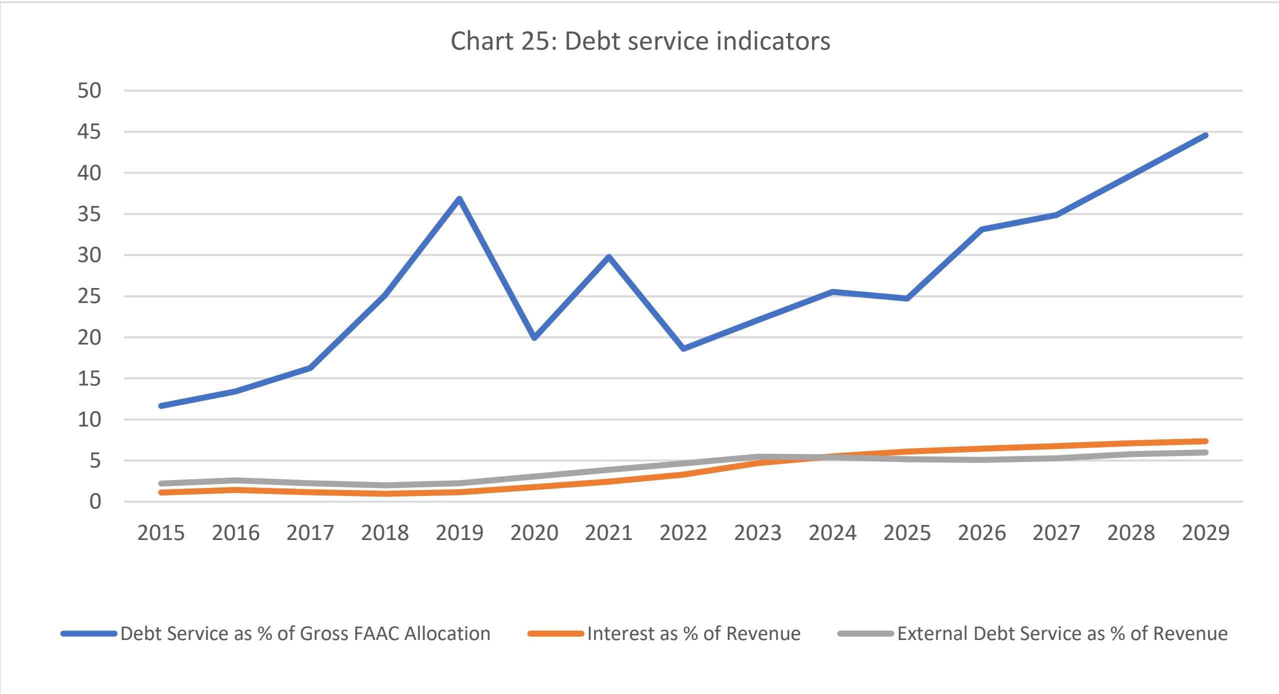
Debt to Revenue also peaks in 2021, and will actually exceed marginally the 200% threshold based on the 2021 budget and borrowing plan as a result of increased borrowing and depressed revenue in the light of COVID-19. However, as noted by Federal Government, this ratio is far more a revenue issue than a debt issue, and with positive dynamics in Federation Account Receipts (based on mineral revenues, CIT, Customs and VAT) beyond the prudent forecasts under the baseline. this ratio has the potential to fall even further than Chart 22 below shows.
The baseline sees the Debt to Revenue ratio dropping below the threshold in 2023 and reducing to 174% by 2029.



Debt Service will naturally increase over the medium term as the debt portfolio increases however it is still significantly below the 40% Debt to Revenue ratio as shown in Chart 23, and should not exceed the 20% observed in 2017.



As IGR takes a more prominent place in the States revenue portfolio, the increasing debt service to FAAC ratio is less concerning. And interest costs remain well below 10% of revenue over the period. These dynamics are shown in Chart 25 below.



4.4 DSA Sensitivity Analysis (Shock Analysis)

4.4.1 Introduction

Nigeria as a country and most of the 36 states, including Kaduna State, are relatively susceptible to external shocks (as experienced for example in 2020) due to the dependency of governments on crude oil-based revenues and the broader economic dependency on the crude oil sector.

Although Kaduna State has a relatively diverse economy and above average IGR when compared to the other 35 States, it is still susceptible to shocks, and some of the shocks examined in this section are beyond the control of the State.

This -sub-section looks at four specific "negative" shocks when compared to the Baseline scenario laid out in Section 4.3, and over the period 2021 to 2029:

- Revenue shock of 10% (i.e. 10% lower revenue when compared to the baseline);
- Expenditure shock of 10% (i.e. 10% higher non-debt (i.e. excluding debt service) expenditure when compared to the baseline);
- Exchange Rate shock of 20% (a one of devaluation of the USD: Naira Exchange rate in 2021); and
- Interest Rate shock of 2% (i.e. interest rates on all debt are 2% per annum higher than the baseline).

Under all four scenarios, all other variables remain as per the baseline. This is a basic assumption but allows for identification of the specific impact of a single shock element. As has been seen in 2020, and during other global economic downturns, there is significant contagion between these shocks – the impact of a global crude oil price crash can impact revenue and exchange rates. COVID-19 saw this and a need to increase expenditure on palliative measures.

In addition, the Baseline is compared to a shock scenario that is in line with "historical trend" over the period 2015-2020.

The impact of the shocks is assessed in terms of four key thresholds:

1. Debt as a % of GDP (Chart 27)
2. Debt as a % of Revenue (Chart 28)
3. Debt Service as a % of Revenue (Chart 29)
4. Personnel Costs as a % of Revenue (Chart 30)

The charts are presented at the end of section 4.4.

4.4.2 Revenue Shock

The 10% revenue shock related to aggregate of Recurrent Revenues (FAAC and IGR) and Grants. It is unlikely that a specific shock would have a uniform impact across revenue types (for

example, in 2020 as a result of COVID-19, aggregate revenues under this definition would have fallen, probably by more than 10%, but some elements by less than others. Grants for example are likely to have increased).
The impact of the shock might be an increased need to borrow, or reduced capacity to service existing debts, amongst other things.

Three of the four indicators used to assess the shock have revenue as the denominator, meaning the shock will have a direct impact.

As shown in charts 27-30, the impact of this shock will increase each of the four ratios, but most significantly the debt to revenue and debt service to revenue, with the former taking the trajectory of state debt further and further above the 200% threshold. By 2029, the ratio will have reached 299%. This implies a worsen of solvency ratios. The Debt Service ratio would also be approaching the 40% by 2029, at 34%.

4.4.3 Expenditure Shock

This shock has a similar impact to the revenue shock, with the Debt to GDP and Personnel expenditure ratios not being materially affected, but the debt to revenue and debt service to revenue deviating from the baseline with substantially as other expenditures may crowd out debt service and cause the need for more borrowing. Again this shock caused the debt to revenue to take the trajectory of state debt further and further above the 200% threshold. By 2029, the ratio will have reached 276%. The Debt Service ratio would also be approaching the 40% by 2029, at 31%. Again this implies a worsen of solvency ratios and worsening of the debt position of the State.

4.4.4 Exchange rate Shock

Exchange Rate shocks will impact the value and servicing costs of foreign debt. As Kaduna State has taken on considerably more foreign debt over the last here years, this shock as the potential to impact and is the type of shock experienced regularly over the last five years.

Due to grace periods and low interest rates, the impact on most ratios is minimal over the period analysed (i.e. to 2029) although it does have the risk of crowding out some other expenditures. The most concerning would be the debt to revenue ratio where the ratio takes longer to move back below the 200% threshold than under the baseline scenario. It would not move back below 200% under 2028, and as above represents a slight worsening of the debt position of the State when compared to the baseline.

The magnitude of this shock is obviously key to the above metrics (as are all the shocks), and potential contagion to other variables. In the instance of an Exchange Rate shock, the Naira value of crude oil revenues would increase, meaning potentially increased in Statutory Allocation to states which may offset some negative effects of the shock in nominal terms. The impact may also be harder felt after the assessment period (i.e. beyond 2029).

4.4.5 Interest Rate Shock

The interest rate shock has impact largely on the debt service to GDP ratio as debt service (interest component) costs will increase. The impact would be an increase in the ratio from 15% under the baseline to 16% under this shock – this is still within the 40% threshold.

4.4.6 Historical Shock

The historical shock actually results in an improved debt position for three of the four indicators, with only Debt to GDP ratio being impacted negatively when compared to the baseline. For this indicator, the ratio reaches 9% in 2029 compared to 7% under the baseline, which is still considerably below the 25% threshold.

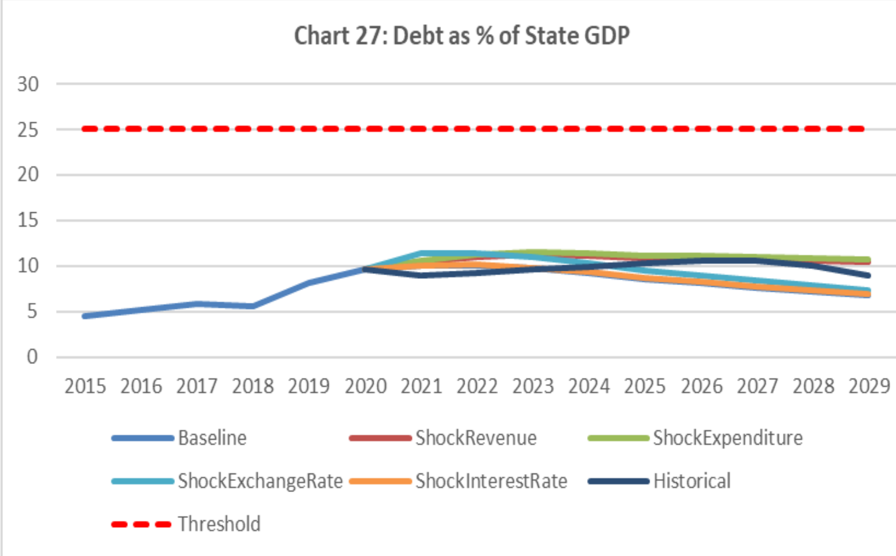
4.4.7 Conclusions on Sensitivity Analysis

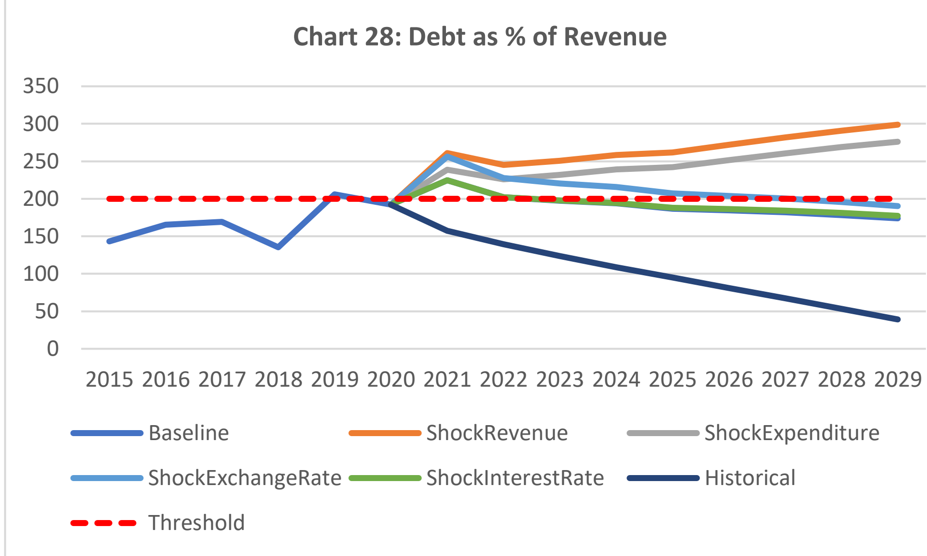
The five shocks as simulated all have impacts on the ratios analysed at the magnitudes tested, with the revenue and expenditure shocks taken the trajectory of State debt away (above) from the 200% threshold compared the baseline which brings this ratio back under the threshold by 2023. These two shocks also have a marked impact on Debt Service, albeit not causing the 40% ratio to be breached during the period of analysis (i.e. up to 2029) but having impact on other expenditures. But they may have further negative impacts beyond this period.

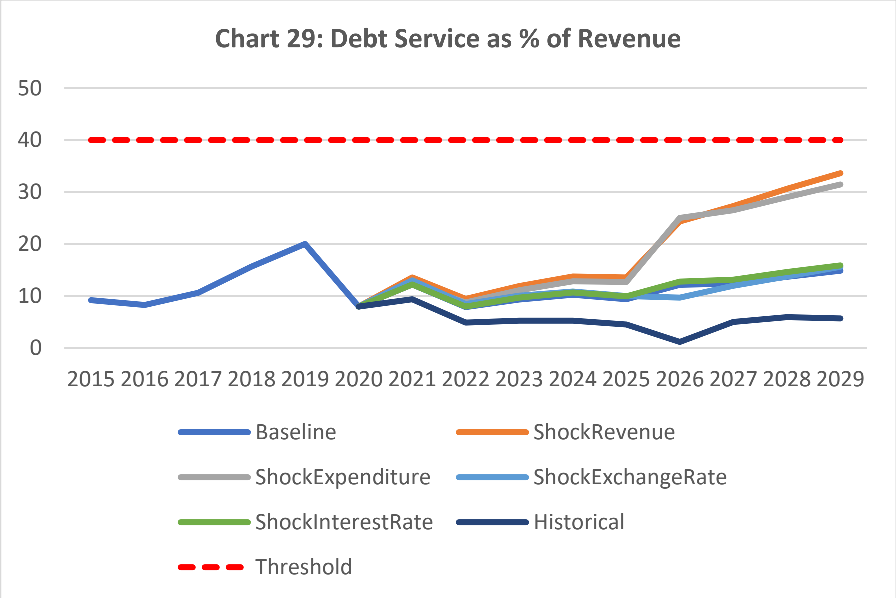
This serves as a reminder on the need to continue the effort to increase IGR, to ensure a balanced debt portfolio (maturity, source), not to borrow to excess, and to create sufficient buffers within the ratio analysis so as not to breach them as a result of a shock. Fiscal buffers, including contingency funds and debt service funds, would also help alleviate the impact of shocks.

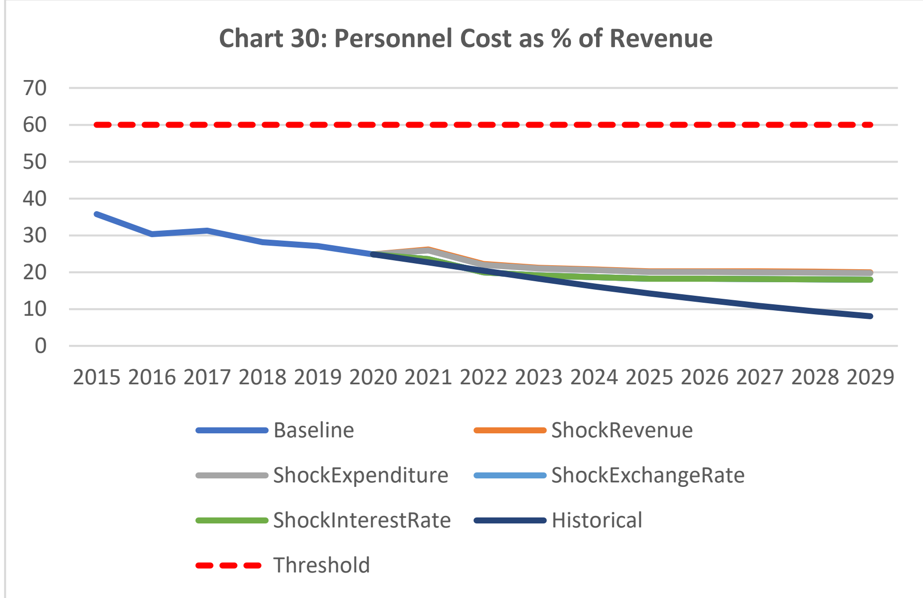
Consideration should also be given to the scenario where more than of these shocks occurs simultaneously, as has happened in 2020, the magnitude is higher, or more persistent (e.g. multiple exchange rate depreciation of the period). Again, this emphasises the need to borrow to invest, and ensure that investment is made in the areas that have greatest economic and social benefit to the State.

CHARTS ON SHOCK ANALYSIS









ANNEXURES

1 Table of assumptions

Assumptions:		Projection Methodology
Economic activity	State GDP (at current prices)	2018 GDP is based on 2018 State GDP Estimate, estimated nominal growth in 2019 and 2020, and the Kaduna SDP 2021-2025 GDP for the period 2021-2025. Nominal Gr
Revenue	**Revenue**	
	1. Gross Statutory Allocation ('gross' means with no deductions)	2021-2023 is based on the Kaduna State 2021-2023 MTEF. It is assumed to be static thereafter, which asssumes consistent crude oil prices and production, and no furth
	of which Net Statutory Allocation ('net' means of deductions)	Gross less deductions
	of which Deductions	Assumed to grow by 5% PA based on growing external debt portfolio and end of grace periods.
	2. Derivation (if applicable to the State)	Not applicable.
	3. Other FAAC transfers (exchange rate gain, augmentation, others)	Not budgeted for (note actuals up to and including 2020 are based on NBS FAAC Data)
	4. VAT Allocation	2021-2023 is based on the Federal MTEF, then grown by the same average annual growth rate thereafter
	5. IGR	2020 and 2021 are based on the revised and approved budgets respectively. 2022-2025 are based on the State Development Plan and associated IGR reforms (as being a
	6. Capital Receipts	
	Grants	2020 and 2021 are based on the revised and approved budgets respectively. Growth from 2022 is assumed to be Static.
	Sales of Government Assets and Privatization Proceeds	Limited refunds from FGN in 2021 budget, which may flow into 2022 based on liquidity issues
	Other Non-Debt Creating Capital Receipts	Nothing from 2021
Expenditure	**Expenditure**	
	1. Personnel costs (Salaries, Pensions, Civil Servant Social Benefits, other)	NCOA Economic Segment Sub-Account Type 21: 2020 is based on revised budget, 2021 is based on approved budget. Growth of 2.5% PA thereafter
	2. Overhead costs	NCOA Economic Segment Sub-Account Type 22: 2020 is based on revised budget, 2021 is based on approved budget. Growth of 2.5% PA thereafter
	3. Other Recurrent Expenditure (Excluding Personnel Costs, Overhead Costs and Interest Payments)	Captured within Overhead Expenditure (NCOA Economic Segment Sub-Account Type 22)
	4. Capital Expenditure	2020 based on actuals, 2021 based on 2021 budget. No growth in 2022-2024, then 3.5% growth Per Annum thereafter
Closing Cash and Bank Balance	**Closing Cash and Bank Balance**	2020 based on performance and anticipated 2021 opening balance. Minor operation balance thereafter.
Proceeds from Debt-Creating Borrowin	**Planned Borrowings (new bonds, new loans, etc.)**	
	New Domestic Financing in Million Naira	
	Commercial Bank Loans (maturity 1 to 5 years, including Agric Loans, Inf Loans, and MSMEDF)	NA
	Commercial Bank Loans (maturity 6 years or longer, including Agric Loans, Inf Loans, and MSMEDF)	NA
	State Bonds (maturity 1 to 5 years)	NA
	State Bonds (maturity 6 years or longer)	Aim for longer maturity and to bring balance (Domestic:Foreign) to the Debt Porfolio
	Other Domestic Financing	NA
	New External Financing in Million US Dollars	
	External Financing - Concessional Loans (e.g., World Bank, African Development Bank)	Target for concessional loans but with view of re-balancing debt portfolio over the period.
	External Financing - Bilateral Loans	Potential available Bi-Lateral loans. To be identified in out-years.
	Other External Financing	NA
Debt Amotization and Interest Paymen	**Debt Outstanding at end-2019**	
	External Debt - amortization and interest	Amortization and interest payments estimated using profiles recorded in the DMO.
	Domestic Debt - amortization and interest	Kaduna State Debt Management Department Interest and Amortisation Schedule
	New debt issued/contracted from 2020 onwards	
	New External Financing	**Insert the Borrowing Terms for New External Debt: interest rate (%), maturity (# years) and grace period (#)**
	External Financing - Concessional Loans (e.g., World Bank, African Development Bank)	Based on current available rates
	External Financing - Bilateral Loans	Based on current available rates
	Other External Financing	NA
	New Domestic Financing in Million Naira	**Insert the Borrowing Terms for New Domestic Debt: interest rate (%), maturity (# years) and grace period (#)**
	Commercial Bank Loans (maturity 1 to 5 years, including Agric Loans, Inf Loans, and MSMEDF)	NA
	Commercial Bank Loans (maturity 6 years or longer, including Agric Loans, Inf Loans, and MSMEDF)	NA
	State Bonds (maturity 1 to 5 years)	NA
	State Bonds (maturity 6 years or longer)	Based on current available rates
	Other Domestic Financing	NA

2 Baseline Projections

	Actuals					Projections (Baseline Scenario)									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Economic Indicators															
State GDP (million NGN, at current prices)	2,125,373.00	2,316,933.00	2,691,446.00	2,890,000.00	3,183,046.00	3,513,228.00	3,843,410.00	4,231,210.00	4,682,680.00	5,209,020.00	5,823,680.00	6,406,048.00	7,046,652.80	7,751,318.08	8,526,449.89
Exchange Rate NGN/US$ (end-Period)	196.49	253.19	305.79	306.50	326.00	379.00	379.00	379.00	379.00	379.00	379.00	379.00	379.00	379.00	379.00
Fiscal Indicators (million NGN)															
Revenue	**91,105.34**	**81,810.06**	**119,136.56**	**138,448.73**	**123,883.34**	**238,367.54**	**236,566.42**	**264,644.26**	**274,951.40**	**284,242.95**	**295,545.49**	**316,941.65**	**332,344.51**	**351,818.61**	**372,327.98**
1. Gross Statutory Allocation ('gross' means with no deductions; do not include VAT Allocation here)	36,878.26	26,709.24	42,350.92	55,777.10	49,293.69	44,508.44	50,137.18	69,151.64	76,158.51	76,158.51	76,158.51	76,158.51	76,158.51	76,158.51	76,158.51
of which Net Statutory Allocation ('net' means of deductions)	32,794.58	22,269.75	37,435.72	50,949.68	43,448.09	38,370.56	43,692.40	62,384.63	69,053.15	68,697.88	68,324.85	67,933.16	67,521.90	67,090.07	66,636.64
of which Deductions	4,083.68	4,439.49	4,915.21	4,827.42	5,845.60	6,137.88	6,444.78	6,767.01	7,105.36	7,460.63	7,833.66	8,225.35	8,636.61	9,068.45	9,521.87
2. Derivation (if applicable to the State)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. Other FAAC transfers (exchange rate gain, augmentation, others)	5,407.96	6,399.36	4,474.03	2,595.90	2,385.25	5,202.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. VAT Allocation	9,596.68	11,005.59	13,729.68	15,610.63	16,866.42	20,118.12	19,800.66	20,113.74	21,919.42	23,563.38	25,330.63	27,230.43	29,272.71	31,468.16	33,828.27
5. IGR	13,557.02	23,024.01	26,882.72	29,446.39	44,228.04	44,200.00	50,699.97	71,930.00	84,290.00	98,970.00	116,470.00	128,117.00	140,928.70	155,021.57	170,523.73
6. Capital Receipts	25,665.43	14,671.87	31,699.21	35,018.71	13,495.19	124,338.11	115,928.61	103,448.87	92,583.47	85,551.07	77,586.35	85,435.71	85,984.59	89,170.36	91,817.47
Grants	365.43	4,714.08	5,225.26	15,150.75	13,495.19	60,728.72	50,177.21	50,177.21	50,177.21	50,177.21	50,177.21	50,177.21	50,177.21	50,177.21	50,177.21
Sales of Government Assets and Privatization Proceeds	0.00	0.00	0.00	0.00	0.00	1,770.43	1,000.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Debt Creating Capital Receipts	0.00	0.00	8,493.90	12,252.99	0.00	4,486.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proceeds from Debt-Creating Borrowings (bond issuance, loan disbursements, etc.)	25,300.00	9,957.79	17,980.04	7,614.97	0.00	57,352.33	64,751.40	52,771.66	42,406.25	35,373.85	27,409.14	35,258.50	35,807.37	38,993.15	41,640.26
Expenditure	**75,704.50**	**116,176.33**	**100,761.97**	**144,790.22**	**246,090.61**	**220,385.06**	**264,002.29**	**264,644.26**	**274,951.40**	**284,242.95**	**295,545.49**	**316,941.65**	**332,344.51**	**351,818.61**	**372,327.98**
1. Personnel costs (Salaries, Pensions, Civil Servant Social Benefits, other)	23,530.53	21,800.28	28,966.58	33,324.53	34,243.16	43,451.15	40,221.61	42,232.69	44,344.32	46,561.54	48,889.62	51,334.10	53,900.80	56,595.84	59,425.63
2. Overhead costs	22,551.31	26,243.63	28,512.24	30,308.82	38,018.32	33,288.33	38,335.78	41,210.96	44,301.79	47,624.42	51,196.25	55,035.97	59,163.67	63,600.94	68,371.01
3. Interest Payments (Public Debt Charges, including interests deducted from FAAC Allocation)	742.24	1,039.32	1,056.45	1,141.92	1,473.02	3,135.59	4,186.49	6,931.56	10,943.12	13,717.70	16,397.27	18,133.64	20,068.21	22,214.91	24,323.74
4. Other Recurrent Expenditure (Excluding Personnel Costs, Overhead Costs and Interest Payments)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5. Capital Expenditure	23,579.22	62,206.74	33,443.35	62,586.60	148,572.01	129,734.86	164,610.20	164,610.20	164,610.20	164,610.20	170,371.56	176,334.56	182,506.27	188,893.99	195,505.28
6. Amortization (principal) payments	5,301.20	4,886.35	8,783.35	17,428.35	23,784.10	10,775.13	16,648.21	9,658.85	10,751.97	11,729.10	8,690.80	16,103.38	16,705.55	20,512.92	24,702.32
Budget Balance (' + ' means surplus, ' - ' means deficit)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**17,982.49**	**-27,435.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Opening Cash and Bank Balance	**26,256.68**	**33,554.09**	**12,899.96**	**8,309.12**	**1,900.41**	**9,953.39**	**27,935.88**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**
Closing Cash and Bank Balance	**33,554.09**	**12,899.96**	**8,309.12**	**1,900.41**	**9,953.39**	**27,935.88**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**	**500.00**

	Actuals					Projections (Baseline Scenario)									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Financing Needs and Sources (million NGN)															
Financing Needs						**63,609.39**	**65,751.40**	**53,271.66**	**42,406.25**	**35,373.85**	**27,409.14**	**35,258.50**	**35,807.37**	**38,993.15**	**41,640.26**
i. Primary balance						-31,716.18	-72,352.57	-36,681.26	-20,711.17	-9,927.06	-2,321.07	-1,021.48	966.39	3,734.68	7,385.80
ii. Debt service						13,910.72	20,834.70	16,590.40	21,695.09	25,446.80	25,088.07	34,237.02	36,773.77	42,727.83	49,026.05
Amortizations						10,775.13	16,648.21	9,658.85	10,751.97	11,729.10	8,690.80	16,103.38	16,705.55	20,512.92	24,702.32
Interests						3,135.59	4,186.49	6,931.56	10,943.12	13,717.70	16,397.27	18,133.64	20,068.21	22,214.91	24,323.74
iii. Financing Needs Other than Amortization Payments (e.g., Variation in Cash and Bank Balances)						17,982.49	-27,435.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financing Sources						**63,609.39**	**65,751.40**	**53,271.66**	**42,406.25**	**35,373.85**	**27,409.14**	**35,258.50**	**35,807.37**	**38,993.15**	**41,640.26**
i. Financing Sources Other than Borrowing						6,257.05	1,000.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ii. Gross Borrowings						57,352.33	64,751.40	52,771.66	42,406.25	35,373.85	27,409.14	35,258.50	35,807.37	38,993.15	41,640.26
Commercial Bank Loans (maturity 1 to 5 years, including Agric Loans, Infrastructure Loans, and MSMEDF)						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial Bank Loans (maturity 6 years or longer, including Agric Loans, Infrastructure Loans, and MSMEDF)						500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Bonds (maturity 1 to 5 years)						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Bonds (maturity 6 years or longer)						0.00	10,000.00	25,000.00	15,000.00	15,000.00	5,000.00	5,000.00	5,000.00	2,500.00	0.00
Other Domestic Financing						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
External Financing - Concessional Loans (e.g., World Bank, African Development Bank)						54,955.00	25,015.66	18,950.00	15,160.00	7,580.00	9,475.00	7,580.00	3,790.00	3,790.00	3,790.00
External Financing - Bilateral Loans						3,790.00	25,014.00	3,790.00	3,790.00	1,895.00	1,895.00	1,895.00	1,895.00	0.00	0.00
Other External Financing						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residual Financing						-1892.67	4721.74	5031.66	8456.25	10898.85	11039.14	20783.50	25122.37	32703.15	37850.26

Continued overleaf

	Actuals					Projections (Baseline Scenario)									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Debt Stocks and Flows (million NGN)															
Debt (stock)	**94,326.20**	**118,950.20**	**156,688.14**	**160,512.47**	**259,757.21**	**335,737.85**	**383,841.04**	**426,953.86**	**458,608.14**	**482,252.90**	**500,971.24**	**520,126.35**	**539,228.17**	**557,708.40**	**574,646.34**
External	44,478.29	55,673.73	72,862.46	69,652.95	180,858.90	265,932.81	312,808.41	330,378.70	342,066.35	343,972.49	347,529.81	348,879.40	345,176.49	337,110.41	327,305.76
Domestic	49,847.91	63,276.47	83,825.69	90,859.52	78,898.31	69,805.04	71,032.64	96,575.16	116,541.79	138,280.41	153,441.43	171,246.95	194,051.69	220,597.99	247,340.58
Gross borrowing (flow)						**57,352.33**	**64,751.40**	**52,771.66**	**42,406.25**	**35,373.85**	**27,409.14**	**35,258.50**	**35,807.37**	**38,993.15**	**41,640.26**
External						58,745.00	50,029.66	22,740.00	18,950.00	9,475.00	11,370.00	9,475.00	5,685.00	3,790.00	3,790.00
Domestic						-1,392.67	14,721.74	30,031.66	23,456.25	25,898.85	16,039.14	25,783.50	30,122.37	35,203.15	37,850.26
Amortizations (flow)	**5,301.20**	**4,886.35**	**8,783.35**	**17,428.35**	**23,784.10**	**10,775.13**	**16,648.21**	**9,658.85**	**10,751.97**	**11,729.10**	**8,690.80**	**16,103.38**	**16,705.55**	**20,512.92**	**24,702.32**
External	1,042.16	1,342.66	1,513.34	1,774.64	2,226.25	3,074.53	3,154.06	5,169.71	7,262.35	7,568.85	7,812.69	8,125.41	9,387.91	11,856.08	13,594.65
Domestic	4,259.03	3,543.69	7,270.01	15,653.71	21,557.85	7,700.60	13,494.15	4,489.14	3,489.62	4,160.24	878.12	7,977.97	7,317.64	8,656.85	11,107.66
Interests (flow)	**742.24**	**1,039.32**	**1,056.45**	**1,141.92**	**1,473.02**	**3,135.59**	**4,186.49**	**6,931.56**	**10,943.12**	**13,717.70**	**16,397.27**	**18,133.64**	**20,068.21**	**22,214.91**	**24,323.74**
External	418.52	531.70	571.51	588.48	601.80	2,285.71	3,446.43	4,683.72	5,483.01	5,889.59	6,007.74	6,172.21	6,286.84	6,293.82	6,210.69
Domestic	323.72	507.63	484.94	553.44	871.22	849.88	740.06	2,247.83	5,460.10	7,828.11	10,389.53	11,961.42	13,781.37	15,921.09	18,113.04
Net borrowing (gross borrowing minus amortizations)						**46,577.20**	**48,103.19**	**43,112.82**	**31,654.28**	**23,644.76**	**18,718.34**	**19,155.12**	**19,101.82**	**18,480.23**	**16,937.94**
External						55,670.47	46,875.60	17,570.29	11,687.65	1,906.15	3,557.31	1,349.59	-3,702.91	-8,066.08	-9,804.65
Domestic						-9,093.27	1,227.59	25,542.53	19,966.63	21,738.61	15,161.02	17,805.52	22,804.74	26,546.31	26,742.59
Debt and Debr-Service Indicators															
Debt as % of GDP	**4.44**	**5.13**	**5.82**	**5.55**	**8.16**	**9.56**	**9.99**	**10.09**	**9.79**	**9.26**	**8.60**	**8.12**	**7.65**	**7.20**	**6.74**
Debt as % of Revenue	**143.34**	**165.55**	**169.10**	**135.36**	**205.72**	**192.12**	**224.71**	**201.99**	**197.21**	**193.78**	**186.83**	**184.65**	**181.84**	**178.28**	**173.77**
Debt Service as % of Revenue	**9.18**	**8.25**	**10.62**	**15.66**	**20.00**	**7.96**	**12.20**	**7.85**	**9.33**	**10.22**	**9.36**	**12.15**	**12.40**	**13.66**	**14.83**
Personnel Cost as % of Revenue	**35.76**	**30.34**	**31.26**	**28.10**	**27.12**	**24.86**	**23.55**	**19.98**	**19.07**	**18.71**	**18.23**	**18.22**	**18.18**	**18.09**	**17.97**
Debt Service as % of Gross FAAC Allocation	**11.65**	**13.43**	**16.25**	**25.10**	**36.85**	**19.92**	**29.79**	**18.59**	**22.12**	**25.52**	**24.72**	**33.11**	**34.88**	**39.70**	**44.57**
Interest as % of Revenue	**1.13**	**1.45**	**1.14**	**0.96**	**1.17**	**1.79**	**2.45**	**3.28**	**4.71**	**5.51**	**6.12**	**6.44**	**6.77**	**7.10**	**7.36**
External Debt Service as % of Revenue	**2.22**	**2.61**	**2.25**	**1.99**	**2.24**	**3.07**	**3.86**	**4.66**	**5.48**	**5.41**	**5.15**	**5.08**	**5.29**	**5.80**	**5.99**