

## **THE EFFECT OF INTERNALLY GENERATED REVENUE COMPONENTS ON DOMESTIC DEBT ACCUMULATION IN NIGERIA'S NORTH CENTRAL STATES**

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### **Abstract**

Domestic debt has been a major concern and has brought about several reactions by stakeholders in accounting literature. Sustaining the high debt profile of North Central states has become worrisome that needs urgent attention. The size of domestic debt has been a persistent problem that has brought about the inability to meet societal expectations. This inability to sustain the debt profile can be traced to the insufficiency of internally generated revenue. The study therefore investigated the effect of Internally Generated Revenue (IGR) on domestic debt of North Central States in Nigeria. Ex-post facto research design was adopted. The population of the study was 6 States in the North central, Nigeria which also constitute the sample of the study. Data covering a period of 14 years (2010–2023) were extracted from audited accounts of the States. The reliability of the data was premised on the certification of the audited accounts by the Nigerian regulatory and legal authorities. Descriptive and inferential statistics were used to analyze the data at 0.05 level of significance. Findings reveal that internally generated revenue had a significant effect on size of domestic debt ( $\text{Adj } R^2 = 0.266$ ,  $F(4, 79)$ ). The study concluded that internally generated revenue impacted size of domestic debt of North Central States in Nigeria. The study recommends that the State Government should enhance compliance mechanisms to streamline Pay as You Earn (PAYE) collection processes and incentivize tax compliance.

**Key Words:** Domestic debt, internally generated revenue, pay as you earn, size of domestic debt.

### **1.0 Introduction**

Debt sustainability has become a pressing concern for entities, policy makers and stakeholders. The collapse of global oil price has taken its toll on the Nigerian economy. The current administration in Nigeria and Nigerians have continued to deliberate on how to respond to the constant unrelenting dive in oil price and its impact on government revenues. Before the current administration at the federal level assumed office and the removal of fuel subsidy, many states were unable to meet their statutory obligations due to the significant decline in their share of revenue from the Federation Account allocation and there seemed to be no light at the end of the tunnel. As a result of the decline in oil revenue, the monthly share by states from federal allocation had also declined significantly thereby causing a huge expenditure/revenue gap. This has led to many state governments to use debt to bridge the gap.

Furthermore, debt is crucial for entities to access capital, finance operations, and invest in growth opportunities. Recent accounting literature highlights the importance of debt in various contexts such as Financing and Investment where debt provides necessary capital for investments, expansion, and modernization (Ross et al., 2022), debt can be used to manage risk through hedging and diversification (Smithson & Smith, 2023). Debt can provide liquidity and cash flow necessary for operations and growth (Brealey et al., 2022) and debt can reduce the cost of capital and increase firm value (Koller et al., 2022).

States Government have been relying heavily on debt to be able to meet its obligations towards its citizens, but this has brought huge debt burden in terms of financing and the debt sustainability has become worrisome and an issue of concern which requires urgent attention (Balogun, 2015). A few states have partially been able to offset the fall in Federal oil revenue transfers by increasing their Internally Generated Revenue (IGR). Debt serves as barriers to economic growth and welfare in most parts of the world (Aladejena, et al., 2020). Other ways of generating revenue other than Federal allocation is now at the front burner as federally distributed revenues to the states continues to dwindle.

Internally Generated Revenue (IGR) denotes the revenue that the federal, state and local governments generate within their respective areas of jurisdiction (Abiola & Ehigiamusoe, 2014). IGR for State governments has also been described as revenues that are derived within the state from various sources such as taxes (pay as you earn, direct assessment, capital gain taxes, etc.) and motor vehicle license, among others (Adenugba & Chike, 2013).

The legally recognized taxes and levies that are within the jurisdiction of the Federal, State and Local Government areas in Nigeria are as stipulated in relevant sections of the Nigerian constitution. A cursory look at it shows that State Government mainly has jurisdiction over the imposition and collection of taxes and levies such as personal income tax, withholding tax for individuals, capital gains tax for individuals, stamp duties on instruments executed by individuals, pools betting, lotteries, gaming, and casino taxes. Others are road tax, business premises registration, development levy for individuals, naming of street registration fees in state capitals, right of occupancy fees on lands owned by state government, market taxes and levies where state finance is involved, hotel, restaurant, or event centre consumption tax (where applicable). There is also entertainment tax (where applicable), environmental (ecological) fee/levy, mining, milling and quarry fees (where applicable), animal trade tax (where applicable), produce sales tax (where applicable) and abattoir fees (where state finance is involved). In addition, there is infrastructure maintenance levy (where applicable), fire service charge, economic development levy (where applicable), social services contribution levy (where applicable), property tax and land use charge (where applicable), signage and mobile advertisement jointly collected by states and local governments (2010 Amendment, Nigeria 1999 Constitution). It is also worthy to emphasize that some of these taxes could be jointly administered between state/local and federal government (Izevbigie & Ebohon, 2019).

The trends in domestic debt growth in the North Central States, Nigeria between 2011 and 2023 reveal varying patterns, reflecting changes in fiscal policies, economic pressures, and external factors affecting government borrowing. The level of domestic borrowing was within average in some of the years such as 2014, 2019, and 2022 demonstrated more moderate and steady growth in domestic debt, with increases of 16.27%, 16.30%, and 13.78%, respectively. These periods reflect a balance between fiscal deficits and debt management efforts, where the government-maintained borrowing at sustainable levels to meet its funding needs without overwhelming the economy. For instance, the growth in 2022 highlights post-pandemic recovery measures, where borrowing supported economic stabilization while remaining within a manageable range.

However, in some of the years, such as 2013, 2015, and 2023, recorded significant increases in domestic debt. For instance, 2013 witnessed a 35.84% rise in domestic debt, primarily driven by increased borrowing to address budget deficits and fund major projects. Similarly, 2015

experienced the highest growth during the period, with a staggering 45.85% increase. This spike can be attributed to the economic downturn caused by declining oil prices in 2014-2016 thus resulting to the federal government slashing the federal allocation to States, and which forced the government to rely heavily on borrowing to stabilize the economy. In 2023, a 21.43% increase in domestic debt marked another period of high growth, reflecting efforts to finance economic recovery and infrastructure development amidst ongoing fiscal challenges. These periods of significant debt accumulation underscore the government's dependence on borrowing to fund critical expenditures during economic crises and periods of revenue shortfalls. The overall trajectory of domestic debt growth points to an increasing reliance on borrowing, with periods of sharp spikes raising concerns about fiscal sustainability. High growth years such as 2015 and 2023 highlight the risks of debt accumulation, including rising debt servicing costs that divert resources away from critical investments in infrastructure and public services.

The cost of debt service in North Central States exhibited an inconsistent flow as it showed an increase of 160% between 2018 and 2019; however, worst scenarios occurred as the States recorded sharp increases in several years. For instance, 2013 saw a dramatic rise of over 1,288%, which was attributed to a substantial increase in debt obligations. Similarly, in 2015, the cost grew significantly by 2,257%, reflecting heightened financial commitments to debt service during that year. In contrast, in 2023, a notable reduction of -60% was observed, which could indicate a shift toward reducing debt burdens. The sharp increases in debt servicing costs during certain years highlight challenges such as rising borrowing costs and fiscal pressures. These trends also point to vulnerabilities in managing debt sustainably, as escalating costs can divert resources from essential public services like healthcare and infrastructure development.

Despite the recognized importance of internally generated revenue (IGR) for fiscal sustainability, empirical evidence specifically linking IGR performance to the rising size of domestic debt at the subnational level, particularly within the North Central states of Nigeria, remains scarce. While previous studies have largely concentrated on national aggregates or infrastructural outcomes, few have investigated how variations in internally generated revenue streams influence the debt dynamics of states struggling with dwindling federal allocations. Moreover, existing literature often overlooks the complexities arising from reliance on specific IGR components such as Pay As You Earn (PAYE) and State Direct Assessments (SDA), and how these impact debt accumulation patterns. In the context of fluctuating oil prices, subsidy removals, and revenue shortfalls, understanding these dynamics becomes critical for informed fiscal policy. Thus, this study fills this gap by empirically examining the effect of internally generated revenue on the size of domestic debt across North Central states, providing new insights into the sustainability of state-level public finances in Nigeria.

### **Research Objective and Hypothesis**

i. To examine the effect of internally generated revenue on domestic debt of North Central, Nigeria.

H<sub>0</sub>1: There is no significant effect of internally generated revenue on domestic debt of North Central, Nigeria.

## **2.0 Literature Review**

Hakura (2020) defined debts as when a debtor meets or services its present and expected debt obligations without necessarily seeking assistance from the creditors or defaulting, the debts of that nation are said to be sustainable. According to Los Angeles Sustainability Committee (2016), sustainability is defined as the physical ability and institutional practices that fulfill the needs of present users without compromising the ability of the future generation to meet theirs, particularly relating to the use and waste of natural endowment and resources (UCLA Sustainability Charter, 2016).

In addition, sustainability is the process of maintaining in a balanced fashion, change in fashion, to which exploration of resources, investments, technological development and institutional change are all in accord, which triggers both current and future potential to meet the needs and aspirations of the people (Northmist, 2020). Therefore, sustainability of local government simply refers to the ability of an institution to maintain itself towards attaining development.

Also, debt sustainability is the assessment of a country's creditworthiness, there is the need to consider those debts that threaten the developmental finances. If after these considerations, a country is still able to repay future debt obligations, then the economy is fiscally sustainable (Beqiraj et al., 2018). This means that the difference between expected revenue and expected expenditure is a major determinant of public debt dynamics.

### **Size of Domestic Debt**

The size of domestic debt refers to the total amount of money that a country owes to creditors within its own borders. This debt is incurred through various financial instruments like government bonds and loans issued to individuals, institutions, or other levels of government within the country. It's an important economic indicator reflecting the government's borrowing activities and financial obligations within its own territory (Festus et al., 2022).

Domestic debt is the component of the total government debt in a country that is owed to lenders within the country. As domestic debt becomes an increasingly important resource mobilization option for developing countries, it is necessary to analyze the options for restructuring the current domestic debt portfolio and the options for future new issuance (ECON, 2018). Oshadami (2006) defined domestic debt as debt instruments issued by the Federal Government and denominated in local currency. In principles, states and local governments can also issue debt instruments but limited in their ability to issue such.

As Àkos and István (2019) explained in the context of poor countries, servicing of high public debts depletes the revenue of the indebted country to such an extent that the ability to return to growth paths is dim, even if the country implements strong reform Programmes. For Krugman (1988), if a country's debt level exceeds the nation's repayment ability, expected debt servicing is likely to be an increasing share of the country's future output level. Thus, investment and growth will be discouraged via expectation of high tax rates on the returns from the domestic economy issued for the existing foreign creditors.

### **Internally Generated Revenue**

Revenue is defined as an income derived from all activities engaged in by the receiving entity. In governmental terms, revenue is the entire amount received by the government from sources

within and outside the government entity, (Abdulkareem, 2018). Internally Generated Revenue (IGR) refers to the income a government generates from its own sources within the country or state, excluding funds received from external sources like grants or loans. This revenue is often derived from taxes, fees, licenses, and other charges imposed on individuals, businesses, and activities within the jurisdiction (Ishola, 2020).

Internally generated revenue is any income earned within an entity or an organization that has not been budgeted for and/or released by the funding of the federal government. It can also be defined as any other revenue generated locally by the university that is virtually earned and expended by the university independent of statutory allocations, it is often times un-budgeted (Eragbe, 2014). Ventureonline.com (2019) defined IGR as the creation of either tangible or intangible asset within the confines of one entity, IGR are those funds that are realized through the effort or operation of the entity itself i.e., the fund was not borrowed or realized through external means. However, this definition agrees in substance with that of wikinvest.com (2019) which states that internally generated revenue means funds not constituting the proceeds of any loan, debt issuance, equity issuance, assets sales, insurance recovery or indebtedness.

### **Pay As You Earn**

Pay As You Earn (PAYE) is a personal income tax which is assessed and administered in a formalized manner in accordance with the personal income tax Act of 2011. The PAYE focuses on the income of individuals as a result of employment and the employee's income are being taxed using a scale (Ishola, 2020).

Pay As You Earn is a form of tax an employer deducts from the employees' salaries and wages. The PAYE directly on individual's income as a result of employment and the employee's income are taxed using a graduated scale (Osho, 2020). The tax calculated is usually deducted from the source and is done by the employer who will remit the amount to the tax authorities. The second category, direct assessment tax, is a tax levied on the individual income as a result of self-employment. This part of income tax covers income from trade, business, profession, or vacation. The payment of this tax occurs after the individual has collected his/her gross income and filed in a return on the gross income (Mohammed, 2017).

### **State Direct Assessment**

Direct Assessment tax is a system through which self-employed persons are assessed and charged to pay tax based on their income (Babu, 2020). This is an income tax which is imposed on self-employed. This is usually applied to individuals who run their own business such as Professionals, Contractors, Politicians, Mechanics, Traders, Welders etc. and all residents in a particular State who have any source of income, and others (Babalola, 2020).

In addition, direct assessment typically refers to the evaluation of a skill or competency through direct observation, measurement, or examination. It involves directly observing and evaluating a person's performance rather than relying on indirect measures or self-reporting (Awoderu, 2017). Under the 2004 Act, the relevant provision is Section 87 which provides for the establishment of the State Board of Internal Revenue whose operational arm shall be known as the State Internal Revenue Service. The Board shall have the power to assess and collect the following categories of taxes and levies within the state boundary as internally generated revenue (Federal Board of Inland Revenue, 2013). The Board shall have the power to assess and collect

the following categories of taxes and levies within the state boundary as internally generated revenue.

### **State Road Tax**

State Road Tax (SRT) is a tax levied by state governments on vehicles for using the roads within their jurisdiction. The amount is often based on factors like the type of vehicle, its age, and sometimes its engine capacity. It's a mandatory payment for vehicle owners to contribute to road maintenance and infrastructure development (Kazeem, 2020).

State Road tax refers to a tax compulsorily paid on wheeled vehicles using public roads. All states require an annual registration fee for vehicle owners in order to permit the usage of such vehicles on roads (Adegbite, 2021). The road tax levy varies from state to state, depends on vehicle kinds, and is also based on the capacity, engine, and categories of vehicle. These categories of vehicles are passenger cars, taxis, lorries, trucks, buses, motorcycles, tractors, vans and tricycles (Omolola, 2023). Annually, the vehicle owners, based on engine displacement, and manufactured years, pay annual road tax to government so that their contributions are felt by the government for the effective discharge of fiscal roles.

### **Other Revenue Generated by States**

Other Revenue Generated by States (ORS) refers to income streams that state governments generate beyond taxes. This can include fees, fines, investment returns, grants, and various other sources of income such as interest and repayment, mainly, mining (rents, royalties and NNPC earnings as well as miscellaneous). The miscellaneous items are licenses, fees, earnings from sales and rent of government property (Adesoji, 2013).

As the economy expands, the tax structure grows and this reduces the level of indirect tax revenue generated, while the direct tax element increases. The level of indirect tax grows in an economy with heavy presence of informal sector. Increasing the level of tax structure in an economy would increase the level of government revenue generation, and as government revenue increases, it is expected that government investment in socioeconomic and infrastructural development increases too (Amin, 2018).

### **Theoretical Review**

#### **Stakeholders' Theory**

Following the introduction of stakeholders' theory in 1970, Freeman (1984) developed the scope of the theory to accommodate a wider range of stakeholders. According to Freeman (1984), the stakeholder theory assumes and maintains that a firm have stewardship role towards a variety of stakeholders who are different from the shareholders who are the customers, suppliers, employees, government, community, environment, and future generations. King (2002) opined that the importance of integrated sustainability reporting in strengthening the relationship between a firm and the society in which it operates and being insensitive to the interest of stakeholders may affect the reputation of the firm which would adversely affect the operational and financial performance.

Stakeholder theory views organizations as a system that accommodates not only the interest of the owners but also the interest of other groups within the environment which the organization operates. This view is contrary to the view of agency theory that sees organizations as a system

of relationship between shareholders and management (Lawal, 2012). The theory argued that since organizations cannot operate and exist in isolation without relating to their immediate environments then, the interests of other stakeholders such as employees, customers, suppliers, government agencies and local communities should be considerably factored in the process of strategic decision making. Therefore, organizations should not only maximize the return of its shareholders, but also the expectations of other stakeholders should be considered.

The theory posits that companies should carry out sustainability practices and reporting as a way of fulfilling their ethical and social obligations to stakeholders and at the same time, maximizing shareholders' wealth. The ability of the firm in managing its relationship with its stakeholders will ensure its long-term growth and survival. The stakeholders can only be aware of firm's sustainability practices through its sustainability reporting. The growth and survival of a firm depends on its capability to create value for the stakeholder which will not be achieved if the needs of the stakeholders are ignored (Clarkson, 1995; Jensen, 2002). In other words, a firm will be able to maintain its existence if the expectations of the stakeholders are met which can only be made known to them through sustainability reporting.

### **Fiscal Federalism Theory**

Fiscal federalism theory was first systematically developed by Richard Musgrave in 1959, who outlined government functions in allocation, redistribution, and stabilization (Musgrave, 1959). Wallace Oates expanded this work in 1972, proposing that decentralized governments are better positioned to supply public goods tailored to local needs (Oates, 1972). The theory is based on key assumptions: Decentralized levels of government are more efficient in providing public goods that vary by region. Central governments are better suited for income redistribution and macroeconomic stabilization. Local governments understand regional needs better and can generate revenue accordingly. Financial autonomy at subnational levels enhances accountability and service delivery (Musgrave, 1959; Oates, 1972).

Supporters of fiscal federalism argue it improves efficiency, responsiveness, and public sector innovation: Wallace Oates (1972) stressed that fiscal decentralization matches public goods with local preferences. Buchanan and Tullock (1962) viewed fiscal decentralization as a way to maximize individual choice and government efficiency. Recent scholars like Rodden (2006) highlight the accountability benefits of local revenue generation.

Fiscal federalism has also faced important criticisms: Prud'homme (1995) argued that decentralization can exacerbate inequality and inefficiency if local governments lack capacity. Tanzi (1996) warned that weak subnational administrations might misuse financial autonomy, leading to poor service delivery and fiscal instability. Some critics note that competition for tax bases can trigger a "race to the bottom," reducing tax rates and public investment (Oates, 2005).

Fiscal federalism theory underlines the importance of empowering subnational governments to raise their own revenues through taxes, fees, and other local sources. It suggests that stronger IGR systems improve fiscal autonomy and service delivery, reducing overreliance on federal transfers (Musgrave, 1959; Oates, 1972). Effective IGR frameworks enable states or local governments to finance their development priorities independently and improve accountability to their constituents.

Poorly structured fiscal federal systems, where subnational governments have limited or unstable IGR, often push them to rely on borrowing, increasing domestic debt levels (Rodden, 2006). Conversely, strong IGR performance reduces the need for unsustainable debt accumulation. Thus, fiscal federalism emphasizes that enhancing internal revenue generation capacity is critical to maintaining fiscal discipline and avoiding excessive domestic debt.

### **Empirical Review**

Fasoye (2020) looked at the factors that determine the Internally Generated Revenue (IGR) of State governments in Nigeria. The PAYE and road taxes were found to be the primary determinants of IGR for the States, as they appeared to be less affected by the prevalence of corrupt practices in Nigeria's public sector. The information was obtained using the Fully Modified Ordinary Least Square (FMOLS) technique. The study concluded that State governments in Nigeria have over the years fallen short of fully utilizing other internal revenue sources available to them.

Nwafor et al., (2021) investigated the returns from land-based revenue and internally produced revenue after budgeting. It also contrasts the growth rates of both throughout this period, as well as the contribution of land-based revenue to the state's domestically produced revenue. Using a descriptive technique, the study discovered that Abia state failed to realize what was anticipated nearly throughout the time, that the growth rate of both has remained negative, and that the contribution of land-based tax income to domestically produced revenue was less than 5% on average. The research advocated for the creation of custom software to close leakages, decrease fraud and corruption, and encourage stakeholders to conduct a daily inventory of their income performance before the end of the year.

Nkechi and Onuora (2018) investigated the effect of internally generated revenue on the infrastructural development of the southeastern states in Nigeria. The ex-post facto design was used in the study. Secondary data were used, and they were extracted from budget estimates of each of the five South Eastern States of Imo, Abia, Ebonyi, Enugu, and Anambra state from the period 2013-2017. The study employed descriptive statistics, correlation, and linear multiple regression for data analysis and data interpretation. Findings from the study revealed that there is a significant relationship between internally generated revenue and the cost of infrastructure in the Southeast States as of the date of the study, thus suggesting that government should increase IGR in order to meet up the cost of infrastructure.

Amin (2018) examined the sources of revenue generation, the capacity of the Asa local government area of Kwara State in generating revenues for developmental programs, and the extent to which the generated revenues have been used for community development in the local government. The study used both primary and secondary data. Two hundred and eighteen (218) questionnaires were received and analyzed using the Statistical Package for Social Sciences (SPSS) software. The finding from the study showed that: Asa local government generates revenues from internal and external sources. External sources are the statutory allocation from federal accounts and borrowed money from the State government. The local government generated huge amounts of revenue from market rates and levies and permit fees on land and establishment. Tax enforcement is not efficient, and most of the respondents agreed that local government officers are more efficient than consultants. Most of the respondents agreed that generated revenue supports the availability of boreholes and well water but disagreed that the

grading of roads is executed every quarter through internally generated revenue. The majority of the respondents also disagreed that the level of development has encouraged people to pay taxes and strongly disagreed that Asa is ahead of other local governments in the provision of basic amenities and disagreed that IGR in Asa is used to build shopping complexes and modern market in Asa local government area.

Peter and Ferdinand (2018) analyzed the relationship between internally generated revenue and capital expenditure utilization in Cross River State, Nigeria, from 2007 to 2015. Secondary data sought from the Cross River State budget office, internal revenue service, and Ministry of Finance were used for the study. Descriptive statistics were used to analyze the relationship between internally generated revenue and capital expenditure utilization in Cross River State. Findings from the study indicate that an increase in government expenditure without corresponding revenue will widen the budget deficit, stating that the Cross River State government should increase the size of its internally generated revenue to accommodate the capital expenditure of the state.

Ironkwe and Ndah (2016) investigated the impact of internally generated revenue on the performance of local governments in Rivers State. The ex-Post Facto research design or causal-comparative design was adopted for the study. Ogba, Egbema, and Ndoni local government councils were purposefully selected for the study. Statistical analysis was performed using data from the financial statement of the council from 2006 to 2013 sourced from the office of the auditor general for local government. A major finding of the study was that tax revenue displayed a positive but insignificant influence on road construction and maintenance. Notwithstanding the insignificant influence of tax revenue on road construction and maintenance, the study concluded that tax revenue and non-tax revenue are vital ingredients in improving the performance of local government councils in Rivers State.

Sylvester (2020) carried out a study on external debt and economic growth nexus: Empirical evidence from Nigeria. The aim was to examine the relationship between external debt and economic growth for policy analysis on public finance and public debt management. Data collected on the country's external debt and GDP growth rate were analyzed using root test and cointegration long run tests. The results showed that debt overhang variable and crowding out effect variable depress the level of investment affecting adversely, the economic growth of the country.

Amani (2018) examined the impact of government debt on macroeconomic indicators: evidence from G7 and ASEAN countries. The aim was to investigate the impact of government debt on certain macroeconomic and wellbeing indicators in a group of industrialized and developing countries. The results of empirical analysis of correlation indicated a positive relationship between government debt and macroeconomic indicator (GDP per capita) in G7 countries while government debt of ASEAN countries has a negative impact on macro-economic and wellbeing indicators.

Morufu and Babatope (2017) appraised the influence of IGR on the revenue profile of Southwestern State governments of Nigeria and how this has impacted their capital expenditure between 2006 and 2015. The research design adopted was expo facto and descriptive research of a survey type. The adopted descriptive statistics and OLS Multiple regression analysis to carry

out its study. Three states Osun, Ondo, and Ekiti were selected from the six Southwestern states to form the sample for the study. Data were collected from secondary sources where specific variables such as State IGRs and revenue profile/total revenue and capital expenditure were extracted from the financial statements of the selected states collected from the State Government's Accountant General Offices for the period. Findings from the study showed that there was a significant difference between the major components of IGR of the sampled States except for taxes. The result of the study further revealed that there was a significant positive correlation between internally generated revenue and the revenue profile of Ekiti, Osun, and Ondo States. The study further showed that the IGR had no significant influence on the capital expenditure of Ekiti and Ondo State respectively. However, there was a significant influence of Osun state IGR on capital expenditure.

The empirical literature reviewed consistently shows that Internally Generated Revenue (IGR) plays a crucial role in the fiscal management and economic development of Nigerian states and local governments. Most studies agree that components of IGR such as Pay As You Earn (PAYE), direct assessment, and road taxes have significant impacts on government finance, but the effectiveness and efficiency of revenue utilization vary across regions and levels of government.

Fasoye (2020) found that PAYE and road taxes are the main determinants of IGR, largely because they are less vulnerable to corruption compared to other revenue sources. However, the study also pointed out the underutilization of alternative IGR sources by state governments.

Similarly, Nwafor et al. (2021), studying land-based revenues, observed persistent underperformance relative to budgeted expectations, highlighting inefficiencies, leakages, and the need for improved monitoring systems. Nkechi and Onuora (2018) reported a significant relationship between IGR and infrastructure development in the southeastern states, suggesting that increased IGR can directly support developmental goals if properly harnessed.

At the local government level, Amin (2018) revealed that despite potential revenue from markets and permits, inefficiencies in tax enforcement and poor service delivery discouraged tax compliance, weakening the development impact of IGR. More so, Peter and Ferdinand (2018) emphasized that without a corresponding rise in internally generated revenue, increases in government expenditure widen budget deficits, advocating for a strategic focus on boosting IGR to support capital projects.

Studies like Ironkwe and Ndah (2016) noted that while tax revenues positively impact public projects like road construction, the influence is often statistically insignificant, underlining governance and administration challenges. Other macro-level studies (Sylvester, 2020; Amani, 2018) on public debt and economic growth confirm that rising government debt, without sufficient domestic revenue backing, can depress investment and economic performance.

Overall, the common thread across the reviewed studies is that although IGR has the potential to enhance fiscal health and reduce debt dependency, issues like poor administration, weak enforcement, corruption, and a narrow tax base undermine its effectiveness. Most studies recommend stronger compliance measures, modernization of tax systems, and better fiscal discipline as necessary reforms to maximize the impact of IGR.

**3.0 Methodology**

The research design adopted for this study is an *ex-post facto* research design, which is appropriate given the nature of the investigation. The population of this study consist of the six (6) States in the North Central region of Nigeria which includes Benue, Kogi, Kwara, Nasarawa, Niger and Plateau. The sample size consists of the 6 states in the North Central region (Benue, Kogi, Kwara, Nasarawa, Niger and Plateau). Total enumeration sampling technique was used because all the population elements were used as sample subjects. Secondary data were extracted from the published financial statement of the 6 North Central States from 2010 to 2023. Data was analysed using descriptive and inferential statistics and data for variables were all logged.

$$Y = f(X)$$

Where:

Y = Dependent Variable

X = Independent Variable

Y = y<sub>1</sub>

X = x<sub>1</sub>, x<sub>2</sub>, x<sub>3</sub>, x<sub>4</sub>

Where:

**Y = Debt Sustainability (DS)**

y<sub>1</sub> = Size of Domestic Debt (SDD)

**X = Internally Generated Revenue (IGR)**

x<sub>1</sub> = Pay As You Earn (PAYE)

x<sub>2</sub> = State Direct Assessment (SDA)

x<sub>3</sub> = State Road Tax (SRT)

x<sub>4</sub> = Other Revenue Generated by State (ORS)

**Functional Relationship**

$$SDD = f(\text{PAYE, SDA, SRT, ORS}) \dots\dots\dots\text{eqn1}$$

Model Specification

$$SDD_{it} = \beta_0 + \beta_1\text{PAYE}_{it} + \beta_2\text{SDA}_{it} + \beta_3\text{SRT}_{it} + \beta_4\text{ORS}_{it} + \epsilon_{it}$$

**4.0 Results and Findings**

**Table 1:**

***Descriptive Statistics***

Variable	Obs	Mean	Std. Dev.	Min	Max
CID	84	3.5	1.718	1	6
YEAR	84	2016.5	4.055	2010	2023
PAYE	84	9.748	.232	9.165	10.237
SDA	84	7.954	1.396	0	9.381
SRT	84	8.353	.308	7.42	8.838
ORS	84	9.45	.566	8.093	10.673
SDD	84	9.948	2.796	0	11.272

**Source:** Author’s Computation (2025).

**Interpretation**

**Pay as You Earn (PAYE):** PAYE has a mean of 9.748 indicating that the average amount generated amounted to 9.748billion and the standard deviation of 0.232 shows a moderate dispersion from the mean. The minimum of 9.165 and maximum of 10.237 shows consistent values close to the mean with limited variability showing the least and highest amount generated from PAYE within the period under consideration.

**State Direct Assessment (SDA):** SDA has a mean of 7.954 indicating that the average amount generated amounted to 7.954billion and the standard deviation of 1.396 shows a moderate dispersion from the mean. The minimum of 0 and maximum of 9.381 shows moderate variability with some observations as low as 0 within the period under consideration.

**State Road Taxes (SRT):** SRT has a mean of 8.353 indicating that the average amount generated amounted to 8.353billion and the standard deviation of 0.308 shows a low variability from the mean. The minimum of 7.42 and maximum of 8.838 shows the lowest and highest amount respectively that was actually generated from road taxes within the period under consideration.

**Other Revenue Generated by States (ORS):** ORS has a mean of 9.45 indicating that the average amount generated amounted to 9.45billion and the standard deviation of 0.566 shows a limited variability with all values clustered around the mean. The minimum of 8.093 and maximum of 10.673 shows the lowest and highest amount respectively that was actually generated from other revenue generated by the states within the period under consideration.

**Size of Domestic Debt (SDD):** The mean value for SDD is 9.948 suggesting that the amount of domestic debt under the period under consideration amounted to 9.948billion while the standard deviation of 2.796 shows a relatively high variability suggesting significant differences across the period of study. The minimum of 0 and maximum of 11.272 shows the least and highest amount that accrued for domestic debt in the states.

### Test of Hypothesis and Discussion of Findings

Table 2 Test of Hypothesis: Internally Generated Revenue and Size of Domestic Debt

**Table 2:**

***Regression result of Model***

Dependent – SDD	Cross-sectional time-series FGLS regression			
	Coeff	St.Err	z-value	p-value
CONSTANT	-48.229	11.004	-4.38	0.000
PAYE	6.757	1.578	4.28	0.000
SDA	0.441	0.184	2.400	0.016
SRT	-1.041	1.141	-0.910	0.361
ORS	-0.261	0.581	-0.450	0.653
Adj R-squared	0.266			
R-squared	0.301			
Wald Chi2(4)	F(4, 79) = 41.98 (0.000)			
Hausman Test	Chi2(4)= 1.54 (0.8193)			
Breusch-pagan LM Test (RE)	Chiabr2(01) = 0.00 (1.000)			
Heteroskedasticity Test	Chi2(1) = 65.88 (0.000)			
Serial Correlation Test	F (1, 5) = 70.525 (0.004)			

**Source:** Author’s Computation (2025).

Table 2 presents the results of Model 1, the choice of the most appropriate estimating technique for this study was informed by various diagnostic tests. The Hausman test was used to compare the Fixed Effects (FE) and Random Effects (RE) models to determine the suitability of the RE model. The null hypothesis of the test posits that the difference in coefficients between FE and

RE models is not systematic. The results showed a Chi-square value of 1.54 with a p-value of 0.8193, which is greater than the 5% significance level. Thus, the null hypothesis could not be rejected, indicating that the RE model is more appropriate for the data. This was further confirmed by the Breusch-Pagan Lagrangian Multiplier (LM) test, which yielded a Chi-square value of 0.00 and a p-value of 1.000. The result implies that Pooled Ordinary Least Square regression analysis is more appropriate compared to random effect technique.

Tests for heteroskedasticity were conducted to examine whether the variance of the error terms is constant. The heteroskedasticity test resulted in a Chi-square value of 65.88 with a p-value of 0.000, indicating the presence of heteroskedasticity, as the p-value is less than 0.05. Additionally, the model was tested for serial correlation using the Serial Correlation Test, which generated an F-statistic of 70.525 with a p-value of 0.004. This result indicates the presence of first-order autocorrelation. The diagnostic tests revealed econometric problems, including heteroskedasticity, serial correlation, and cross-sectional dependence, making the use of a more robust estimation technique necessary. Given the diagnostic results, the regression analysis was conducted using the Feasible Generalized Least Squares (FGLS) estimation method, which accounts for heteroskedasticity and autocorrelation. This ensures that the results are reliable and robust.

**Interpretation of Regression Results**

The regression model evaluates the effect of Internally Generated Revenue (IGR) components on domestic debt (SDD), expressed as:

$$SDD_{it} = \beta_0 + \beta_1PAYE_{it} + \beta_2SDA_{it} + \beta_3SRT_{it} + \beta_4ORS_{it} + \epsilon_{it} \text{ -----Model 1}$$

$$SDD_{it} = -48.229 + 6.757PAYE_{it} + 0.441SDA_{it} - 1.041SRT_{it} - 0.261ORS_{it}$$

The regression analysis showed the following results:

The coefficient for PAYE (Pay As You Earn) was 6.757, indicating a positive and statistically significant relationship with domestic debt. This suggests that a one percent increase in PAYE leads to a 6.757 percent increase in domestic debt, as indicated by the p-value of 0.000, which is less than the 5% significance threshold. PAYE is a major revenue source and strongly influences the level of domestic debt in the model.

The coefficient for SDA (State Direct Assessment) was 0.441, indicating a positive and statistically significant relationship with domestic debt. This means that a one percent increase in SDA is associated with a 0.441 percent increase in domestic debt. The statistical significance of this relationship is confirmed by the p-value of 0.016, which is less than 0.05, showing that SDA significantly contributes to domestic debt.

The coefficient for SRT (State Road Tax) was -1.041, suggesting a negative relationship with domestic debt. However, this relationship is not statistically significant, as evidenced by the p-value of 0.361, which exceeds the 5% significance level. The value of the coefficient implies that 1% increase in SRT revenue is associated with a 1.041% decrease in domestic debt, holding other factors constant. However, this relationship is not statistically significant (p > 0.05), indicating that state road tax revenue does not have a significant impact on domestic debt in this model.

The coefficient for ORS (Other Revenue Sources) was -0.261, also indicating a negative but statistically insignificant relationship with domestic debt, meaning that 1% increase in ORS revenue is associated with a 0.261% decrease in domestic debt, holding other variables constant. However, like SRT, this relationship is also statistically insignificant ( $p > 0.05$ ), the p-value of 0.653 confirms the lack of statistical significance, suggesting that ORS does not significantly influence domestic debt.

The regression model as a whole was statistically significant, as evidenced by the Wald Chi-square statistic of 41.98 with a p-value of 0.000. This indicates that the independent variables collectively have a significant impact on domestic debt which implies that internally generated revenue has significant effect on domestic debt of North central Nigeria.

The R-squared value of 0.301 suggests that approximately 30.1% of the variation in domestic debt is explained by all the four constructs of the internally generated revenue (PAYE, SDA, SRT, and ORS) in the model while the remaining 70% represents other factors not captured in the model such as capital spending and external debt. While the adjusted R-squared value of 0.266, which accounts for the magnitude of the impact of the significant predictors only, implies that 26.6% changes in domestic debt is accounted for by the combined changes in pay as you earn and direct assessment.

At the 5% level of significance, the result of the Wald-statistics of 41.98 with a degree of freedom of  $F(4, 79)$  and having a probability value of 0.000 which is less than the 5% chosen significant level of the study, this study thus decide that the null hypothesis for model One which states that “Internally Generated Revenue does not significantly affect the size of domestic debt in North Central, Nigeria” be rejected while accepting the alternate hypothesis and concluded that “Internally Generated Revenue significantly affect the size of domestic debt in North Central, Nigeria”

### **Discussion of Findings**

The study examined the effect of Internally Generated Revenue (IGR) on the size of domestic debt in North Central Nigeria. Regression results revealed that PAYE ( $\beta = 6.757, p < 0.01$ ) and SDA ( $\beta = 0.441, p = 0.016$ ) had a statistically significant positive impact on domestic debt, while SRT and ORS were not significant predictors. These findings suggest that as PAYE and SDA increase, domestic debt also rises, implying that states rely on IGR but still accumulate debt, possibly due to fiscal mismanagement or inefficiencies in public finance administration. The adjusted  $R^2$  of 0.266 suggests that 26.6% of variations in domestic debt can be explained by changes in PAYE and SDA.

Hypothesis one examined the effect of Internally Generated Revenue on size of domestic debt. The results show that PAYE and SDA are very strong predictors of IGR in influencing domestic debt which was in line with the *a priori* expectation of the study. The result of the study agreed with the results of prior studies such as Fasoye (2020); Nwafor et al (2021); Nkechi and Onuora (2018); Sylvester (2020); Amin (2018) and Amani (2018) who also investigated the effect of IGR on state government borrowing in Nigeria. The results from the study all shows that IGR has a positive and significant effect on size of domestic debt or borrowing. The result of the present study also aligns and conforms with their results judging from the coefficient estimates

and probability values that gave rise to making a decision of rejecting the null and accepting the alternate that there is a significant and positive effect.

In the same vein the result and findings of the study also agrees and aligns with the studies of Bakare et al (2016); Oyedele et al (2016); Serrao (2016) and Abula and Ben (2016) who also investigated Internally generated revenue and public debt in Nigeria and their findings show that there is a significant positive effect between IGR and size of domestic debt which also conform to *a priori* expectation of the study.

## **5.0 Conclusion and Recommendations**

The result of the study showed that internally generated revenue has significant effect on size of domestic debt thereby answering research question one. Conclusively, the study concluded that that internally generated revenue significantly affects the size of domestic debt in North Central States in Nigeria.

Based on the findings and conclusion of the study, the following recommendations are made: The government of the States in North Central Nigeria should focus on leveraging Pay As You Earn (PAYE) as a critical revenue source by introducing policies that encourage formal employment and should adopt digital PAYE portals and automated assessments. Relevant tax authorities should implement systems to enhance the efficiency of collecting State Direct Assessment (SDA) taxes by targeting informal sector participants with simplified tax structures and public awareness campaigns

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