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GOVERNMENT INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM (GIFMIS) AND PUBLIC DEBT MANAGEMENT IN NIGERIA

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Abstract

This study investigated the relevance of GIFMIS in the management of public debt in Nigeria. GIFMIS is presented as dummy variables (0) and (1) for periods before and after GIFMIS, respectively. Debt management is represented by debt service expenditure for eighteen (18) fiscal years (2003-2021), covering nine years (2003-2011) prior to (2012) and nine years (2013-2021) after (2012) GIFMIS implementation in Nigeria. Expost-Facto research design was used, and Auto-Regressive Distributed Lag (ARDL) was estimated using the Ordinary Least Squares (OLS) approach. The statistical package used for analysis is e-view 10.0. The R-squared coefficient suggested that the change in GIFMIS caused an 8.73% shift in debt management. The impact of GIFMIS on Nigerian debt management was determined to be beneficial but not significant. This suggests that the implementation of the GIFMIS program, resulted in a positive boost in debt management in Nigeria, with a 41.25% increase at an insignificant rate. It consequently determined that GIFMIS is of paramount importance in debt management in Nigeria based on the difference it has made within the short period of its adoption in debt management in Nigeria. Finally, the report recommends that more efforts be directed towards extending the implementation of technological innovations in Nigeria to enhance accountability and transparency in development planning, budgeting, and debt management.

Keywords: *GIFMIS, Public Debt Management, Expansionary Fiscal Policy, Monetary policy, Debt Sustainability Framework,Transparency*

INTRODUCTION

Economic policies will continue to be maintained, regulated, and managed by the government in an effort to accomplish its goals. Public debt is created by the government's regulation of fiscal and monetary policies in an effort to ensure economic stability. It guarantees that public resources are raised, managed, and spent by the government and its ministries in an effective and transparent manner with the goal of enhancing service delivery. Public debt includes financial obligations resulting from borrowing, credits granted under supplier credit agreements, the issuance of debt securities for purposes other than borrowing money (such as to settle accumulated arrears), and the assumption of payment obligations under a government loan guarantee (i.e., the government assumes the loan from the borrower in the event of default).

The management of public debt involves figuring out how much of it is privately held. By means of its fiscal policies, the government issues the securities that establish the composition of the public debt. The government assumes responsibility for the borrower's loan, etc.

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Therefore, public debt is a vital tool that the government uses to finance public spending, especially in situations where fiscal (taxing and cutting public spending) and monetary policy methods are ineffective. In order to improve aggregate demand and supply, consumption, and investment in production, expansionary fiscal policy refers to measures intended to boost government spending and decrease taxes. This will help to stimulate economic growth and development and eventually lead to full employment. In this case, the government typically uses deficit budget financing, or debt instruments, to make up for the shortfall between revenue and spending. Nigeria's national debt has historically existed before the country gained its independence in 1960. Around 1923–1924, the British government borrowed £5.7 million on behalf of Nigeria, with an interest rate of 2.5% annually, to be repaid over 20 years. By the end of 1936, Nigeria had borrowed a further £4.89 million; between 1946 and 1948, it borrowed an additional £5.74 million; and by the end of 1952, Nigeria owed £21.24 million in total debt. At the time of independence, Nigeria owed £17 million (Okeowo et al., 2019). The subsequent post-independence debt buildup leaned toward internal or domestic credit facilities until the $31 million Paris Club loan, which had an annual interest rate of 3.5%.

Between 1980 and 1999, there were significant public debt problems that culminated at the end of 2005, when Nigeria's debt portfolio of over $36 billion and total revenue of roughly $9 billion made it clear that the country could not continue. The Debt Management Office was created by the Federal Government in 2000 in order to create a framework for handling the crippling debt load of the country. Items 7 and 50 of the Exclusive Legislative List under the Second Schedule to the 1999 Constitution specify that the National Assembly (NASS) has the sole authority to enact rules governing borrowing both domestically and internationally.

In accordance with this constitutional mandate, the NASS passed the Fiscal Responsibility Act (FRA), 2007 and the Debt Management Office (DMO Establishment, etc. Act, 2003). While the FRA addresses public financial management with regulations on the total public debt, authorization for borrowing by all tiers of government, and use of borrowed funds, among other things, the DMO Act is the legal document that established the DMO and outlines its mission and responsibilities (DMO, 2022).

The DMO's operations have contributed to the development of worldwide standards for assessing Nigeria's debt statistics, among other things. The agency's mandate included managing and reporting the government debt portfolio on a regular basis and offering a strategy framework for managing it. Notwithstanding these initiatives, Nigeria's debt-to-GDP ratio increased from 13.7% in 2014 to 29.3% in 2021 as the Federal Government found it difficult to sustain essential spending in the face of declining commodity prices and income. The public debt is still considered sustainable as of right now, but in recent years, the debt service-to-revenue ratio has increased to dangerously high levels. Systematic underestimation of the budget deficit also makes it difficult to issue enough public debt, which forces government to borrow from the CBN. In addition to being expensive, the large amount of CBN borrowing affects borrowing strategies and the debt portfolio because it is not included in the official public debt stock (Ogebe et al, 2022). These difficulties highlight how crucial it is to handle public debt effectively and transparently using financial technology advancements like the Government Integrated Financial Management Information System (GIFMIS). With the aid of an integrated system for the financial administration of line ministries, spending agencies, and other public sector operations, GIFMIS explicitly refers to the computerization of public financial management (PFM) procedures, ranging from budget preparation and implementation to accounting and reporting.

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Thus, the purpose of this paper is to highlight the usefulness of GIFMIS in guaranteeing accountability, efficiency, effectiveness, and transparency in the management of Nigeria's public debt.

LITERATURE REVIEW

2.0 Conceptual Clarifications

The concepts of GIFMIS and Pubic Debt management are hereby clarified.

2.1 Government Integrated Financial Management Information System (GIFMIS)

GIFMIS is a financial technology information system that keeps track of financial events, compiles financial data from various accounting systems, and is set up to function in accordance with local requirements. With the aid of an integrated system for the financial management of line ministries, spending agencies, and other public sector operations, GIFMIS more precisely refers to the computerization of public financial management (PFM) procedures in the government sector, ranging from budget preparation and execution to accounting and reporting. In order to drastically reduce manual payment procedures and hasten the adoption of end-to-end electronic payments, the GIFMIS initiative was created in Nigeria to integrate licensed e-payment solutions with in-house accounting, third-party payments, payroll, pension, debt management, and Enterprise Resources Planning (ERP).

The aforementioned accomplishments were made possible by leveraging technological advancements like Application Programming Interfaces (APIs), which facilitate communication between two or more online services and offer the chance to develop solutions that integrate and combine various data sources and services. Enhancing economic management, increasing transparency, and facilitating central control and monitoring of spending are the goals of its implementation.

According to Elikwu (2016), GIFMIS was created to strengthen the efficiency of public spending by focusing on budget results and effect, identifying silent leaks in budget execution, and creating an integrated budget based on priority development projects with increased accountability.This includes significant modernization, changes to policies and regulations, and integrated automation of all financial management and procurement procedures.

For financial and cash management, commitment control, payment control, multi-year budgeting, annual budgeting, and economic planning, GIFMIS offers a solid foundation. (Finance Federal Ministry, 2016)

2.2 Public Debt

In the context of financial management, debt is the term used to describe assets or funds utilized by a business that were not contributed to or in any way owned by its owners.

It is a vital instrument for financing public spending, especially in situations where other fiscal and monetary policy tools are ineffective. The government's commitments to foreign organizations like the IMF and AFDB are referred to as external debt, whilst its duties to domestic citizens are referred to as internal debt.

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The key to faster economic growth is prudent borrowing to fund strategic public infrastructure development. However, excessive borrowing without proper investment planning would result in a heavy debt load and interest overhang, which could have a number of negative effects on the economy. Over time, this process has left the majority of governments with enormous outstanding debts (Anaemena *et al*., 2023).

Additionally, public debt is defined by Aybarc (2019) as the government's legal duty to reimburse principal and interest to the holders of predefined rights in line with a specific timetable. This refers to government-issued IOUs (debt instruments) to people, businesses, and the government. That is, in order to meet their immediate and long-term financial needs that cannot be met by borrowing from other sources, governments, like individuals, borrow from willing creditors. When government revenue is insufficient to cover government spending (deficit budgeting), borrowing (debt finance) is necessary to close the spending gap.

2.2.1 Public Debt Management

To manage something is to have satisfactory control over it. Therefore, the management activity that deals with the planning and control of debt resources or instruments, that is, the planning, directing, monitoring, organizing, and controlling of the use of financial resources obtained both domestically and abroad through borrowing is known as public debt management. Planning, organizing, acquiring, and using government debt resources are among its concerns, as is creating suitable policies to fulfill the goals of the people in that society (Alvin, 2021).

In line with a reasonable level of risk, Oko (2023) states that "debt management is the process of establishing and executing a strategy for managing government's debt in order to raise the required amount of funding at the lowest possible cost over medium to long run." In order to guarantee that managers use debt effectively and efficiently in their choices and operations, specific tactics known as public debt management methods are needed.

These tactics are predicated on the government's declared goals for debt management. The IMF and World Bank state that any government's goal in managing its public debt should be to make sure that, over the medium to long term, the government's financing requirements and payment commitments are satisfied at the lowest feasible cost while maintaining a reasonable level of risk.

When public debt is not effectively handled with the aforementioned goal in mind, it reduces the government's capacity to make investments in profitable endeavors, construct infrastructure, and set up organizations to train competent workers. Therefore, public debt is not always a negative thing, particularly when it is used wisely to build infrastructure and productive assets that can lead to job possibilities. However, debt crises are unavoidable when loan revenues are misused or allocated to unproductive purposes.

Therefore, public debt management is the strategic approach to using debt so that only strategic and absolutely necessary debt with guarantees of prudent management is obtained. The Debt Management Office Act is the legal document that established the Debt Management Office in Nigeria and outlines its duties, while the Fiscal Responsibility Act addresses public financial management by regulating the total amount of public debt, allowing borrowing by all levels of government, and governing the use of borrowed funds, among other things.

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2.2.2 GIFMIS and Debt Management in Nigeria

Since borrowing decisions made by the government can significantly affect its budget and financial situation, a sound debt management system is essential. Situations where the main deficit is big or growing and the cost of the debt rises could cause the government to raise taxes or reduce spending, and in the worst cases, default on its debt. The result is that effective debt management requires a thorough grasp of the government's assets and obligations in addition to its revenues and expenditures (World Bank, 2017).

The public debt situation in Nigeria was such that there were no clear-cut development initiatives linked to borrowing, resulting in a lack of sufficient accountability and transparency, i.e. debt decisions were ad hoc and unrelated to a specific budget or development plan.

Prior to the implementation of GIFMIS in debt management in Nigeria, the Commonwealth Secretariat - Debt Recording and Management System software (CS-DRMS) was used to manage and report debt data, which is an integrated tool for recording, analyzing, and reporting public sector debt. The program takes a holistic approach, covering a wide range of debt liability and debt-related financial instruments for both sovereign and sub-national governments.

CS-DRMS is intended to manage both conventional and sophisticated financial agreements (loans and securities) provided by a diverse set of creditors and capital markets. The software, which promotes appropriate debt management practices, is a comprehensive debt data repository system that assists borrowers in keeping their financial positions up to date. It facilitates critical debt processes such as debt service payments, monitoring of new borrowings, and a variety of analytical functions (DFI, 2024). This software was previously used to evaluate debt data independently of budget formulation, budget planning, budget execution, monitoring, auditing, and budget reporting, with a clear separation of duties between Debt Management and Monetary Policy Operations.

The DMO manages the country's public debt, whilst the CBN handles monetary policy management. However, given the relationship between fiscal (including debt management) and monetary policies and their implications for macroeconomic stability, there are various platforms aimed at promoting information sharing for the purpose of planning and policy formulation, particularly on the government's current and future liquidity requirements. The Monetary and Fiscal Policies Coordinating Committee (MFPCC) and the Cash Management Committees (CMC) provide a platform for the clarification and harmonization of the objectives of Public Debt Management Policies, Fiscal and Monetary Policies, and the review of the FGN's cash-plan and cash flow projections, after which the Minister approves the cash allocation to the MDAs and issues warrants, among other things.

Members of the Committee are drawn from the DMO, FMF, FMBNP, CBN, BOF, NBS and

OAGF, FIRS, NCS and the NNPC.

In its 2018-2022 National Debt Management Framework, the federal government decided to move DMO from the CS-DRMS software to the federal government's "Economic Recovery and Growth Plan" (ERGP), which quickly integrated the DMO's activities into the GIFMIS software as the base software for the implementation of the federal government's ERGP (DMO,2022). This migration effectively moved debt management activities in Nigeria into the mainstream national budgeting framework under GIFMIS, with the goal of promoting the integration of

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debt management into budget formation, budget planning, budget execution, monitoring, auditing, and reporting.

GIFMIS has succeeded in transforming the entire budget framework in recent years by enforcing efficiency, effectiveness, accountability, and transparency. In debt management, in particular, the Nigeria National Debt Management Strategy 2020-2023 report, published by DMO, has identified the following significant improvements. This includes: Annual Borrowing Plans: The chosen Strategy will serve as the foundation for constructing the Annual Borrowing Plan, which will meet the Government's funding needs for each fiscal year. The Borrowing Plan will take into consideration the Government's cash flows and variations in the relevant fiscal years, and it will be tailored to meet the various strategic objectives.

Investor Relations: The DMO has established and maintained continuous communication with various operators and stakeholders in the domestic and foreign capital markets, particularly Primary Dealer Market Makers (PDMMs) and investors. This was useful and actively pursued during the early stages of the market's development. Debt Transparency - Debt Reporting: The DMO has effectively used current and up-to-date data to provide a variety of information about public debt management, such as the National Debt Management Framework, Annual Report and Financial Statements, Debt Management Strategy, Strategic Plan, Primary and Secondary Market Rules, Issuance Calendar, and Results.

Disseminating, monitoring, and reviewing the strategy: The Debt Management Strategy, 2020-2023 Report, together with the selected Strategy, has been published and distributed to important stakeholders and the general public via suitable channels. The underlying assumptions, key risk criteria, and targets outlined in the Report for the chosen Strategy for borrowing in the medium term will be compared to the results. These serve as the foundation for monitoring the Strategy's implementation and reporting any discrepancies. The Strategy's annual assessment and monitoring in terms of the stated Cost and Risk Targets is carried out consistently in accordance with the MTEF, which is updated annually.

According to Marcelo (2022), the merger of the Integrated Financial Management Information System (IFMIS) and the Public Debt Management System (PDMS) is based on the following essential principles: Uniqueness refers to the unique data and transaction records that make up the system in an integrated and efficient manner. Integrity: The system incorporates all the Government's public debt operations. Punctuality refers to meeting all of the Government's financial responsibilities on time. Accuracy: ensuring the dependability of processed information, particularly that related to public debt service payments. Coherence: Ensure that processed information is consistent and linked to other related public resources and government administrative sectors.

He also discovered certain distinguishing characteristics of PDMS, such as: Horizon: IFMIS operates on an annual basis, whereas debt systems consider the short, medium, and long term. Currency: IFMIS transactions are reflected in the national currency, whereas Debt Systems operate in multiple currencies. Projections: The Debt Management system may compute and forecast debt service obligations based on contractual data and received or predicted operational disbursements, whereas the integrated system is primarily a transactional system.

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2.3 Theoretical Framework

2.3.1 The Classical Theory of Public Debt

In Adam Smith's "The Wealth of Nations (1776)" The Classical Hypothesis of governmental Debt examines the economic implications of governmental debt. Smith contends that governments should not run budget deficits because the buildup of debt is "pernicious" to the nation, even if it is entirely owed to domestic investors. Smith criticized the mercantilist concept of debt by paying interest on public debt, which he compares to "the right hand, paying the left hand". According to Smith, this was "an apology founded entirely on the sophistry of the mercantile system." This is because the requirement to redeem the debt would quickly result in increasing taxation, triggering local capital flight and currency devaluation, both of which will have a detrimental impact on domestic producers. According to Smith, debt impedes the "natural progress of a nation towards wealth and prosperity" because resources that could be used effectively in the private sector of the economy are diverted by the state to finance its unproductive operations. Adam Smith supported balanced budgets, in which all government spending is funded by taxes. "Budget deficits can only be justified in emergency situations, such as wars or natural disasters. In such situations, Smith believes that the way of financing public expenditures (i.e., through taxation or the issuance of public bonds) is vital for capital formation. "The amount of money raised by the government through borrowing discourages an equal amount of private investment. As a result, the basic premise is that Smith, like most classical economists, associates savings with investment. As a result, taxation inhibits new investment and thus the accumulation of new capital while leaving existing productive capacity intact; however, public borrowing undermines existing productive capacity by diverting savings from the "maintenance of productive labour" to unproductive and wasteful uses. In general, the two means of financing government spending are not equal, and taxation is preferred over borrowing because the latter reduces savings, that is, the investible product, and hence the nation's accumulation capability. This theory specifically pointed to the government's use of borrowed funds in a wasteful manner, depicting the true situation of borrowed fund utilization in Nigeria, which flourished primarily as a result of a lack of accountability and transparency in the acquisition and utilization of borrowed funds in Nigeria over the years, lending credence to the use of GIFMIS in public debt management.

2.3.2 Keynesian theory of Public Debt:

The World War I (1914–1918) and the Great Depression (1930s) was a watershed moments in global public borrowing policies. During this period, John Maynard Keynes supported public borrowing as a means of financing the war in England, arguing that it would be beneficial. During the process that began with this plan, public borrowing became an essential source of funding for governments. Contrary to classical theory, the economic anomaly generated by the Great Depression of the 1930s paved the way for the development of the Keynesian theory of public debt. The classical theory's opposition to public borrowing was founded on the idea that the economy is at full employment, hence public spending is thought to be unproductive.

However, Harris S. E. a Keynesian proponent believes that once the economy experiences unemployment or flexibility in monetary supplies, the case for public borrowing would be enhanced, and that government expenditures can be constructive rather than wasteful. As a result, public debt has become a necessary means of creating employment and has evolved into an economic policy tool. While public borrowing becomes an essential source of funding, it also creates debt-interest cycle, poverty, and crises which consequently impose a significant

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debt burden on future generations.

Thus the Keynesian theory of public debt is concerned with macro economic variables and not with individual utilities. It assumes the whole economy as a unit. Modern economists believe that internally held public debt involves no burden since we owe it to ourselves. while external debt is regarded as definite burden since repayment of principal and interest to foreign countries are entailed, such repayments involves a transfer of real goods and services from the debtor to the creditor country in payment of interest and principal amount.

This study holds the view of the Keynesian theory that public debt is an essential instrument of economic policy given that it is done with all sense of responsibility, accountability and transparency towards the achievement of stated public debt policy goals; this is the main goal of deploying GIFMIS in the management of public debt in Nigeria.

2.4 Empirical Studies

The impact of debt management on Nigeria's economy in the face of declining oil revenue was examined by Elechi, Ohazuruike, and Chukwurah (2020). They based their analysis on the dependency paradigm and data from documentary sources using a qualitative descriptive method of analysis. The results demonstrated that the Nigerian national budget has been unduly dependent on the oil industry over the years, with government revenue and expenditures constantly fluctuating in tandem with changes in oil prices and production dynamics. In order to keep the impoverished debtor countries dependent, the creditor nations used debt as an imperialist and neo-colonial tool. The debt relief that Nigeria received was intended to keep Nigeria's debt within a medium-term range, and the debt rescheduling arrangements were set up so that interest must still be paid on the debt in the future. This highlighted the creditors' mindset toward Nigeria's debt issue. While the nation continues to suffer from deteriorating infrastructure, antiquated social amenities, and a weak institutional framework, the government has continued to borrow money despite the DMO's efforts to manage Nigeria's debt profile, citing the same justification offered by previous administrations: the money is to be used for investment and development projects. The study suggests, among other things, that the Debt Management Office establish guidelines to guarantee that borrowed money is invested appropriately and is tracked for openness and accountability.

This suggestion stands out as a wake-up call for the implementation of cutting-edge technology that can guarantee the responsible and transparent use of borrowed funds while connecting them to particular development projects that are allocated for in short-, medium-, and long-term budget plans.

César and Leonardo (2017) examined how well the Debt Sustainability Framework (DSF) worked in low-income nations in order to examine earlier approaches in the following crucial areas: strengthening the evaluation of nations' ability to carry debt by using a wider range of national and international elements rather than just the Country Policy and Institutional Assessment (CPIA) score; introducing instruments that enable a more thorough examination of baseline macroeconomic forecasts; Standardized stress tests should be recalculated to more accurately reflect the magnitude of shocks, and customized scenario stress tests should be included to assess risks associated with natural catastrophes, unstable export prices, market-financing shocks, and exposure to contingent liabilities; Enhancing the guidance for a more impartial application of judgment while also making it simpler by significantly lowering the number of debt indicators, thresholds, and standardized stress tests; and offering a more

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comprehensive description of debt vulnerabilities (including an improved assessment of domestic debt vulnerabilities and new tools for assessing vulnerabilities to changes in market financing conditions and for better discriminating across countries within the moderate risk category). The CPIA, an index created annually by Bank employees to categorize nations according to their ability to bear debt, and a set of threshold levels for specific debt burden indicators associated with a higher risk of debt distress that are statistically estimated for different levels of debt-carrying capacity were intended to address the shortcomings of the CPIA.

To assign risk ratings of foreign debt distress, staff judgment is combined with baseline macroeconomic estimates and stress test scenarios that are assessed in relation to these thresholds. Naturally, the accuracy of medium- to long-term macroeconomic forecasts, which are crucial components of the DSF created by country teams, determines the worth of these risk assessments. With significant practical ramifications for multilateral organizations and other creditors, the DSF continues to be the mainstay of assessments of the risks to the sustainability of debt in low-income countries. An essential factor in the Fund's debt limits policy (DLP) and the Bank's non-concessional borrowing policy (NCBP) is a country's DSF risk assessment. It also affects the mix of grant and loan assistance that the International Development Association (IDA) provides for the nation. The African Development Bank is one of several money deposit banks that have connected the DSF risk assessment to their lending practices. Many debtors express concerns that the framework is restricting their ability to borrow for development, yet they frequently use it to make well-informed borrowing decisions.

The Low Income Countries DSF has garnered more attention from civil society organizations, who have pushed for its usage as a tool to assist figure out how to fund LICs' significant development requirements in light of the Sustainable Development Goals (SDGs). To forecast debt distress, the study employed a statistical model. The DSF uses the estimated model to determine debt thresholds consistent with various carrying capacities for debt once the model identifies the major factors influencing the likelihood of debt distress. The model must be based on accurate debt distress episode identification and include appropriate explanatory parameters in order to be successful in forecasting financial distress. Using this model, the following was created: The recognized categories of low, moderate, high, and in debt distress are used to rate the risk of external financial distress. Low, moderate, high, or in debt distress is a grade on the overall risk of debt distress, where vulnerabilities related to public domestic debt levels are a major worry. The study found that a number of technical problems that raise the risk of false alarms and reduce the predictive capability to identify debt distress events were not addressed by the current debt sustainability framework, including The LIC-DSF rules do not specifically call for a DSA evaluation of data quality, including the standards for accuracy, source identification, and timely reporting. Enhancing these DSA features would help direct technical assistance to national debt reporting institutions and increase country incentives for timely and thorough debt data reporting. The World Bank has the comparative advantage among development partners to take the lead on this issue and can use its convening power to collaborate with other partners to promote better debt data coverage and quality, as evidenced by its management of the Debt Management Performance Assessments and its stewardship of the Debtor Reporting System. Therefore, it suggested adding more important country-specific data to the classification and threshold-setting process in order to better tailor risk assessment to national circumstances and serve as the foundation for a more in-depth discussion of how policy decisions impact debt-related risks.

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Last but not least, improved guidance on the use of judgment, new reality checks and stress test changes, and increased focus on domestic debt vulnerabilities and market-finance risks would enable a better-informed discussion of the risks and trade-offs that national policymakers must undertake. These suggestions were based on the requirement that low-income nations implement an Integrated Financial Management Information System as a condition of receiving loans from the World Bank and IMF. The primary goal of this is to encourage the production of data that is precise, trustworthy, and tailored to the unique characteristics of the various low-income nations.

METHODOLOGY

3.1 Research Design

This study employed ex-post facto research design. The study used only secondary data. The data were drawn from the Central Bank of Nigeria 2022 Statistical Bulletin and the database of the Office of the Accountant-General of the Federation.

This study adopted the Ordinary Least Square (OLS) or Auto-Regressive distributed Lag (ARDL) method of analysis, base on the direction of the unit root to investigate the impact of GIFMIS application on public debt management with focus on budget process in Nigeria. The simple regression analysis test relationship, impact or influence. The justification for adopting the OLS method or the ARDL method is the presence of a dummy variable. GIFMIS which is the main independent variable is measured as dummy variable because GIFMIS cannot be measured directly. The public debt management is the dependent variable.

3.2 Variables Measurement

The study has two variables, the dependent and independent variable.

3.2.1 Dependent Variable

The dependent variable of the study is public debt management. The data for public debt management is drawn from the annual budgets of 2003 to 2011 and 2013 to 2021, indicating budgets for periods prior to and after GIFMIS adoption and implementation in Nigeria.

3.2.2 Independent Variable

The independent variable of the study is GIFMIS application measured by dummy variables, 0 and 1.The dummy variable 0 is used to represent the period before the introduction of GIFMIS while 1 is used to represent the period after the introduction of GIFMIS.

Decision rule
If the p value is greater than the level of significance of $\alpha = 0.05$, then, the null hypothesis is rejected. Otherwise, do not reject.

Statistically, this can be stated as:

Reject H_o if $P < 0.05$

Accept H_o if $P > 0.05$

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3.3 Model Specification

$PDEBTMG_t = \beta_0 + \beta_1 GIFMIS_t + e$ ……..1

Where:

$PDEBTMG_t$ = public debt management at time t.
$GIFMIS_t$ = GIFMIS at time t.
(Before the introduction GIFMIS = 0
after the introduction of GIFMIS=1)
β_0 = constant intercepts
β_1 = the coefficients of independent variables
e= the error term

RESULTS AND DISCUSSION

4.0 Data Presentation

Table 1.1 Data for Analyses

YEARS	(DEBT)	GIFMIS
2003	387.9	0
2004	377.4	0
2005	338.6	0
2006	1,044.80	0
2007	434.4	0
2008	1,294.20	0
2009	1,241.60	0
2010	201.3	0
2011	479	0
2013	387.9	1
2014	377.4	1
2015	338.6	1
2016	1,044.80	1
2017	434.4	1
2018	1,294.20	1
2019	1,241.60	1
2020	1,472.90	1
2021	1,688.50	1

Source: Central Bank of Nigeria (CBN)

Table 2: Descriptive Statistics

	TRANSFERS(DEBT)	*GIFMIS*
Mean	851.34	0.55
Standard Deviation	616.86	0.51
Kurtosis	1.23	-2.18
Skewness	1.18	-0.22
Minimum	201.32	0
Maximum	2542.07	1
Count	18	18

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Table 3: OLS Result for Model

	Coeff	P-value
GIFMIS	0.4125	(0.2060)
Constant	6.2789	(0.0000)
N	18	
R-squared	0.0873	
Serial Correlation	2.1781	0.1457
Heteroscedasticity	0.5658	0.4617

Dependent variable (PDEBTMG) **Source:** E-views 10.0 Output

4.1 Test of Hypothesis

Ho: Government Integrated Financial Management Information System has no significant impact on Public Debt Management in Nigeria

To test this hypothesis, Table 3 was used. The strength of the impact of GIFMIS on Pubic Debt Management (PDEBTMG) is measured by the calculated p-value = 0.2060 and a significance level (α) of 0.05. Since the computed p-value is greater than the significance level (α) of 0.05 the null hypothesis is accepted. Therefore,GIFMIS has no significant impact on Public Debt Management in Nigeria.

4.2 Discussion of Results

As shown in Tabe 2, debt management has an average value of 851.34, with the minimum and maximum values being 201.32 and 2542.07, respectively. The standard deviation is 616.86. The variable GIFMIS has an average value of 0.55, with the minimum and maximum values being 0 and 1, respectively. The standard deviation is 0.51.

The result unveiled the precise location of the distribution's centre through the mean, minimum, and maximum values. Additionally, it demonstrated the dispersion of the variable on either side of the centre using the standard deviation, thereby indicating the uniformity of items in the variable's distribution. The degree of the peak for the variable is determined by the kurtosis statistics, while the symmetry of the series is indicated by the skewness value. Furthermore, the data presented in Table 2 indicate that debt management variable has a right-skewed distribution; while GIFMIS is positively skewed.

A distribution is considered leptokurtic if its kurtosis value exceeds 3. A leptokurtic distribution, with a kurtosis value larger than 3, has a more pronounced peak and lower probability compared to a normal distribution with a kurtosis value of 3. A kurtosis value below 3 indicates a platykurtic distribution, characterized by a flatter and larger peak with a higher likelihood compared to leptokurtic and normal distributions. Significantly, the kurtosis statistics indicate that all the variables are platykurtic because their kurtosis values are less than 3.

Table 4: Correlation Matrix

Variables	DEBT (MGT)	GIFMIS
DEBT (MGT)	1.000	0.311
GIFMIS	0.311	1.000

Source:E-views 10.0 Output

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Table 3 displays the correlation matrix illustrating the association between the independent and dependent variables. The outcome demonstrates a positive correlation between the independent variable and the dependent variable. The correlation coefficients indicate that GIFMIS has a positive connection with debt management with coefficients of 31.1%, the dependent factor exhibited a weak correlation.

Table 3 shows the summary of results for impact of GIFMIS on debt management in Nigeria. . The R-squared indicated that change in the debt management of 8.73% is from the change in GIFMIS. The p-values of Serial correlation and Heteroscedasticity are greater than the significant level of 0.05 respectively. This means that there are no problems of serial correlation and heretroscedasticity. The intercept term value is 6.2789, which is the value of debt management when GIFMIS is kept constant.

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CONCLUSION

The result of the hypothesis indicates that GIFMIS has no significant impact on Public Debt Management in Nigeria. This implies that the introduction of GIFMIS application although brought about a positive increase in public debt management in Nigeria, suggesting that there was increase in efforts in debt management by 41.25% but at an insignificant rate, probably due to the short period of GIFMIS application in public debt management. The result failed to meet the *apriori* expectation of positive and significant impact. It is therefore important to redouble efforts towards deepening the application of technological innovations that fosters efficiency and transparency in development planning, budgeting and public debt management in Nigeria.

RECOMMENDATIONS

The study therefore recommend that GIFMIS application be deployed across the three tiers of government in Nigeria to fully accomplish the benefits of GIFMIS in managing public financial system such as the generation of accurate and timely data for development planning as well as accountability and transparency in the generation and utilization of public financial debt resources.

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