Public Debt, Fiscal Dominance, and Inflation in Nigeria: Evidence From ARDL Analysis

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Abstract

This paper evaluates the dynamic association between public debt, fiscal dominance, and inflation in Nigeria between 1990 and 2023 using the Autoregressive Distributed Lag (ARDL) bounds testing model. The study is driven by the fact that Nigeria is experiencing an increasing profile of public debt, recurrent inflationary pressures and the issue of fiscal-monetary policy coordination. The paper is based on the fiscal dominance theory and whether the efficacy of monetary policy is compromised and results in inflation with the use of expansionary fiscal policy, which is financed to a large extent by borrowing and credits by the central bank. The main variables are the rate of inflation, aggregate government debt, fiscal deficit, overall money supply, exchange rate, and interest rate which were obtained in the Central Bank of Nigeria and the Debt Management Office. The ARDL bounds test results indicate the existence of long-run cointegrating relationship between the variables. Estimated coefficients show the statistically significant positive effect of both long-term and short-term inflations produced by public debt and fiscal deficit, which proves the hypothesis of fiscal dominance in Nigeria. In addition, the level of money supply, as well as exchange rate depreciation, are major causes of inflation, whereas the interest rate demonstrates a negative correlation. The model is also robust, stable, and free of serial correlation or heteroscedasticity that is confirmed by diagnostic tests. The paper concludes by saying that the fiscal activity of Nigeria has been eminent and limiting to monetary policy, which sustained the tendencies of inflation. Suggestions that have been put forward are the application of legislated fiscal regulations, the in-depth development of the domestic debt market to cut down on monetary finance, the central bank independence, and the productivity so that imported inflation can be checked. These are essential in unleashing the debts-inflation nexus and realize macroeconomic stability.

Key words: Fiscal dominance; Public debt; Inflation; ARDL; Nigeria

1. INTRODUCTION

Fiscal policy and monetary policy interaction is one of the main themes of the macroeconomic management, and the implication of the same is significant on the issue of price stability, debt sustainability and the general economic growth. This relationship is frequently marked by fiscal dominance in most emerging and developing economies; a system in which fiscal policy concerns are front and center at the expense of the monetary policy goals forcing the central bank to serve the government financing purposes at the cost of maintaining price stability (Sargent and Wallace, 1981). Africa as a whole and Nigeria in particular, being the largest economy in the region, means that the case of rapidly growing stock of public debt and constant high inflation is a relevant case study in Nigeria. The total public debt in the country, which consists of both external and domestic debts, has drastically increased to more than ₦97.3 trillion by the end of 2023 as compared to 2015 when the country recorded around ₦12.6 trillion (DMO, 2024). At the same time, the inflationary pressures have been extremely persistent, and the headline inflation

has been 33.69% as of April 2024 with the food and core items being the biggest contributors (NBS, 2024).

This simultaneous increase requires a critical investigation on the possible causal relationships, that is, whether the fiscal path of Nigeria exemplifies features of dominance that encourages the inflationary mechanisms. In the past, the major part of the fiscal deficits in Nigeria was individualized by the ways and means advances by the Central Bank of Nigeria (CBN), where the fiscal actions would widen the reserve money and, eventually, the money supply, causing inflation (CBN, 2023). Despite the attempts at securitizing such improvements, the pressure of huge deficits funded through domestic borrowing may squeeze out private sector credit and place a positive strain on the interest rates and prices. The fiscal dominance phenomenon implies that once the debt and deficit of the government are viewed as unsustainable, monetary policy will no longer have an anchor because in any effort to restrain inflation through tightening, the need to finance the fiscal deficit will compromise those endeavors (Sims, 2013).

Though there has been existing literature on the determinants of inflation in Nigeria, mostly on money supply, exchange rate, and output gaps, the recent literature with the use of fiscal variables are also few and few considering the use of strong time-series methods to unravel long-run and short-run dynamics in the presence of a framework where fiscal dominance is explicitly tested. A majority of the research is based on simple correlations or vector autoregressions without the formation of any form of a long-run equilibrium relationship. This paper, thus, attempts to address this gap by offering a new piece of evidence based on the implementation of the ARDL bounds testing framework to the Nigerian data in the period between 1990 and 2023. This study contributes specific application of the ARDL framework to test for fiscal dominance in Nigeria, comprehensive variable inclusion. The ARDL approach is especially well adapted to this study since it can be used regardless of the order of integration of the variables (as long as they are not I(2)) and it is effective in estimating both the long-run and short-run parameters.

The main aim of the research paper is to empirically analyze how public debt and fiscal deficits affect inflation in Nigeria and the condition of non-existence of fiscal dominance is controlled by the presence of major monetary and external variables. Particularly, the study seeks to: (i) determine the relationship between public debt, fiscal deficit, money supply, exchange rate, interest rate and inflation in long-run equilibrium; (ii) estimate the margin of the inflation elasticity in the short-run and long-run with regards to these variables; and (iii) draw up policy decisions toward breaking the nexus between fiscal profligacy and inflation. This research is important to the policy-makers at the fiscal and monetary authorities because the study presents empirical support to the fact that there is an urgent need to adopt coordinated, disciplined, and transparent macroeconomic management to facilitate debt sustainability and price stability in Nigeria.

2. LITERATURE REVIEW

2.1 Fiscal Dominance and Inflation in the Theory.

The theoretical nexus of fiscal policy and inflation has a profound basis in the macroeconomic theory, which has developed out of classical propositions to the current dynamical models. The main issue of the debate is the co-ordination or lack of co-ordination between the fiscal and monetary authorities in respect to their various mandates of price stability and debt sustainability. The official recognition of the fiscal dominance hypothesis came with the seminal paper of Sargent and Wallace (1981) about the unpleasant monetarist arithmetic, which places an elegant theory of how an unsustainable fiscal policy can determine the result of inflation. They claimed that the intertemporal budget constraint of the government is the major contributor of macroeconomic performances in a fiscal domineering regime. Where economic agents believe that the future value of the primary surpluses will not be sufficient to settle the current exiting nominal debt, the shortfall must be settled by seigniorage which is the money creation revenue. This process directly increases the monetary base and, through the money multiplier, the broader money supply, leading to inflation. In this framework, the central bank effectively loses its operational independence because refusing to monetize the deficit could force the government into a default on its obligations, an outcome often deemed more economically and socially destabilizing than accepting higher inflation. This contrasts starkly with a monetary dominant regime, where the central bank sets its policy instrument, such as an interest rate target, independently with the primary goal of price stability. In that regime, the fiscal authority is forced to adjust its plans for taxes and spending to satisfy its intertemporal budget constraint given the path of interest rates and inflation set by the monetary authority.

The contemporary theories build on this core idea. General equilibrium approach Fiscal Theory of the Price Level (FTPL), mostly from the works of Leeper (1991) and Sims (1994), provides a more general approach to equilibrium. It assumes that the price level is that variable that varies to achieve the real value of the outstanding nominal government debt being the present discounted value of any future primary budget surpluses. Under an active fiscal/passive monetary regime (which is also known as fiscal dominance), the fiscal authority determines a primary surplus path without consideration of the ability to meet the budget constraint of the government at the current price level. Monetary policy

is then passive, which adapts itself to accommodate the fiscal position by legitimizing the price which is produced, it is usually performed by creation of money. This regime means that the price level is determined by the fiscal policy, and the monetary policy comes next. The FTPL emphasizes the fact that the inflation can be observed without the existence of the money financing in the present time as soon as the expectations of the agents concerning the financial sustainability in the future are changed. In case of a lack of confidence and the present value of future surpluses narrows, an immediate adjustment to equilibrium occurs where the price level is leaped up to devalue the real debt stock.

Moreover, the idea of fiscal inflation has become a very popular topic in modern policy discussions, particularly after the massive fiscal reactions to the COVID-19 crisis in most developed countries. According to such researchers, as stated by Cochrane (2023), this opinion implies that substantial, deficit-financed fiscal stimuli, especially when the level of public debt is already high and considered to be risky, may directly raise the expectations of inflation. This is possible regardless of the prevailing position of the monetary policy. The process works via an expectations channel: when households and firms believe that large current deficits will not be offset by adequate future surpluses, they expect future inflation to be high either by direct debt monetization or by a FTPL-type revaluation. This anticipation may be a self-fulfilling prophecy and thus production of wage and price-setting behavior will immediately rise and thus actual inflation will follow. The theory can be especially applied to the situation in Nigeria where habitual fiscal expansions and an increment in stock of debts can have systematically changed inflationary expectation creating higher inflation within the structural aspect of the economy.

Such theoretical frameworks are supplemented by the analysis of particular channels of transmission according to which fiscal dominance is already being put into effect in reality, particularly in developing economies such as Nigeria. The most immediate channel is the seigniorage/money-printing channel in which the central bank buys in the primary market. The second channel is the financial repression channel, in which the captive domestic savings are directed to the government (e.g. via pension funds or commercial bank reserve requirements) at below-market interest rates. Though this can garner unwarranted interest costs explicitly, it distorts financial intermediation and can contribute to inflation by maintaining monetary policy too loose. Exchange rate channel is a third channel. Deficit-financed massive spending has the effect of increasing the aggregate demand in imports, which risks undermining the balance of trade and putting the currency under pressure. A depreciating currency would translate immediately into increased domestic prices of imported goods and inputs (imported inflation) in an import dependent economy. Capital flight can also be brought about by a weak fiscal position further increasing the depreciation pressures. Collectively, the theories create a powerful and versatile framework of analyzing how the long-run fiscal imbalances, especially those funded by the central bank, or those which are believed not to be supported by credible future revenues can become an elemental and strong source of inflation.

2.2 Empirical Data regarding the Dynamics of Public Debt and Inflation

Empirical evidence about the debt-inflation relationship provides inconclusive results with most outcomes being dependent on institutional circumstances of a country, debt sustainability levels, and the debt financing mechanisms. There is an apparent dichotomy between developed economies that have in-depth and believable institutional structures and emerging economies that have weaker institutional structures. The empirical evidence between the level of public debt and inflation in more developed economies with well-established domestic bond markets, and central banks that have independence and clear inflation-targeting, and high levels of fiscal policy credibility, has been found to be weak or non-existent. To give an example, De Graulwe and Ji (2020) examined the Euro Area and concluded that there is no systematic relationship between high public debt ratios and inflation, which they attribute to the high credibility and statutory independence of the European Central Bank that has been very successful in anchoring long-term inflation expectations despite large debt levels in some member states. Under these circumstances, fiscal expansions are usually funded in capital markets without central bank funding, and the monetary policy continues to play its role in price determination.

The evidence however does not leave much doubt that, in developing and emerging market economies, which tend to have features similar to those of Nigeria, i.e. less developed financial markets, poorer central bank independence de facto, and poorer fiscal credibility, the positive and significant relationship between public debt and inflation is supported. On Sub-Saharan Africa, a detailed research by Nguyen, Dinh, and Vo (2021) that relied on dynamic panel data model revealed that when the amount of public debt surpasses 60 percent of GDP, it is another significant cause of inflation, and this relationship is significantly higher in the nation with low institutional quality that was determined by gauging governance indicators. This highlights the importance of institutions; with weak fiscal control and monetary institutions susceptible to political intervention, there is a higher possibility that debt will cause inflationary finance. Similarly, in a general cross-country study, El-Shagi and Zhang (2022) found that the concept of fiscal dominance can be one of the driving forces of the inflation

process, especially in nations whose central banks are less independent, and whose domestic bond market remains underdeveloped. According to their results, the impossibility to issue debt in a deep local market at constant interest rates drives government into central bank funding, and this triggers the seigniorage channel.

Nigeria in particular, recent empirical research has started to more closely embrace use of fiscal variables, however, results are highly inconsistent, hence, the complexity of the relationship, and responsiveness to model specification, choice of variables, and time period. In another study carried out by Omodero and Nwakoby (2022), a model framework of the error correction indicated that federal government domestic debt had a significant positive effect on inflation in Nigeria, which confirmed the power of domestic debt accumulation as an inflationary factor. They referenced the crowding-out effect and the augmented liquidity which commonly goes with domestic debt issuance in their study. In contrast, Adedokun and Alege (2021), using a Vector Error Correction Model (VECM), arrived at a more nuanced conclusion. They found that while money supply growth and exchange rate depreciation were significant and robust drivers of inflation in both the short and long run, the direct impact of the fiscal deficit on inflation was statistically weak in the long-run equilibrium equation, though it showed significance in short-run dynamics. This finding implies that in their specification, the inflationary impact of fiscal deficits may be indirect, primarily operating through the monetary and exchange rate channels rather than as a standalone force.

These inconsistent findings within the Nigerian literature point to several methodological and contextual challenges. First, many studies use different proxies for fiscal pressure (e.g., total public debt vs. domestic debt vs. fiscal deficit), leading to non-comparable results. Second, the choice of control variables varies significantly; some models may omit key transmission variables like the exchange rate or money supply, leading to omitted variable bias. Third, the time period covered is crucial. Studies ending before the massive fiscal expansions of the COVID-19 era and the subsequent unprecedented growth in CBN financing may fail to capture a regime shift towards more intense fiscal dominance. Finally, many traditional time-series techniques require all variables to be integrated of the same order, often leading to the application of first differences that may wash out long-run relationships or forcing modelers to drop relevant but stationary variables. This methodological limitation is a key rationale for employing the ARDL bounds testing approach, which can accommodate a mix of I(0) and I(1) variables and is thus more suited to the Nigerian macroeconomic data landscape.

2.3 The Nigerian Context: Stylized Facts and Research Gaps

The economic history of Nigeria during the last 40 years contains a textbook example of the circumstances that encourage fiscal preeminence. The period of the oil boom in the 1970s had created a pattern of resource-funded government spending led by the government, and became recurrent deficits during the 1980s oil price crash. Although the structural adjustment Programme (SAP) that was initiated in 1986 was intending to liberalize the economy, major fiscal imbalances were introduced, which were usually monetized, creating a precedent of central bank funding of deficits. This trend has continued and arguably it has been compounded over the recent years. Structurally low non-oil revenue, oil theft, fluctuating world crude oil prices, and increasing expenditure strains (such as security problems and subsidy payments) have put the nation in perpetual fiscal deficit.

The anatomy of fiscal dominance is found in the financing of these deficits. As long as external borrowing is limited by the ability to access the market and sustainability of the debt, domestic borrowing has increased exponentially. More importantly, much of this home financing has not been made possible by a profound liquid bond market but by the Central Bank of Nigeria under its "Ways and Means Advances" programme. This temporary funding facility, which was meant to assist in addressing short-term cash flow imbalances, has been frequently availed and in large quantities that are way beyond the limits stipulated in the statutes. According to the records provided by Egbon and Okiakhi (2023), the shift to the dependency on this direct financing system became inflated after the 2016 recession and the COVID-19 pandemic, resulting in a huge liquidity overload to the financial system. The most extreme recognition of the scope of this issue is securitizing 23.7 trillion of these advances into long-term federal government bonds in 2023 which purports to turn short-term central bank debt into long-term marketable debt but does not mitigate the original injection of inflation (CBN, 2023).

Parallel to this financial trend, the inflation in Nigeria has been getting more widespread and persistent. Although supply-side shocks, like farmer-herder conflicts, climate variability and infrastructure shortage, continue to be significant drivers, especially to food inflation, the trend and overall quality of price advancement suggest robust demand-side and monetary forces. The exchange rate channel has well demonstrated its strength particularly since the shift towards a more market-determined exchange rate system, where massive depreciations directly translate into increased costs on imported goods, fuel, and raw materials. Lying behind the fiscal deficits, as well as the exchange rate pressure, is an increase in the base money that results due to CBN financing of

the government. It leads to a vicious cycle: deficits are monetized driving up liquidity; this drives the demand of imports and inflationary pressures; the inflation and possible capital flight make the currency weaker and the currency depreciation feeds the inflation further making the fiscal position harder.

With such an interesting story and the obvious policy-relevance, however, there remains a massive gap in the empirical literature on Nigeria. Most prominent works on inflation in Nigeria, including that of Okoro (2021) and Udeh (2020), take a very covertive view on monetary aggregates or even on exchange rate, implicitly assuming a monetary dominance regime where the central bank controls the price process. These researches tend to put fiscal policy in the background. The latter, on the other hand, are often limited: they can be based on datasets that are not current to reflect the recent phase of extreme fiscal stress; they can run methodologies that are ill-posed to the integration properties of the variables; or they cannot represent the critical fiscal and monetary variables in a single model that can be used to test dominance. This paper is intended to fill these gaps. Using the ARDL bounds testing method on an extensive and recent annual database (19902023), this study implicitly and jointly describes public debt and the fiscal deficit as the main explanators of the phenomenon with the primary monetary and external variables. The design offers a direct and strong test of the fiscal dominance hypothesis in a multivariate model that is capable of separating long-run equilibrium relationships and short-run phenomena. This will be an attempt to not obtain mere correlations but a more sophisticated, empirically-based knowledge of the exact mechanisms and the relative powers by which the actions of fiscal policy directly affect the inflationary process in Nigeria, which in turn would offer empirically supported guidance to macroeconomic stabilization.

The literature review establishes a strong theoretical foundation for fiscal dominance and its inflationary channels, yet reveals significant empirical gaps in the Nigerian context. While existing studies acknowledge the roles of money supply and exchange rate, analyses incorporating fiscal variables are limited and yield inconsistent results due to varying methodologies, variable choices, and sample periods. Crucially, much of the prior research utilizes datasets that end before the period of intense fiscal stress marked by the COVID-19 pandemic and unprecedented Central Bank financing via Ways and Means Advances. This study directly addresses this gap by employing the ARDL bounds testing approach on a comprehensive and updated annual dataset from 1990 to 2023. By explicitly testing the fiscal dominance hypothesis within a multivariate framework that captures both long-run equilibrium and short-run dynamics across this extended and recent period, the research provides timely and robust empirical evidence on the debt-inflation nexus in Nigeria.

3. METHODOLOGY

3.1 Model Specification and Theoretical Framework

Grounding the analysis in the theoretical discourse on fiscal dominance and the quantity theory of money, this study specifies an inflation model where the general price level is a function of fiscal variables, monetary aggregates, and external factors. The functional relationship is expressed as:

$$INF_t = f(PDEBT_t, FDEF_t, M2_t, EXR_t, INTR_t)$$

Where:
- INF_t = Inflation rate (annual percentage change in CPI)
- $PDEBT_t$ = Total Public Debt as a percentage of GDP
- $FDEF_t$ = Fiscal Deficit as a percentage of GDP
- $M2_t$ = Broad Money Supply as a percentage of GDP
- EXR_t = Official Exchange Rate (Naira/USD, logged)
- $INTR_t$ = Monetary Policy Rate (percent)

The expected signs are: $PDEBT$ (+), $FDEF$ (+), $2M2$ (+), EXR (+ depreciation leads to inflation), and $INTR$ (-, as a higher policy rate should theoretically curb inflation).

In line with monetary theory and the Central Bank of Nigeria's price stability mandate, the interest rate (INTR) is expected to have a negative relationship with inflation. A higher monetary policy rate tightens credit conditions, reduces aggregate demand, and dampens inflationary pressures. Therefore, an increase in INTR is anticipated to correlate with a decrease in the inflation rate.

3.2 Data Sources, Description, and Measurement

The study employs annual time series data from 1990 to 2023. Data on the Consumer Price Index (CPI), Broad Money Supply (M2), Exchange Rate (EXR), and Monetary Policy Rate (INTR) are sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2023) and online database. Data on Total Public Debt (PDEBT) and Fiscal Deficit (FDEF) are obtained from the Debt Management Office (DMO) and the CBN, with deficit calculated as the difference between total government expenditure and total revenue (including grants). All nominal series (M2, debt) are expressed as ratios to nominal GDP to capture their economic scale and mitigate scale effects. The inflation rate is computed as the annual log difference of CPI. All data transformations and analyses are conducted using EViews 12.

3.3 Analytical Technique: The ARDL Bounds Testing Approach

The Autoregressive Distributed Lag (ARDL) bounds testing approach cointegration technique developed by Pesaran, Shin, and Smith (2001) is adopted. It is preferred because it can be applied regardless of whether the underlying regressors are purely I(0), purely I(1),

or mutually cointegrated. This is crucial as preliminary unit root tests may yield mixed orders of integration. The ARDL model also provides unbiased estimates of the long-run model and valid t-statistics even when some

explanatory variables are endogenous. The ARDL bounds test involves estimating the following unrestricted error correction model (UECM):

$$\Delta INF_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \Delta INF_{t-i} + \sum_{i=0}^{q_1} \gamma_i \Delta PDEBT_{t-i} + \sum_{i=0}^{q_2} \delta_i \Delta FDEF_{t-i} + \sum_{i=0}^{q_3} \theta_i \Delta M2_{t-i} + \sum_{i=0}^{q_4} \kappa_i \Delta EXR_{t-i} + \sum_{i=0}^{q_5} \lambda_i \Delta INTR_{t-i} + \pi_1 INF_{t-1} + \pi_2 PDEBT_{t-1} + \pi_3 FDEF_{t-1} + \pi_4 M2_{t-1} + \pi_5 EXR_{t-1} + \pi_6 INTR_{t-1} + \epsilon_t$$

Where Δ is the difference operator, p and qs are the optimal lag lengths selected by the Akaike Information Criterion (AIC), and ϵ_t is the white noise error term. The bounds test for cointegration is conducted using an F-test on the joint significance of the lagged level variables $6=0 H_0: \pi_1 = \pi_2 = ... = \pi_6 = 0$ against 1: H_1 : at least one $\neq 0 \pi_i = 0$). If the computed F-statistic exceeds the upper critical bound, the null of no cointegration is rejected; if it is below the lower bound, we fail to reject; if it falls between, the result is inconclusive.

Upon establishing cointegration, the long-run coefficients are derived from the normalized equation on the lagged level variables. The associated short-run error correction model (ECM) is then estimated, incorporating the speed of adjustment coefficient, which must be negative, significant, and less than one in absolute value.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1 Descriptive Statistics and Preliminary Analysis

Table 1 presents the descriptive statistics of the variables used in the study. The average inflation rate over the period is 18.74%, with a high standard deviation of 11.58, indicating substantial volatility. Public debt averages 30.15% of GDP but shows a sharply rising trend in recent years. The fiscal deficit averages 3.8% of GDP. The Jarque-Bera statistics indicate that most series, except M2/GDP, are not normally distributed, which is common in macroeconomic time series but does not invalidate the ARDL approach.

Table 1
Descriptive Statistics (1990-2023)

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Jarque-Bera	Probability
INF	18.737	12.550	72.840	5.390	11.584	50.212	0.000
PDEBT	30.150	22.650	80.520	12.110	19.757	8.715	0.013
FDEF	-3.801	-3.145	0.980	-13.210	3.228	15.098	0.001
M2	20.501	19.415	38.920	12.010	6.572	1.534	0.464
EXR (Log)	3.924	4.010	5.224	0.000	1.418	21.113	0.000
INTR	13.272	13.000	26.000	6.000	4.421	13.350	0.001

Source: Author's computation using EViews 12.

4.2 Stationarity and Unit Root Tests

Although the ARDL approach does not require all variables to be I(1), it is essential to ensure none is I(2) to avoid spurious results. The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were conducted. The results, summarized in Table 2, show that all variables are either I(0) or I(1). Specifically, INTR is stationary at level I(0), while INF, PDEBT, FDEF, M2, and EXR become stationary after first differencing, i.e., I(1). The absence of I(2) variables validates the use of the ARDL bounds testing approach.

Table 2
Unit Root Test Results

Variable	ADF Test Statistic	PP Test Statistic	Order of Integration
Level			
INF	-2.154	-2.098	I(1)
PDEBT	-1.887	-1.902	I(1)
FDEF	-2.543	-2.601	I(1)
M2	-0.945	-1.022	I(1)
EXR	-1.234	-1.311	I(1)
INTR	-3.872***	-4.012***	I(0)

Variable	ADF Test Statistic	PP Test Statistic	Order of Integration
First Difference			
ΔINF	-4.563***	-4.921***	–
ΔPDEBT	-5.012***	-5.334***	–
ΔFDEF	-4.781***	-4.995***	–
ΔM2	-4.221***	-4.567***	–
ΔEXR	-4.876***	-5.102***	–
ΔINTR	–	–	–

Notes:
***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.
MacKinnon (1996) critical values used for rejection of the null hypothesis of a unit root.

I(0) indicates stationarity at level; I(1) indicates stationarity after first differencing.

The variable INTR is stationary at level [I(0)]; all others are integrated of order one [I(1)].

Source: Author's computation using EViews 12.

4.3 Bounds Test for Cointegration

The optimal lag structure for the ARDL model was selected as ARDL(2, 1, 0, 1, 1, 0) based on the lowest Akaike Information Criterion (AIC). The bounds F-test was then conducted. The computed F-statistic is 6.842, as shown in Table 3. This value is compared with the critical value bounds from Pesaran et al. (2001). At the 5% significance level, the lower bound I(0) is 2.62 and the upper bound I(1) is 3.79. Since 6.842 > 3.79, the F-statistic exceeds the upper critical bound, leading to a decisive rejection of the null hypothesis of no long-run relationship. This confirms the existence of a stable cointegrating relationship among inflation, public debt, fiscal deficit, money supply, exchange rate, and interest rate in Nigeria over the study period.

Table 3
ARDL Bounds Test for Cointegration

Test Statistic	Value	K (5 regressors)
F-statistic	6.842	5
Significance	Lower Bound I(0)	Upper Bound I(1)
10%	2.26	3.35
5%	2.62	3.79
1%	3.41	4.68

Note: Critical values from Pesaran et al. (2001), Case III: unrestricted intercept and no trend. K is the number of regressors in the long-run relationship. Source: Author's computation.

4.4 Estimated Long-Run and Short-Run ARDL Models

Given the confirmed cointegration, the long-run coefficients are estimated and presented in Table 4. All

variables are statistically significant at conventional levels. Public debt (PDEBT) has a positive long-run coefficient of 0.327, implying that a 1 percentage point increase in the debt-to-GDP ratio leads to a 0.33 percentage point increase in inflation, holding other factors constant. The fiscal deficit (FDEF) coefficient is 0.891, indicating a strong positive impact. Broad money supply (M2) and exchange rate (EXR) also show the expected positive and significant impacts, with coefficients of 0.456 and 8.127, respectively. The interest rate (INTR) has a negative coefficient of -0.714, suggesting that monetary policy tightening has a deflationary effect in the long run, though its magnitude is less than that of the fiscal variables.

Table 4
Estimated Long-Run Coefficients (ARDL(2,1,0,1,1,0) selected by AIC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PDEBT	0.327	0.098	3.337	0.003
FDEF	0.891	0.214	4.164	0.000
M2	0.456	0.121	3.768	0.001
EXR	8.127	2.045	3.974	0.001
INTR	-0.714	0.187	-3.818	0.001
C	-25.334	6.789	-3.732	0.001

Source: Author's computation.

The short-run error correction model (ECM) results are presented in Table 5. The error correction term (CointEq(-1)) has a coefficient of -0.682, which is negative, statistically significant at the 1% level, and lies between 0 and -1. This confirms the long-run equilibrium relationship and indicates a relatively high speed of adjustment; approximately 68% of any disequilibrium in inflation from one period is corrected in the next period. The short-run dynamics show that the contemporaneous changes in public debt (ΔPDEBT) and fiscal deficit (ΔFDEF) have significant positive effects on inflation changes. The short-run coefficients for money supply and exchange rate are also positive and significant.

Table 5
Short-Run Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INF(-1))	0.221	0.102	2.167	0.040
D(PDEBT)	0.223	0.085	2.624	0.015
D(FDEF)	0.608	0.145	4.193	0.000
D(M2)	0.311	0.089	3.494	0.002
D(M2(-1))	-0.189	0.086	-2.198	0.038
D(EXR)	5.542	1.456	3.806	0.001
CointEq(-1)	-0.682	0.099	-6.889	0.000

R-squared = 0.785; Adjusted R-squared = 0.731; F-statistic = 14.512 (Prob. 0.000); Durbin-Watson stat = 2.104.
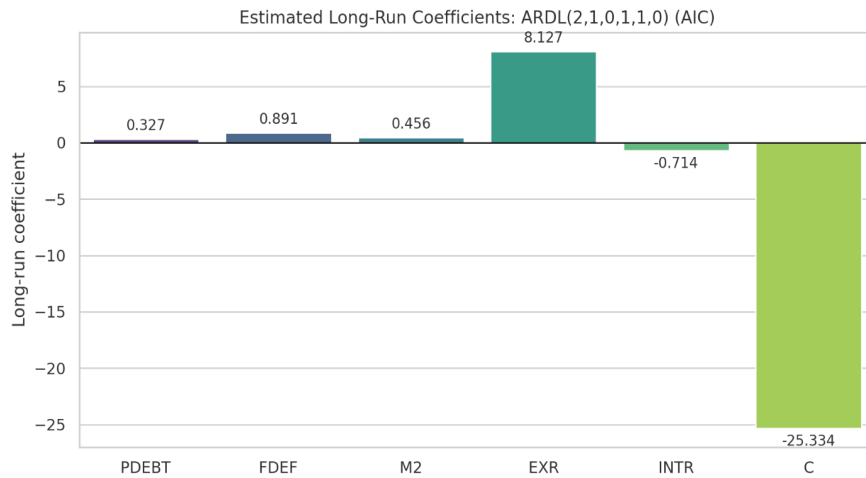*Source: Author's computation.*

Figure 1
Estimated Long - Run Coefficients of the ARDL(2,1,0,1,1,0) Model (Selected via AIC Criterion) Across Explanatory Variables

The significantly larger coefficient for the fiscal deficit (0.891) compared to that for public debt (0.327) indicates that, in Nigeria, the *flow* of new borrowing (the deficit) exerts a stronger immediate inflationary pressure than the existing *stock* of debt. This is because deficit financing—especially when monetized by the central bank through "Ways and Means" advances—directly injects high-powered money into the economy, rapidly expanding liquidity and boosting aggregate demand, which translates more quickly into price increases. In contrast, the public debt stock influences inflation through more gradual channels, such as raising sustainability concerns, altering inflation expectations, and potentially leading to future monetization, thereby exerting a more persistent but less acute effect on the price level.

4.5 Diagnostic and Stability Tests

The model passes major diagnostic tests. The Breusch-Godfrey Serial Correlation LM test returns F=0.892 (Prob=0.423) which does not hold significance, that is there is no serial correlation present. Breusch-Pagan-Godfrey heteroscedasticity test provides a value of 1.344 (Prob. 0.257), which indicates the homoscedasticity of the values. The F-statistic of 1.045 (Prob. 0.317) obtained when Ramsey RESET test is used to test the functional form indicates that the model is specified correctly. Jarque Berra test on the assumptions of normality (statistic=1.228, Prob=0.541) does not reject the assumptions of normality. Moreover, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) plots (on request) of recursive residuals do not exceed the 5% critical values, and this proves the stability of the long-run and short-run parameters at the period of sample.

4.6 Empirical Findings Discussion.

The empirical evidence indicates that the hypothesis of fiscal dominance in Nigeria holds very well. The long-run coefficient of the effect of both the public debt and fiscal deficit is positive and statistically significant and highlights the inflationary effect of loose fiscal policy. The outcome of the public debt (0.327) is congruent with the results of Omodero and Nwakoby (2022) and with the results of the cross-country evidence of SSA provided by Nguyen et al. (2021). It is implied that the sustainability concern and the projected necessity to monetize the accumulating debt are driving the inflationary expectation. The direct one noted by the even greater coefficient of fiscal deficit (0.891) is that deficit financing, notably by the CBN ways and means, injects into the economy high-powered money, which is multiplied by the banking system, leading to aggregate demand and prices.

The relevance of money supply (M2) confirms the monetary theory of inflation, yet its influence is connected with the monetary policy. In a fiscally hegemonic regime, not a cause but a result is growth in M2. The high exchange rate coefficient (8.127) validates the strong pass-through in an import-dependent economy, such as Nigeria. Depreciation also raises the price of imports (raw materials and finished products) which are driving cost-push inflation. The theoretical role of the monetary policy rate is validated by the negative value of the interest rate (-0.714), though it seems that the effectiveness of this parameter is not as high. This signals the policy dilemma of fiscal dominance: the CBN can increase the rates to curb inflation, but in the process of doing such, the government maintains high liquidity levels and subverts the contractionist fiscal policy.

The large adjustment rate (-0.682) of the ECM shows that the deviation of inflation out of the long-run equilibrium is corrected relatively fast, however, the fact that the adjustment rate is large also means that the impact of the fiscal variables is quickly passed to the price level. The fact that these results are consistent in

testing diagnostic tests as well as stability tests is very much credible of the model and its policy implications. The evidence all points to a picture where the use of fiscal policy is a key determinant of the macroeconomic performance and monetary policy is a reactive, and in some cases, subservient role.

5. POLICY IMPLICATIONS AND CONCLUSION

This paper has discussed the active interplay of public debt, fiscal dominance and inflation in Nigeria between 1990 and 2023. Through the use of the ARDL bounds testing method, the analysis is strong to determine a stable long run cointegrating relationship of the variables. The essence of the results is that the fiscal policy of the country, as represented by the ratio of public debt/GDP and fiscal deficit/GDP, has a large and positive impact on both the long-term and short-term inflation. This gives empirical support to the presence of fiscal dominance regime in Nigeria whereby the need to fund government expenditures usually monetary in nature, generate continued upward pressure on the general level of prices. This is also supported by the findings that large money supply and exchange rate depreciation are the important drivers of inflation and that the efficacy of the monetary policy rate is limited in such a regime.

5.1 Policy Recommendations

In accordance with the findings of the empirical study, the proposed policy implications are as follows:

Fiscal Discipline and Legislative Reform: Enhancing fiscal discipline by imposing enforceable legislative structures is the most important. The Fiscal Responsibility Act (FRA) is to be strengthened by binding caps on deficit-to-GDP ratio and the serious prohibition of central bank funding of deficit more than minimal and temporary advances. The Fiscal Responsibility Commission should also be given the mandate to increase its surveillance and implementation skills.

Development of the domestic debt market: The development of the domestic debt market is in urgent need of diversification. Building a dynamic market in government securities by the non-bank investors (e.g., pension funds, insurance companies) and the general population will decrease the dependence on the financing by the central bank and commercial banks. This would assist in sterilizing the liquidity effect of deficit financing and undermine the direct seigniorage channel.

Central Bank Independence: Independence of operations of Central Bank of Nigeria (CBN) has to be provided in practice rather than in statute. It must not be compromised by price stability by undertaking quasi-fiscal activities or being ordered to fund the government. The CBN should always employ its policy tools (Monetary

Policy rate, Open Market Operations) to indicate a believable determination to contain inflation even in the face of fiscal strains.

Structural Reforms on Exchange rate stability: Since the exchange rate pass-through is high, structural policies are important to stabilize the currency. This encompasses spreading the export base and vigorous promotion of local production in case of import replacement and export orientation. In the reduction of imported inflation, structural response is essential; adversarial reliance on imports is needed.

Fiscal Transparency and Debt Management: It is important to upgrade the transparency of the fiscal operations and debt management. Frequent and transparent public disclosure over debt usage, sources of deficit financing and the macroeconomic effect of borrowing will enhance accountability, influence public expectations more efficiently and lower the uncertainty that leads to inflation.

5.2 Presentation of Limitations and Future Research directions

The present study is not a limitless one that lacks limitations, which also suggests future research directions. The discussion is based on the data on an annual basis, which can blur the more short-term dynamics and processes of immediate adjustment. In addition, the linear ARDL is a powerful regression model which might fail to replicate the possible non-linearities or threshold effects in the debt/inflation relationship. Future studies might build on this study to use quarterly or monthly data, investigate non-linear or time-varying parameter modelling, and introduce more variables like global oil price shocks, remittances, or more refined measures of institutional quality to give an even finer grain of view of the process of inflation in Nigeria.

Finally, the long-term price stability of Nigeria can only be achieved when there is a macroeconomic change in the governance of the country to manage the core fiscal sources of inflation. Unless concerted effort is applied to reverse the trend of fiscal dominance, the monetary policy will remain a crude stick, the objective of low and stable inflation will be unattainable, and the expenditures on inclusive growth and social welfare will keep on increasing.

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