
Fiscal Deficit, Institutional Quality and Economic Performance in Nigeria (1987-2022)

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Abstract: *Nigeria continues to face high fiscal deficits, low institutional quality, and sluggish economic growth despite numerous efforts to enhance economic performance. While extensive research has focused on the impact of fiscal deficits on economic performance, limited attention has been given to the combined effects of fiscal deficits and institutional quality in the Nigerian context. This study investigates how fiscal deficits, institutional quality, and their interaction influence Nigeria's economic performance from 1987 to 2022. Using GDP growth rate as a measure of economic performance, the analysis incorporates fiscal deficit, institutional quality as the independent variables and includes interest rate, inflation rate, and gross fixed capital formation as control variables. Preliminary unit root tests confirmed that the variables were integrated at orders zero and one, making them suitable for the Autoregressive Distributed Lag (ARDL) estimation approach. The results at a 5% significance level revealed that, in the long run, fiscal deficits negatively but insignificantly impacted economic performance. Similarly, in the long run, institutional quality also negatively but significantly influenced economic performance. The interactive effect of fiscal deficits and institutional quality on economic performance was negative and insignificant in both the short and long run. Diagnostic residual tests confirmed the model's reliability. The study concluded that fiscal deficits and institutional quality, both independently and interactively, do not significantly drive economic performance in Nigeria. The study recommended targeted reforms to address fiscal deficits and institutional quality separately, alongside other macroeconomic strategies, to advance Nigeria's economic performance.*

Keywords: economic performance, fiscal deficit, institutional quality, Nigeria

JEL Classification: H62, O47, O35

INTRODUCTION

The pursuit of stable and sustainable economic growth remains a fundamental goal for nations, yet this aspiration is often hindered by fiscal imbalances, particularly in developing countries.

Resource-rich nations like Nigeria are especially vulnerable to fiscal uncertainty, as evidenced by the persistent gaps between government expenditure and revenue. Fiscal deficit, defined as the shortfall covered by borrowing, is a key fiscal policy tool employed to stimulate economic demand, enhance productivity, stabilize prices, and foster investments. However, these benefits remain largely unrealised in Nigeria, where ineffective macroeconomic management has resulted in rising inflation, declining real incomes, and a volatile economic environment.

Despite government efforts to harness fiscal deficits for growth, Nigeria's economic performance has been marked by high unemployment, poverty, low investment, and reliance on imported inputs. The fiscal deficit, averaging -2.73% to -5.25% of GDP between 1981 and 1999, improved slightly from 2003 to 2006 but has since fluctuated reaching -4.68% in 2022 (CBN, 2023). Persistent deficits have contributed to mounting internal and external debt, compounded by infrastructural deficits and low human capital development. Notably, Nigeria's poverty rate stood at 43% in 2022 (World Bank, 2023), further emphasizing the need for robust fiscal management.

While much research has focused on fiscal policy's macroeconomic impacts, limited attention has been given to institutional quality's role in shaping fiscal outcomes, institutions-encompassing governance, law, and political stability are critical in designing and implementing effective fiscal policies. High quality institutions ensure efficient resource allocation and foster economic growth, as evidenced in countries at advanced development stages. Conversely weak Institutions often lead to fiscal mismanagement, low growth, and high inflation. Theoretical and empirical studies highlight the significant influence of institutional and political factors on fiscal deficits, with governance quality mediating the effectiveness of deficit spending (Shieifer & Vishny, 1993, Sabir & Qamar, 2018).

The nexus between fiscal deficits, institutional quality, and economic performance in Nigeria underscores the importance of institutional reforms alongside prudent fiscal management. Stronger governance structures and effective policy implementation are pivotal to maximizing economic performance and ensuring fiscal sustainability. Based on these issues, the critical question remains; To what extent have fiscal deficits and institutional quality affected Nigeria's economic performance. This question remains unresolved. In an effort to address this pressing issue, this study aims to investigate the relationship between fiscal deficits, institutional quality and economic performance in Nigeria during the period from 1987 to 2022.

LITERATURE REVIEW

Literature

The relationship between fiscal deficit, institutional quality and economic performance is explained by three theories, the Keynesian theory, Solow growth theory, and Endogenous growth theories. Keynes (1936) posits that effective demand, which specifies that the expansion of overall effective demand should contribute to economic growth, is a major component of the Keynesian model. Keynes created a theory to explain fluctuation in the level of economic activity using economic values such as national income, consumption, savings and investment. He demonstrated

how lower income results in lower spending, savings and investment during recession and increases in unemployment. Thus, government should step in by enacting fiscal policy measures such as tax cuts or increases in government expenditure in a situation where there is no market leverage to enhance the aggregate demand for restarting commercial activities in the economy. In Keynes' view, The Great Depression could be ended by boosting the economy through lower interest rates and government spending on infrastructure, Government sends a message to commercial banks to lower the interest rates at which they lend money to clients by lowering the Central Bank's lending to them. Government spending on infrastructure boosts the economy's revenue through generating business possibilities, jobs and demand. Rise in aggregate demand is the key prerequisite for balanced economic growth according to Keynesian growth theories. Investment is seen as the primary driver of economic expansion that boosts revenue (the multiplier effect) or amplifies the impact of the accelerator alongside income growth.

A contribution to the theory of Economic Development, published in 1956, provided an overview of Solow's theory. Robert Solow starts off with the supposition that aggregate demand and supply must be equal in order for the economic system to be in equilibrium. According to his theory, the production function of Cobb-Douglas, which expresses the functional relationship between production volumes on the one hand and the factors used and their combinations on the other, is used to determine aggregate supply. Investments, the labour force, and technical advancement are three drivers of economic growth that might be connected, according to Solow's thesis.

The hypothesis demonstrates that a significant element in determining the degree of capital intensity is the savings rate. A higher rate of savings results in a larger stock of capital (ie increase in investments), and consequently a higher rate of output. According to Solow's thesis, one of the causes of ongoing economic development in an environment of economic stability is population expansion. Yet, this result is a decrease in the capital stock per worker if population expansion is not matched by an increase in investments. Solow's hypothesis explains why nations with higher rates of population increase have lower capital-labour ratios and, consequently, poorer incomes.

Technical advancement comes in third for economic growth after investments and an increase in employment. It should be highlighted that in neoclassical theory, technical advancement refers to qualitative improvements in production, such as raising worker education levels, improving organisational structures, expanding production scales, and so on, rather than the substitution of human labour by machines. It is important to note that R. Solow, out of all contemporaries, was the first economist to develop a deeper and more comprehensive understanding of the economic efficiency of production as a largely independent driver of economic expansion and a tangible source of social progress in the last quarter of the 20th century. According to Solow's theory, the only prerequisite for ongoing improvement in living standards as expressed by per capita income is technical advancement. Moreover, Solow created a "golden rule of accumulation" formula that identifies the ideal amount of capital intensity. Many norms of saving are consistent with an equilibrated economic growth, but the best norm is the one that allows for the highest level of

consumption while maintaining economic growth. Instead of using the maximum amount of capital possible as in previous methods, the highest consumption is decided by the capital's ideal size and cost-effectiveness-capital productivity per unit of product. Consequently, the Robert Solow theory emphasizes technological advancement as the sole foundation for sustainable expansion of welfare and enables you to choose the best growth option that maximizes consumption.

Endogenous growth models suggest that economic growth mainly relies on internal or within factors such as investment in individuals, innovation, and knowledge. Notably, each country's long-term growth rate is determined by the policies they enact. An essential outcome of these theories is the connection between public policies and long-term expansion that can be attributed to production function displaying non-decreasing returns to scale (Renalt, 1991) or due to its spillover effect (Lucas, 1988). By investing in human capital, individuals contribute to technological progress. Consequently, policies designed to promote both public and private investment in human capital should increase the chances of long-term economic growth.

According to endogenous growth theories, advancements in technology are not the only factor that could contribute to sustained economic growth. The theories of endogenous growth define the importance of intensive, high-quality causes of economic growth. (parameter A in neoclassical theory) with the following elements:

- ❖ The level of human capital which is influenced by investments in human development (health, education).
- ❖ Sitting up the precondition and conditions needed to secure intellectual property rights in the face of imperfect competition.
- ❖ Support from the government for knowledge and technological advancement.
- ❖ The part played by the government in encouraging investment and learning innovative technology.

Endogenous growth theories support government involvement in the process of development. The Endogenous growth model by (Romer's,1990) indicates that technological changes and innovative ideas are endogenous. He further incorporated institution, such as the market, property rights, and the state, using economic tools like subsidies to understand their impact on the speed of technological change and its influence on the growth rate of economic. Schiliro (2010) asserted that the rationale for the institutional arrangement lies in the idea that expanding the work force committed to research pushes the frontier of technological knowledge, potentially leading to an increase in the rate of growth. Saidu and Jaffer (2022) emphasize the role of government effectiveness, particularly through well-funded education and health services in developing human capital which is necessary for economic growth. This model posits that economic output growth depends on enhancing both physical and human capital, along with institutional frameworks and the technological level of economy.

Empirical Literature

The literature on fiscal deficit, institutional quality and economic performance in Nigeria reveals a multifaceted relationship, shaped by the interactions among economic institutional and political factors. Several studies have explored how fiscal deficits influence economic growth in Nigeria. For instance, Dumber, (2019) found a significant long-run relationship between fiscal deficits and economic performance, with domestic deficit funding positively contributing to growth, aligning with Keynesian principles. However, external deficit funding had a negative but insignificant effect, Similarly, Momodu and Monogbe (2017) observed that lagged fiscal deficits contributed to economic performance, though the impact was not substantial. In contrast, William (2022) highlighted a bidirectional relationship where high fiscal deficits led to inflation through increased money supply, negatively affecting growth. Conversely, low economic growth contributed to fiscal deficits due to reduced revenue inflows.

Institutional quality is consistently identified as a critical determinant of economic performance. Enang and Ndem (2014) demonstrated that government effectiveness, voice, and accountability significantly enhance economic performance, emphasizing the importance of governance structures. Similarly Tella and Adesoye (2019) found that institutional quality drives inclusive growth and interacts with financial inclusion to influence economic outcomes. However, Ezekiel et al. (2022) noted variability in institutional impacts across different institutional factors with elements like government stability and law and order reducing fiscal deficits, while corruption control and democratic accountability had weaker long term effects.

The interplay between fiscal deficit volatility and institutional quality is less straightforward. Asmaa and Rana (2020) reported that better institutional quality enhances economic growth but does not mediate the relationship between fiscal deficit volatility and growth. In Sub-Saharan Africa Ezekiel et al. (2022) found that both economic and institutional factors have fiscal deficits, with institutional drivers like government stability and military involvement playing significant roles. These findings suggest that while institutional can buffer economic performance against the adverse effects of fiscal deficits, it does not necessarily eliminate these impacts.

The Nigerian case highlights the need for stronger institutional frameworks to manage fiscal deficits effectively. Improved governance, accountability and regulatory quality can enhance fiscal discipline and support economic growth. Moreover, the mixed results from studies like Dumber (2019) and William (2022) suggest that domestic deficit financing, rather than external borrowing should be prioritized to mitigate inflationary pressures and bolster growth.

The nexus between fiscal deficits, institutional quality, and economic performance in Nigeria underscores the importance of institutional reforms alongside prudent fiscal management. Stronger governance structures and effective policy implementation are pivotal to maximizing economic performance and ensuring fiscal sustainability.

The reviewed literature shows that most of the studies examined fiscal deficit as an independent variable that affect economic growth, to the best of my knowledge few studies however considered joint effect of fiscal deficit and institutional quality on economic performance. This study aimed

to explore this loophole by researching on fiscal deficit, institutional quality and economic performance in Nigeria.

METHODOLOGY

Theoretical Framework and Model Specification

The theoretical framework for this study is grounded in the modified Solow growth model (Solow, 1956) and the Endogenous growth model (Romer, 1990), incorporating institutional quality and fiscal deficit as key variables influencing economic performance. Solow growth theory opines that economic growth is the output of the product of accumulation of physical capital and labour force expansion in addition to the exogenous variables of technological input. The production function of Cobb-Douglas is used to express functional relationship between production volume and the factors used and their combination on the other. While Endogenous growth model by (Romer's, 1990) indicates that technological changes and innovative ideas are endogenous. He incorporated institution, such as market, property rights, and the state, using economic tools like subsidies to understand their impact on the speed of technological change and its influence on the growth rate of the economic.

However, according to Solow model, output is a function of labour (L) and capital (K) with constant returns to scale. The rate of capital accumulation in the long-run is higher than that of the short-run, the marginal efficiency of capital approaches zero and the growth rate is subsequently determined by technical progress and growth in labour force. A measure for human capital is included in the augmented Solow growth model as an additional determinant of growth.

The original Solow growth model was specified as;

$$Y_t = K_t^\alpha (A_t L_t)^{1-\alpha} \quad (3.1)$$

The human capital augmented version by Mankiw et al. (1992) was specified as;

$$Y_t = K_t^\alpha H_t^\beta (A_t L_t)^{1-\alpha-\beta} \quad (3.2)$$

Where: $0 < \alpha < 1$, Y is output, α = elasticity of capital with respect to output, L is Labour, H is the stock of human capital and A represents the total factor productivity. The number of labour effective units increase at rate $n+g$ described as:

$$L_t = L(0)e^{nt} \quad (3.3)$$

$$A_t = A(0)e^{gt} \quad (3.4)$$

It should be noted that the A term indicates not just technology, but comprises other factors including resource endowment, climate, institutions and so on, which may differ across countries (Mankiw et al., 1992)

Since the focus of this study is centered on how fiscal deficit and institutional quality variables affect economic performance in Nigeria, institution enter equation through its effects on total factor productivity (TFP) or technical efficiency. Fiscal deficit was also included into equation (3.2) guided by economic theories. Specifically, the Keynesian theory of fiscal deficit which advocates for increased government spending and decreasing tax rates to stimulate aggregate demand in recession. He also believes that active government intervention in the market place through deficit financing was the only method for ensuring growth and stability.

It is thus assumed that fiscal deficit and institutional quality affect output growth through the total factor productivity. A as a function of Fiscal deficit (FD) and institutional quality (IQ)

$$A = A_0 e^{FD} \quad (3.5)$$

$$A = A_0 e^{IQ} \quad (3.6)$$

By substituting equation (3.5) and (3.6) into (3.2) and taking the natural logarithm of both sides, it becomes

$$Y_t = \alpha_0 \ln K_t + \beta \ln H_t + (1 - \alpha - \beta) \ln L_t + FD + IQ \quad (3.7)$$

Where FD represents fiscal deficit and IQ denotes institutional quality while other variables remain as earlier defined.

Hence, the Model Specification to examine the interactive effect of fiscal deficit, institutional quality on economic performance, this study adapted Ezekiel et al. (2022) and regress growth per capital GDP on fiscal variables along with a set of non-fiscal control variables. The model is specified as

$$Y_t = \alpha_0 + \alpha_1 FD_t + \alpha_2 IQ_t + \alpha_3 (FD * IQ)_t + \alpha_4 INTR_t + \alpha_5 INF_t + \alpha_6 GFCF_t + \varepsilon_t \quad (3.8)$$

Model in log into equation (3.9), we have:

$$Y_t = \alpha_0 + \alpha_1 FD_t + \alpha_2 IQ_t + \alpha_3 (FD.IQ)_t + \alpha_4 INTR_t + \alpha_5 INF_t + \alpha_6 \ln GFCF_t + \varepsilon_t \quad (3.9)$$

Where:

Y_t = GDP growth rate

FD = Fiscal deficit

IQ= Institutional quality

(FD.IQ) = Interaction between fiscal deficit and institutional quality

INF = Inflation rate

INT = Interest rate

GFCF = Gross fixed capital formation

ε = Error term

In = Natural log

Estimation Techniques

The variables of the study were first examined for the existence of unit root by using Augmented Dickey Fuller and Phillip-Perron test. Furthermore, a co-integration test was carried out to examine the long-run and short-run relationship between the series and finally the diagnostic test was conducted to assess modeling residuals about with estimation.

The ADF and PP test were used to determine whether a time series contains unit root and in thus non-stationary.

The second stage involved conducting a co-integration test to examine the long-run and short-run relationship between the series. The (ARDL) model is a co-integration model used to ascertain the long-run co-integration among the variables used. The general ARDL is stated;

$$Y_{it} = \sum_{j=1}^p \alpha_{ij} Y_{i,t-j} + \sum_{j=0}^p \beta_{1j} X_{i,t-j} + Y_i + \Sigma_{it} \quad (3.10)$$

- Y_{it} represent the GDP growth rate. It is the dependent variable
- $X_{i,t-j}$ is a $(k \times 1)$ vector of regressors
- α_{ij} is the coefficient of the lagged dependent variable
- β_{ij} are $(k \times 1)$ coefficient vector

Parameterization of ARDL Model into Error Correction Model

$$\Delta Y_{it} = \lambda_i (Y_{i,t-1} - \delta_i^1 X_{i,t-1}) + \sum_{j=1}^{p-1} Q_{ij} \Delta y_{i,t-j} + \sum_{j=0}^q \mu_{ij} X_{i,t-j} + Y_i + \varepsilon_{it} \quad (3.11)$$

Where;

- λ_i is the speed of adjustment coefficient. It is expected to be negative and significant.
- δ_i^1 represent the vector coefficients of the long-run relationships
- $ECT_{t-1} = (Y_{i,t-1} - \delta_i^1 X_{i,t-1})$ represents the error correction term that results from the long-run equilibrium relationship.
- Q_{ij} and μ_{ij} are the short-run dynamic coefficients
- Δ is the first difference of the variables

This approach offers insights into both long-term and short-term relationships. Consequently, the study employed an ARDL (p, q, q, ...q) model, which provides a long-run equation and a short-run error correction model.

- $Q_i = (1 - \delta)$, group – specific of adjustment coefficient (expected that $Q_i < 0$)
- P and q are optimal lag orders
- $\Delta_i =$ Long–run relationship vector

$Q_{ij} =$ the coefficient of short-run dynamic

$\varepsilon_{ij} =$ is the error term

The study further evaluated the model assumptions and identify whether any observations have a large unjustifiable impact on the study, diagnostic tests are employed in econometrics. As a result, Lastly, the stability tests via cu sum and cu sum of square to ascertain the stability of the parameter estimated of the variables in the study were conducted.

Data Sources and Measurements

This study used annual time series data spanning 35 years (1987-2022) for Nigeria, published by the Central Bank of Nigeria (CBN, 2023). Economic performance is measured with data on GDP growth rate in Nigeria for the period under observation. The fiscal deficit was measured using the difference between total government expenditure and total revenue over the years. The institutional quality is measured in political right index computed through a principal component analysis of six major institutional quality indicators, government effectiveness (Gov_effc), political stability (Pol_stab), rule of law (Rule_law), regulatory quality (Reg_qlty), voice and accountability (voice_acct) and control of corruption (cont_corr). The consumer price index (CPI) was used as a proxy for inflation rate. The consumer price index reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals such as yearly. Interest rate was measured using primary lending rate. Gross fixed capital formation was measured as total gross fixed capital formation (% of GDP).

Descriptive Statistics Result

The collected data were subjected to descriptive statistical analysis in order to meet the study's objective and the results are shown as follows:

Table 1 Summary of Descriptive Statistics

Variable	GDP-rate	IQ	INT	INF	GFCF	FD
Mean	4.2764	-6.7341	18.5988	19.8073	29.7586	-2583.588
Maximum	15.3292	-6.0604	31.6500	72.8353	30.0689	32.0494
Minimum	-2.0351	-7.6027	11.4831	5.2880	29.3660	-21593.04
Std.Dev	3.8450	0.4045	3.9307	17.4173	0.1707	5473.270
Skewness	0.4792	-0.4235	1.0428	1.7359	-0.2043	-2.3167
Kurtosis	3.4933	2.4705	4.9434	4.7109	2.4211	-7.0800

Jarque-bera	1.7440	0.9769	12.1893*	22.4706*	0.7532	57.1711*
Probability of J-B	0.4183	0.6136	0.0023	0.0000	0.6862	0.0000

Source: Authors' compilation (2024).

Note: *, and ** indicates significant level at 1 per cent, and 5 per cent respectively.

Table 1 contains the descriptive statistic results. The study found that the mean estimator determines the average data point. Every value in the data set is factored into the mean's calculation, which is crucial characteristic. Mean estimator provides actual average moment of the data. These include; 4.2764, -6.7341, 18.5988, 19.8073, 29.7586 and -2583.5870 for GDP growth rate (GDP_rate). Institutional quality (IQ), interest rate (INT), inflation rate (INF), gross fixed capital formation (GFCF) and fiscal deficit (FD) respectively. The above shows that fiscal deficit (FD) has 2582.5880, institutional quality (IQ) of -6.7841, interest rate (INT) of 18.5988, inflation rate (INF) of 19.8073, gross fixed capital formation of 29.7506. GDP growth rate (GDP_rate) has the lowest mean value of 4.2764.

The standard deviation for GDP growth rate (GDP_rate), institutional quality (IQ), interest rate (INT), inflation rate (INF), gross fixed capital formation (GFCF) and fiscal deficit (FD) are 3.8450, 0.4045, 3.9307, 17.4173, 0.1707 and 5473.2700 respectively. By implication, the value of the standard deviations revealed fluctuation of the study variables from the mean. Fiscal deficit (FD) is more volatile because it has the highest standard deviation (5473.2700). gross fixed capital formation (GFCF) is less variable with lowest standard deviation (0.1707). A low standard deviation implies that most of the numbers are very close to the mean, such as institutional quality (IQ), interest rate (INT), GDP growth rate (GDP_rate) and inflation rate (INF) are close to the sample mean.

Skewness, is a parameter included in the descriptive statistics that offers details on the asymmetric probability of the study variables, it is another parameter that is presented. From the foregoing, as presented by the analysis, the skewness of the study variables includes; 0.4792, -0.4235, 1.0428, 1.7359, -0.2043 and -2.3167 for GDP growth rate (GDP_rate), institutional quality (IQ), interest rate (INT), inflation rate (INF), gross fixed capital formation (GFCF) and fiscal deficit (FD) in that order. Having the skewness values greater +1 or -1 implies that GDP growth rate (GDP_rate), interest rate (INT), inflation rate (INF) were positively skewed while institutional quality (IQ), gross fixed capital formation (GFCF) and fiscal deficit (FD) were negatively skewed.

Additionally, offers details on the length of the distribution tail. Kurtosis values for the following variables are as follows GDP growth rate (GDP_rate) (3.4933), interest rate (INT) (4.9434), inflation rate (INF) (4.7109) and fiscal deficit (FD) (7.0800) are leptokurtic in nature. This implies

that kurtosis statistics are greater than 3 ($K > 3$). This means that their distribution are more peaked than a normal distribution with longer tails. However, institutional quality (IQ) (2.4905) and gross fixed capital formation (GFCF) (2.4211) are platykurtic in nature since their kurtosis statistics are less than 3 ($k < 3$). This means that their distribution is flatter than a normal distribution with shorter tails. Also, the Jarque -Bera statistics showed that GDP growth rate (GDP_rate), institutional quality, gross fixed capital formation have probability values greater than 0.05. This means that their Jarque-Bera statistics are not statistically significant at 5 per cent level, which indicates that these variables are normally distributed. However, the remaining variables have their probability values of Jarque–Bera less than 0.05. This means that their Jarque–Bera statistics are statistically at 5 per cent level, suggesting that their distributions do not follow a normal distribution.

Correlation Analysis

Table 2 Matrix of Correlation Coefficients

Variables	GDP_rate	FD	IQ	INT	INF	LOG(GFCF)
GDP_rate	1.000					
FD	0.4709	1.000				
IQ	-0.7240	-0.2917	1.000			
INT	0.5962	0.6983	-0.4685	1.000		
INF	-0.1340	-0.2392	-0.1356	-0.2229	1.000	
LOG(GFCF)	-0.5393	-0.5660	0.3882	-0.239	-0.5365	1.000

Source: Authors' compilation (2024).

Table .2 contains the correlation analysis result of the study variables. All pair-wise correlation coefficients were less than 0.8 which excluded any multicollinearity issues. This suggests that there are no significant multicollinearity between any two variables of the study because correlation coefficient among them are (< 0.8), the indicated threshold for multicollinearity. Inflation rate (INF) has the lowest correlation coefficient of -0.1340, indicating a negative and very weak link between the two independent variables.

Unit Root Test

The study employed the Augmented Dickey Fuller (ADF) and the Phillips-Peron (PP) tests to ascertain the stationarity properties of the variables. Table 4.3 showed that all variables are stationary at levels, $I(0)$, except fiscal deficit and institutional quality which were stationary at first difference, $I(1)$, the series are combination of $I(0)$ and $I(1)$.

Table 3 Unit Root Tests

Variable	ADF				PP			
	Level	Ist diff	5% critical value	Decision	Level	Ist diff	5% Critical value	Decision
GDP_rate	-3.9347* (0.0045)	N/A	-1.9504	I ₀	-3.8267* (0.0000)	N/A	-2.9458	I ₀
IQ	-2.7084	-6.1124* (0.0000)	-1.9602	I ₁	-3.3596	-6.6591* (0.0000)	-1.9602	I ₁
(FD)	5.0705	-3.4453* (0.0011)	-1.9510	I ₁	-3.1081	-4.223** (0.0108)	-3.5485	I ₁
INT	-3.5172** (0.0544)	N/A	-3.2124	I ₀	-4.2718* (0.0093)	N/A	-3.5443	I ₀
INF	-3.5391** (0.0129)	N/A	-2.9511	I ₀	-3.5711** (0.0472)	N/A	-3.5443	I ₀
LOG(GFCF)	-5.8826* (0.0001)	N/A	-3.5485	I ₀	-5.6760* (0.0002)	N/A	-3.5443	I ₀

Source: Authors' compilation (2024).

Note: *,and ** indicates significant level at 1 per cent, and 5 per cent respectively

Table 5 Bound Test of Co-integration

Test statistics	Value	Significance	i ₍₀₎ Bound	i ₍₁₎ Bound
F-statistic	8.9990	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Authors' compilation (2024).

Table 5 presents the result of the Bounds test of the interactive of fiscal deficit and institutional quality on economic performance in Nigeria. The result revealed that the lower and upper bound critical value are 2.27 and 3.28 respectively at 5% level of significance. The calculated F-value suggests the existence of a long-run effect among the variables since the test statistics of 8.9990 is above the upper bound critical value at a 5% level of significance. The result confirms that a short-run and long-run relation exists among the variables of study.

Table 6 Short–Run Result of Interactive Effect of Fiscal Deficit and Institutional Quality on Economic Performance

Variable	Coefficient	Std Error	t-statistics	Prob
D(FD_IQ)	-0.0120	0.0024	- 0.4997	0.6256
INT	0.4362 **	0.1879	2.3216	0.0358
DLOG(GFCF)	-8.1624*	2.5551	-3.1945	0.0065
ECT(-1)	- 0.9048*	0.0871	-10.3917	0.0000

Source: Author’s Compilation (2024)

Note: *, and ** indicates significant level at 1 per cent, and 5 per cent respectively.

Table 6 presents the estimated result of the short-run of interactive effect of fiscal deficit and institutional quality on economic performance. From Table 4.13 the interaction of fiscal deficit and institutional quality (FD_IQ) has a negative coefficient of -0.0120 but not significant. This implies that interaction of fiscal deficit and institutional quality do not have significant effect on economic performance. However, interest rate (INT) has the coefficient of 0.4362 and significant. Also, gross fixed capital formation (GFCF) has a coefficient value of -8.1624 which implies that a percentage rise in gross fixed capital formation (GFCF) leads to a reduction of -8.1624 percentage point in economic performance in Nigeria. The finding presents a deviation from the theory that economic performance rises with increase in gross fixed capital formation.

Consequently, error correction result shows a coefficient of -0.9048 of an associated probability of 1%. Predicted sign for the error component is negative but significant at 1% level as expected. This suggests that it will take 1.1years for any divergence in the fiscal deficit, institutional quality interaction to reach equilibrium. This outcomes further substantiate the presence of a long-run effect among the variables of all the models at a space of adjustment of 1%.

Table 7 Long Run Result of Interactive Effect of Fiscal Deficit and Institutional Quality on Economic Performance

Variable	Coefficient	Std Error	t-statistics	Prob
INT	0.0104	0.2565	0.0407	0.9681
INF	-0.3624*	0.1063	-3.4080	0.0042
IQ	-6.2000*	1.3575	-4.4934	0.0005
FD*IQ	-0.0011	0.0007	-1.5081	0.1538
FD	-0.0075	0.0049	-1.5312	0.1480
LOG(GFCF)	-22.3626*	6.4272	-3.4794	0.0037

Source: Authors' compilation (2024).

Note: *, and ** indicates significant level at 1 per cent and 5 per cent respectively

Table 7 presents the result of the long-run interaction of fiscal deficit and institutional quality on economic performance in Nigeria. The interaction of fiscal deficit and institutional quality (FD_IQ) has a coefficient value of -0.0011 and not significant. The insignificant result implies that the institutional quality has failed to reduce the negative effect of fiscal deficit on economic performance in Nigeria. Fiscal deficit (FD) has the coefficient of (-0.0075) and not significant. In the same vein, institutional quality (IQ) decreases economic performance (GDP_rate) in Nigeria by -6.2000 percentage points, for a percentage increase in institutional quality (IQ). This outcome is inconsistent with the theory which predicts that the rising institutional quality (IQ) will improve economic performance in Nigeria. Also, interest rate (INT) has a coefficient of 0.0104 and not significant. Moreover, inflation rate (INF) has a value of -0.3624 and significant at 5% level.

Additionally, the gross fixed capital formation (GFCF) has coefficient value of -22.3626, indicating that an increase in gross fixed capital formation (GFCF) causes economic performance (GDP_rate) in Nigeria to reduce by -22.3626 percentage points. The outcome of the gross fixed capital formation (GFCF) is below what was anticipated theoretically.

Table 8 Diagnostic Test of Fiscal Deficit and Institutional Quality on Economic Performance

Tests	Value	Prob
Jarque – Bera Normality Test	0.3643	0.8335
Serial Correlation LM Test	0.5108	0.8435
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.5108	0.8435

Source: Authors’ Compilation (2024)

In addition to the estimations, some diagnostic tests such as the residual tests (which include Jarque-Bera Normality test, Serial correlation LM Tests and Breusch–Pagan-Godfrey Heteroskedasticity Test) to assess the econometric properties of the data from Table 4.15, the Jarque-Bera statistics of the Normality was not significant suggesting that the residual of the regression estimate was normally distributed. Also, the F-statistics of both the Serial correlation LM test and the Heteroskedasticity test were not significant confirming the absence of serial correlation and Heteroskedasticity problem in the residual of the regression estimate. The implication of these is that the regression model was appropriately estimated.

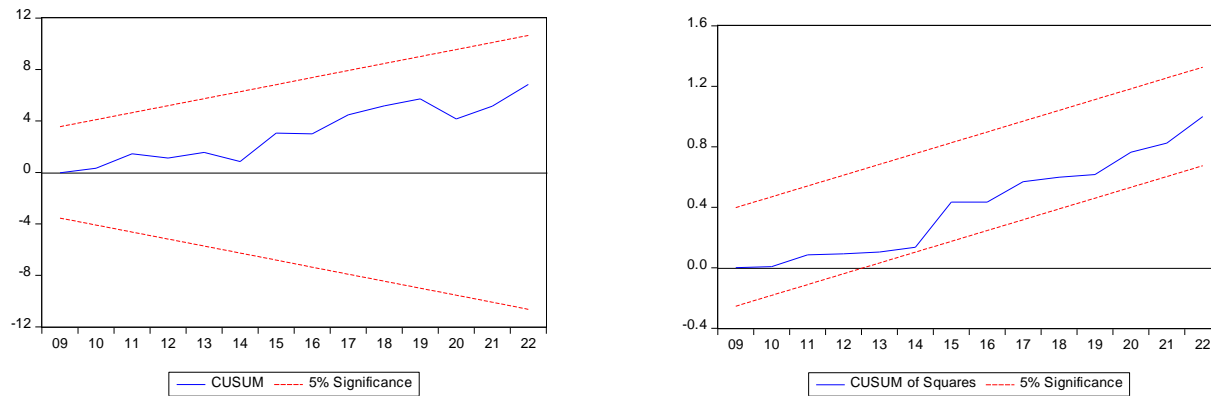


Figure 1 Stability Tests (CUSUM) test and (CUSUM) of squares test

The stability test conducted via CUSUM and CUSUM of squares tests in Figure 4.3 indicated that the parameters of the estimated model are within the critical line at a significant level of 5% suggesting that the estimated model was dynamically stable and the estimated results are reliable and satisfactory for policy inferences.

CONCLUSION AND RECOMMENDATIONS

The study examined the effect of fiscal deficit, institutional quality on Nigeria's economic performance. The interaction of fiscal deficit and institutional quality exert negative and insignificant effect on economic performance both in the short-run and long-run. The study concluded that fiscal deficit and institutional quality do not significantly influence Nigeria's economic performance, suggesting that other macroeconomic variables and external factors are more critical in driving the economy. Therefore, the study recommends that the policies should address fiscal deficit and institutional quality separately, rather than focusing on their interaction.

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