International Journal of
Advanced Research in Accounting, Economics and Business Perspectives
p-ISSN: 2636-6894 | e-ISSN: 2636-6886

IJARAEBP
Vol. 8, No. 1
June, 2024

Impact of Fiscal Deficit on Economic Performance in Nigeria

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Article DOI: 10.48028/iiprds/ijaraebp.v8.i1.05

Abstract

This study investigates the impact of fiscal deficit on economic performance in developing countries, focusing on Nigeria as a case study. Specifically, it assesses the effects of fiscal deficit on real GDP growth and the unemployment rate, utilizing annual time series data spanning from 1981 to 2022. The Ordinary Least Squares technique is employed for data analysis. The findings reveal that fiscal deficit, trade globalization, and domestic investment exert positive and significant influences on real GDP growth. However, the population growth rate exhibits a positive yet insignificant effect on real GDP growth. Moreover, the study indicates that fiscal deficit and domestic investment have negative and insignificant effects on the unemployment rate, while real GDP growth demonstrates a negative and significant impact on the unemployment rate. Additionally, the population growth rate is found to have a positive and significant effect on the unemployment rate. Based on these results, policymakers are advised to exercise prudent management of fiscal deficit spending to bolster economic growth, while simultaneously addressing concerns related to fiscal sustainability. Furthermore, policymakers are encouraged to adopt a comprehensive approach that integrates targeted interventions to stimulate job creation with broader structural reforms aimed at enhancing labor market functioning and improving long-term employment prospects.

Keywords: *Economic Growth, Economic Performance, Fiscal Deficit, GDP, Unemployment*

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Background to the Study

A robust economy holds promise for poverty reduction by enhancing productive capacity, thereby facilitating increased provision of goods and services, job creation, and income generation. Additionally, it elevates living standards and bolsters economic power and prestige. Efficient financial intermediation is highlighted as a key avenue to foster economic performance (Fisher, 2023). Economic performance is commonly evaluated based on macroeconomic objectives such as economic growth (real GDP growth), employment, and price stability (Jílková & Skaličková, 2019).

Gross Domestic Product (GDP) represents the market value of all goods and services produced within an economy over a specified period, typically a year (Investopedia, 2023). Real GDP serves as a vital indicator of an economy's size and performance, with fluctuations indicating the economic state. Employment, alternatively, denotes engagement in paid work, whether as an employee or through self-employment. It not only ensures income but also enhances individuals' self-worth and confidence, thereby promoting social and economic status (United Nations Development Programme - UNDP, 2013). High employment or low unemployment rates are commonly associated with improved economic performance. Price stability, characterized by minimal fluctuations in average prices of goods and services over time, is another yardstick for economic performance. Significant price changes signify instability, reflecting poor economic performance. Governments worldwide strive to achieve economic performance goals (Hawkes, 2023).

Fiscal deficit refers to a scenario where a government's total expenditure surpasses its total income in a given fiscal year. Several factors can contribute to fiscal deficits, including inadequate tax collection, corruption, uncontrolled spending, and excessive government expenditure (Gllogjani & Balaj, 2021; Gushibet 2021). Theoretical perspectives on fiscal deficit diverge: Keynesians view it favorably, suggesting it can expedite economic recovery during recessions by boosting aggregate demand and promoting growth (Edame & Okoi, 2015). Conversely, the opposing view contends that high fiscal deficits can undermine economic performance, leading to reduced national savings, diminished domestic investment, and macroeconomic imbalances (Mavodyo, 2020). In many developing countries, including Nigeria, policymakers are increasingly focused on curtailing excessive fiscal deficits to achieve fiscal prudence and balance budgets (IMF, 2020). Nigeria has grappled with persistent fiscal deficits, contributing to economic challenges such as high unemployment rates, inflation, and sluggish growth (Egole, 2023). Despite significant spending, the country has yet to achieve sustained economic growth, low unemployment, and price stability. Therefore, understanding the impact of fiscal deficits on Nigeria's economic performance is imperative.

While numerous studies have explored the relationship between fiscal deficits and economic growth, there is a dearth of research linking fiscal deficits to unemployment and price stability in Nigeria. This study seeks to address this gap by examining the empirical effects of fiscal deficits on unemployment and price stability in the Nigerian context. The research questions for this study are delineated as follows:

i. What impact does fiscal deficit have on real GDP growth in Nigeria?

ii. How does fiscal deficit influence the unemployment rate in Nigeria?

The specific objectives are outlined as follows:

i. To analyze the influence of fiscal deficit on real GDP growth in Nigeria.
ii. To ascertain the relationship between fiscal deficit and the unemployment rate in Nigeria.

Theoretical Literature

Neoclassical Theory

This study is grounded in the Neoclassical theory, which finds its origins in the works of Lucas (1986) and Barro (1989). Central to this theory is the notion of financing government expenditure through deficits while maintaining reasonable tax rates. It posits that such fiscal arrangements may crowd out private investments, primarily due to a decrease in aggregate supply resulting from borrowing. However, in the short run, government expenditure financed through deficit spending has the potential to reduce unemployment (Musa, 2021). According to the Neoclassical theory, fiscal deficits elevate aggregate consumption in the economy, leading to a reduction in national savings and an increase in the real interest rate. This subsequently hampers investment and overall economic activity. Moreover, an increase in fiscal deficit prompts capital inflows, resulting in exchange rate appreciation in an open economy. Both scenarios contribute to crowding out investment and diminishing net exports. The crowding out of investment, coupled with the presence of external debt, bears adverse implications for future output and overall economic performance (Musa, 2021; Emmanuel, 2016).

Keynesian Theory

This theory is also known as the Income Expenditure Approach and Conventional Approach. According to the Keynesian approach, fiscal deficits have a positive impact on economic growth. An increase in government outlays results in an addition to the money supply, leading to a relative shortfall of demand in accordance with the money supply. This decrease in lending rates incentivizes increased investment, particularly in the private sector, due to the reduced cost of borrowing. The Keynesian multiplier effect then comes into play, further stimulating investment and enhancing output capacity. However, Keynesian theory also acknowledges the potential for crowding out private investment. If fiscal deficits are financed through debt instruments, an increase in lending rates can crowd out private investment due to limited availability of finance (Musa, 2021; Emmanuel, 2016).

The Keynesians also argue that fiscal deficits could negatively impact the external sector, resulting in a trade deficit, but only if the domestic economy fails to absorb the additional liquidity through an expansion in output. This phenomenon is known as the "twin-deficits" hypothesis (Musa, 2021).

The Solow Growth Theory

The Solow Growth Theory elucidates the relationship between a nation's long-term economic growth and fundamental factors such as its saving rate, population growth rate, and rate of

technological progress. It delineates how a nation's economic growth rate evolves over time and whether it will stabilize, accelerate, or cease. The theory also examines whether economic forces exist that would enable poorer countries to catch up with the richest countries in terms of living standards. According to Solow, growth hinges on capital accumulation and autonomous technological change. The model posits that the capital-labor ratio tends to move toward equilibrium over time in the presence of technological advancements. If the actual capital-labor ratio surpasses equilibrium, both capital and output grow more slowly than the labor force, whereas the opposite occurs if the actual ratio is below equilibrium. In this model, the savings rate is represented as sY(t), and the capital stock as K(t). Net investment, denoted as dk/dt, signifies the rate of increase of the capital stock. Output is produced using capital and labor, with technological possibilities being generated by the production function.

$$Y = F(K, L) \quad (1)$$

Where,
K = capital stock and
L = labour-force.

In Solow's model, the production function demonstrates constant returns to scale, indicating that doubling all inputs would result in doubling output. However, when one input, such as labor, is held constant and capital is doubled, the increase in output is less than double, illustrating the concept of diminishing marginal returns. When savings per worker exceed the level required for capital adequacy, both productivity and the capital-labor ratio increase. When savings per worker equal capital adequacy, productivity and the capital-labor ratio remain constant. Conversely, when savings per worker fall below capital adequacy, productivity and the capital-labor ratio decline.

According to Solow, in the absence of productivity growth, the economy reaches a steady state in the long run. In this state, output per worker, consumption per worker, and capital stock per worker remain constant. The real return to factors adjusts to ensure full employment of labor and capital, allowing us to determine the current output rate using the production function. The propensity to save indicates how much of the net output will be saved and invested, thereby determining capital accumulation during the current period. The long-run growth rate of the economy equals the sum of the growth rate of the labor force and the rate of exogenously determined technological progress. Notably, the rate of savings affects only the level of GDP, not the long-run growth rate. While higher savings may temporarily increase the growth rate due to greater capital accumulation, in the long run, the growth rate stabilizes to the sum of labor-force growth and technological progress. Differences in growth rates among countries stem from their respective positions in moving toward the steady state. Wealthier countries are expected to grow at a slower pace than poorer ones, leading to convergence in per capita incomes over time. The steady-state capital-labor ratio is positively related to the saving rate and negatively related to the population growth rate (Jhingan, 2004).

Harrod-Domar

The Harrod-Domar model, formulated independently by Sir Roy Harrod in 1939 and Evsey Domar in 1946, highlights investment as the principal catalyst for economic growth.

Investment's impact is twofold: it stimulates demand and enhances capacity, both of which are essential for driving growth. The model centers on aggregate investment, savings, and the capital-output ratio. In this framework, savings are depicted not merely as a portion of income but also as a predetermined fraction of income, as expressed in equation (2):

$$S = s\,Y \qquad (2)$$

Where:
S = Net savings
S = Proportion of national income, and
Y = National income

Net Investment (I) is defined as the change in the capital stock, **k** and represented as in equation 2:

$$I = \Delta k \qquad (3)$$

but, total capital stock, **k,** relates to output Y, as expressed by the capital-output ratio:

$$k\backslash y = c, \text{ or } \Delta k = c\Delta Y \qquad (4)$$

Finally, because net national savings, S, must equal net investment, I, we can write as:

$$S = I \qquad (5)$$

The Harrod-Domar model suggests that for developing countries to achieve economic growth, governments should promote saving, facilitate technological progress, and decrease the economy's capital output ratio. This model offers a framework for understanding economic growth and has significantly influenced government policies. However, it has its limitations. Firstly, it simplifies production processes by focusing solely on capital, neglecting the role of labor, which is also vital for economic growth. Secondly, estimating the capital output ratio, especially in less developed economies, poses challenges. Finally, there is ongoing debate regarding the significance attributed to capital in the economic growth process (Todaro and Smith, 2011).

Empirical Literature

Banerjee, Boctor, Mehrotra, and Zampolli (2023) explored the correlation between fiscal deficits and inflation risks across 21 advanced economies, spanning from 1975 to 2011. Their findings underscored that the impact of higher deficits on future inflation hinges significantly on the prevailing fiscal and monetary policy regimes. Particularly, they noted stronger inflationary consequences under fiscally-led regimes, where governments prioritize debt stabilization less and monetary policy is less committed to price stability. Behera and Mallick (2022) investigated the effects of fiscal deficits on the economic growth of 14 major Indian states from 1980-81 to 2019-20. Their study, utilizing panel fixed effect regression, revealed that gross fiscal deficit (GFD), tax revenue, and inflation rates had a significant negative impact on

economic growth. They also observed a threshold effect of fiscal deficit on growth, indicating a positive impact within a certain threshold, beyond which it impedes states' economic growth.

Austine, James, Adetokun, and Abdulkamaru (2022) scrutinized the impact of fiscal deficit on Nigeria's economic growth from 1981 to 2020, employing the autoregressive distributed lag approach (ARDL). Their findings indicated a negative impact of government deficit financing on gross domestic product (GDP), along with negative relationships between interest rate and exchange rate with GDP. However, inflation rate was found to have a positive impact on GDP. Bohach and Paientko (2021) examined the impact of fiscal deficit on economic growth across thirty-seven European countries from 2001 to 2019. Their analysis using panel regression highlighted that while fiscal deficit reduction could accelerate economic growth in developed countries, it was inappropriate for fostering growth in developing nations.

Chigbo (2021) utilized the Error Correction Model (ECM) technique to explore the impact of fiscal deficit on Nigeria's economic growth from 1990 to 2020. Their study identified public external debt, total federal collection revenue, and interest rate as driving variables of economic growth, confirming a significant influence of fiscal deficit shocks on long-run economic growth. Hussain, Hussain, Ali, and Ahmad (2021) investigated the short-run and long-run impacts of both the size and composition of fiscal adjustment on growth in Pakistan from 1981 to 2016. Their findings, based on Autoregressive Distributed Lag (ARDL) and Granger causality techniques, revealed that spending-based adjustments enhanced economic growth, while tax-based adjustments reduced growth in the long run.

Kryeziu and Hoxha (2021) explored the effect of deficit to GDP ratio on economic growth in Eurozone countries from 1995 to 2015. Their analysis, using multiple linear regression, suggested a statistically significant positive effect, indicating that an increase in the deficit to GDP ratio had a positive impact on economic growth. Musa (2021) examined the relationship between fiscal deficit and economic growth in Nigeria from 1980 to 2019, employing a descriptive method to depict fiscal trends. The study concluded that fiscal operations were ineffective in providing a conducive macroeconomic environment for sustainable growth. Gyasi (2020) investigated the long-run and short-run relationships between macroeconomic variables, fiscal deficit, and economic growth in Morocco from 1990 to 2017, utilizing the bounds test (ARDL) approach to cointegration. The findings highlighted a significant impact of fiscal deficit on economic growth, particularly in the long run.

Yusuff and Abolaji (2020) examined the influence of budget deficit on Nigeria's economic growth from 1981 to 2016, employing the ARDL bounds test approach. They found significant effects of gross domestic savings, interest rate, and budget deficit on economic growth in the long run, with positive short-run effects of budget deficit and gross domestic savings on growth. Adejoh, Ekeyi, and Mary (2019) analyzed the impact of fiscal deficit on economic growth in Nigeria from 1981 to 2018, using the Autoregressive Distributed Lag (ARDL) model and Granger Causality test methods. Their findings indicated a negative impact of fiscal deficit on economic growth and revealed no causal relationship between fiscal deficit and economic growth. Okoro and Oksakei (2019) investigated the implications of federal government fiscal

deficits on macroeconomic variables in Nigeria from 2000q1 to 2015q4, employing the autoregressive distributed lag (ARDL) model. Their study found no significant impact of federal government deficit on external reserves or inflation in the short run.

Negi (2018) explored the relationship between GDP growth and fiscal deficit in India from 2010 to 2020, using the linear regression model. Their findings indicated a negative short-run relationship between GDP growth and fiscal deficit, suggesting that an increase in fiscal deficit led to a decrease in GDP growth. However, the relationship was insignificant in the long run. Hussain and Haque (2017) investigated the impact of fiscal deficit on economic growth in Bangladesh, utilizing the Vector Error Correction Model technique. They found a mild but negative and significant impact of fiscal deficit on GDP growth, alongside a positive and significant relationship between fiscal deficit and GDP growth, supporting Keynesian theory.

Molefe and Maredza (2017) examined the impact of budget deficit on South Africa's economic growth from 1985 to 2015, using the Vector Error Correction Model (VECM) technique. Their findings revealed an inverse relationship between budget deficit and economic growth, suggesting detrimental effects of high budget deficits on growth. Aero and Ogundipe (2016) investigated the effects of fiscal deficits on Nigeria's economic growth from 1981 to 2014, employing the Threshold Autoregressive (TAR) model. Their study found a significant negative relationship between fiscal deficits, financial depth, and economic growth, with fiscal deficits failing to positively contribute to economic growth.

Arjomand, Emami, and Salimi (2016) examined the effect of growth, efficiency, and government budget deficit in selected MENA countries from 2000 to 2013, utilizing fixed effect panel data analysis. They found a positive effect of labor productivity index and economic growth, alongside a negative correlation of government budget deficit with economic growth.

Emmanuel (2016) explored the impact of deficit financing on Nigeria's economic growth from 1981 to 2014, using the Simple Correlation of Pearson Product Movement Correlation. Their study revealed a positive relationship between public and domestic debts and Gross Domestic Product (GDP), while an inverse relationship was observed between external debt and GDP. Nkrumah, Orkoh, and Owusu (2016) investigated the relationship between Ghana's budget deficit and economic growth from 2000q1 to 2015q4, employing the Autoregressive Distributed Lag (ARDL) approach. They found a significantly negative effect of budget deficits on economic growth, aligning with the Neoclassical proposition that high budget deficits do not necessarily foster economic growth. Nguyen (2015) examined the effects of fiscal deficit and broad money M2 supply on inflation in Asian countries from 1985 to 2012, using the Pooled Mean Group (PMG) estimation-based error correction model and the panel differenced GMM (General Method of Moment) Arellano-Bond estimator. Their findings indicated that broad money M2 supply had a significant positive impact on inflation, while fiscal deficit.

Research Design

This study adopts a time series research design, focusing on tracking observable units over a specific period. Time series research design falls under the category of longitudinal research designs, which involve analyzing extensive series of observations made on the same variable(s) continuously over time. It entails repeated observations of the same unit of analysis to investigate changes over time. Utilizing time series variables, the study measures the same variable(s) consistently over the study period to fulfill its objectives.

Source of Data

The study utilizes time series data spanning from 1981 to 2022. Data sources include the Central Bank of Nigeria (CBN) Statistical Bulletin and the World Bank's World Development Indicators. Specifically, data on unemployment was obtained from the World Development Indicators, while data on other variables were sourced from various issues of the CBN Statistical Bulletin.

Model Specification

Multiple regression analysis is employed to examine the objectives of the study. The functional form of the model for objective one is specified as follows:

$$\text{RGDP} = FDFICIT,\ TRADGLO, \text{PGROWT}, \text{DINV} \quad . \quad . \quad . \quad (1)$$

Where:

RGDP = real GDP growth (annual %)

FDFICIT = fiscal deficit, measured by budget deficit as percentage of GDP.

TRADGLO = trade globalization (measured by total external trade as a ratio of GDP)

PGROWT = population growth rate

DINV = domestic investment

The econometric model is specified as:

$$\text{RGDP} = a_0 + a_1 FDFICIT + a_2 \text{TRADGLO} + a_3 PGROWT + a_4 \text{DINV} + u_t \quad (2)$$

Where all the variables remained as defined earlier

u_t = error term

In equation (2), where a1, a2, a3, and a4 represent parameters to be estimated, the a priori expectation for all parameters is positive, with the exception of fiscal deficit and population growth, which could be positive or negative. This model, specified to address objective one, aims to capture the impact of fiscal deficit on real GDP growth.

To address objective two, which focuses on determining the influence of fiscal deficit on the unemployment rate, the following functional form is specified:

$$\text{UNEMP} = FDFICIT,\ RGDP, \text{PGROWT}, \text{DINV} \quad (3)$$

Where:

UNEMP = unemployment rate (% of total labour force)

FDFICIT = fiscal deficit, measured by budget deficit as percentage of GDP

RGDP = real GDP growth (annual %)

PGROWT = population growth rate

DINV = domestic investment

The econometric model is specified as:

$$\text{UNEMP} = \beta_0 + \beta_1 FDFICIT + \beta_2 \text{RGDP} + \beta_3 PGROWT + \beta_4 \text{DINV} + u_t \qquad (4)$$

Where all the variables remained as defined earlier
u_t = error term

In equation (4), where β1, β2, β3, and β4 represent parameters to be estimated, the a priori expectation for all parameters is negative, except for population growth, which may be positive or negative. This model, denoted to address objective two, aims to capture the relationship between fiscal deficit and the unemployment rate.

Definition of variables in the Models

Fiscal Deficit (FDFICIT): This refers to the situation where the total expenses of the government exceed its total income. Typically, it is quantified as the budget deficit as a percentage of the Gross Domestic Product (GDP).

Unemployment Rate (UNEMP): This metric represents the percentage of individuals who are unemployed and actively seeking employment within the labor force. It serves as a widely used indicator of unemployment in various studies.

Trade Globalization (TRADGLO): Trade globalization measures the extent to which a country engages in international trade activities. It encompasses both the proportion of production exported/imported and the number of jobs reliant on external trade. This is often quantified as the total external trade relative to the GDP.

Population Growth (PGROWT): Population growth rate indicates the rate at which a country's population increases over time. In this study, it serves as a proxy for the expansion of the labor force since a growing population typically implies an expanding labor force.

Real GDP Growth (annual %): This metric represents the annual percentage change in the real Gross Domestic Product (GDP) of a country. It is widely accepted as a key indicator of economic growth in academic literature and policymaking circles.

Estimation Technique

The regression equations for objectives one and two will be estimated using the Ordinary Least Squares (OLS) technique. OLS is a widely used and efficient method for estimating linear regression equations. It is considered the best linear and unbiased estimator under certain conditions, such as when the errors have finite variances, the regressors are exogenous, and there is no multicollinearity. OLS is optimal among linear unbiased estimators when the errors are homoscedastic and serially uncorrelated. This technique works by minimizing the sum of squared residuals, thereby providing unbiased estimates of the regression coefficients when the

errors have finite variances. Additionally, OLS assumes that the errors follow a normal distribution, which is a common assumption in regression analysis.

Results and Discussion

Descriptive Statistics of the Variables

The descriptive statistics of the variables were estimated and the results are reported in Table 1.

Table 1: Descriptive Statistics

Variables	Obs	Mean	Standard Deviation	Minimum value	Maximum value	P-value (Skewness)	P-value (Kurtosis)
RGDP	42	3.0464	5.3195	-13.1278	15.3292	0.0227	0.0305
FDFICIT	42	-2.5622	1.8502	-8.5696	0.7843	0.0377	0.0972
TRADGLO	42	59.1218	27.0398	21.1158	133.6891	0.2945	0.9971
PGROWT	42	2.6167	0.0704	2.5192	2.7565	0.4666	0.0013
DINV	42	9321.227	15038.99	87.1449	65227.13	0.0000	0.0003
UNEMP	42	3.6663	0.9171	1.9	5.633	0.5099	0.9914

Source: Estimated by the authors

The mean values of real GDP growth (annual %), fiscal deficit, trade globalization, population growth rate, and unemployment rate are approximately equal to their respective standard deviation values. This suggests that the data values for these variables are closely distributed around their means. However, the mean value of domestic investment significantly exceeds its standard deviation, indicating that the variable's data values are much higher than its mean.

Regarding the minimum and maximum values, they all fall within the range of the respective mean values, indicating that the data distribution for each variable encompasses values both above and below the mean. This suggests that there are no outliers present in the data. In terms of skewness, real GDP growth (annual %), fiscal deficit, and domestic investment exhibit significant probability values, rejecting the null hypothesis of normal distribution. This implies that the distribution of data for these variables is skewed either to the right or left. Conversely, trade globalization, population growth rate, and unemployment rate show insignificant skewness probability values, suggesting that their data distributions are symmetrical and normally distributed. Regarding kurtosis, real GDP growth, population growth rate, and domestic investment demonstrate significant results, rejecting the null hypothesis of a normal distribution's kurtosis. This indicates that the data distributions for these variables differ from those of a normal distribution in their tails. Conversely, fiscal deficit, trade globalization, and unemployment rate exhibit statistically insignificant results, suggesting that their data distributions conform to those of a normal distribution's tails.

Unit Root Test

The Augmented Dickey-Fuller and the Phillips-Perron tests were used to test for the stationarity of the time series variables used for this study. The test result is reported in Table 2.

Table 2: Augmented Dickey-Fuller and Philips–Perron unit root Test Results

Variable	Augmented Dickey-Fuller Result		Philips–Perron Result		Lag order	Order of Integration
	Level	1st Difference	Level	1st Difference		
RGDP	-2.670	-4.079	-3.098	-10.921	2	I(1)
FDFICIT	-2.731	-4.537	-3.126	-7.354	2	I(1)
TRADGLO	-2.662	-4.596	-2.872	-5.741	2	I(1)
PGROWT	-2.234	-3.867	-2.840	-4.132	2	I(1)
DINV	-1.735	-3.760	-2.204	-4.786	2	I(1)
UNEMP	-2.175	-4.613	-2.014	-4.242	2	I(1)

Where * denotes significance at 5% and the rejection of the null hypothesis of the presence of unit root. The optimal lag length of 2 was chosen using Akaike's Final Prediction Error (FPE), and Akaike's information criteria. The ADF 5% critical value at levels is -3.544, while at 1st difference is -3.548. The Philips–Perron critical value at levels and 1st difference are -3.536 and -3.540. A trend was included in both the Augmented Dickey -Fuller and Philips –Perron unit root test models estimated.

Source: Estimated by the authors

The Augmented Dickey-Fuller test results indicate that, at the level, all variables tested exhibit test statistics lower than the 5 percent critical value, suggesting statistical insignificance. Therefore, the null hypothesis of a unit root's presence is accepted at the level, implying that the variables are nonstationary in their original form. To address nonstationarity, the variables were differenced once, and the Augmented Dickey-Fuller test was rerun. This time, the test statistics for all variables at the first difference exceeded the 5 percent critical value, leading to the rejection of the null hypothesis of a unit root's presence at the first difference. Consequently, this indicates the stationarity of all variables at the first difference. Similar results were obtained from the Philips-Perron test, corroborating the findings from the Augmented Dickey-Fuller test. At the level, none of the variables exhibited stationarity, but upon differencing once, the variables became stationary. Thus, all variables demonstrate stationarity at the first difference.

Fiscal Deficit and Real GDP Growth

Objective one aims to investigate the influence of fiscal deficit on real GDP growth. Prior to the analysis for this objective, the cointegration of the variables in the model was assessed using the Johansen tests for cointegration. This test evaluates the null hypothesis of no levels relationship among the variables. The results are outlined in Table 3.

Table 3: Result of Johansen tests for cointegration

Maximum rank	Eigenvalue	Trace statistic	5% Critical value
0	-	90.7052	59.46
1	0.6212	51.8713	39.89
2	0.4599	27.2316	24.31
3	0.3103	12.3747*	12.53
4	0.2487	0.9345	3.84
5	0.0230	-	-

Source: Estimated by the authors

The comparison between the trace statistics and the respective 5 per cent critical values reveals that the trace statistics up to the maximum rank of 2 are all greater than the critical values. This indicates that the variables exhibit a long-run relationship. Specifically, the variables in the equation for objective one display three cointegrating equations. Therefore, the null hypothesis of no cointegration is rejected at the 5% significance level. The primary result for objective one is depicted in Table 4. In this table, the coefficients of the variables are all positive. Additionally, fiscal deficit, trade globalization, and domestic investment are found to be statistically significant, whereas population growth is statistically insignificant.

Table 4: Estimates of the Impact of Fiscal Deficit on Real GDP Growth

	Coefficient	Standard error	t-value	p-value
FDFICIT	0.5520	0.1741	3.17	0.000
TRADGLO	0.0426	0.0156	2.74	0.002
PGROWT	6.5239	22.0480	0.30	0.769
DINV	0.1403	0.0592	2.37	0.011
Constant	0.2436	0.8437	0.29	0.774
R-squared		0.7854		
Adj R-squared		0.7162		
F-statistics		29.84 (p = 0.0005)		
Durbin–Watson d-statistic (5, 41)		2.0528		
Breusch–Godfrey LM test		0.869 (p = 0.7050		
Breusch–Pagan/Cook–Weisberg test		1.92 (p = 0.1654)		

Source: Estimated by the authors

Specifically, the fiscal deficit coefficient is 0.5520 with a significant t-value of 3.17 and a p-value of 0.000, indicating rejection of the null hypothesis at the 5% significance level. This suggests that fiscal deficit has a positive and significant impact on real GDP growth (annual %), with a percentage increase in fiscal deficit corresponding to a 0.55% significant increase in real GDP growth. Trade globalization exhibits a positive coefficient of 0.0426 with a significant t-value of 2.74 and a p-value of 0.002, leading to rejection of the null hypothesis at the 5% significance level. This implies that globalization has a positive and significant impact on real GDP growth (annual %), with a percentage increase in trade globalization resulting in about a 0.04% increase in real GDP growth.

The population growth rate presents a positive and insignificant coefficient of 6.5239, indicating that a percentage increase in population growth results in an insignificant growth of real GDP by 6.52%. Thus, the population growth rate has a positive but insignificant impact on real GDP growth.

Domestic investment shows a positive and significant coefficient of 0.1403 with a t-value of 2.37, leading to rejection of the null hypothesis at the 5% significance level. This suggests that domestic investment has a statistically significant impact on real GDP growth, with an increase in domestic investment corresponding to a 0.14% significant increase in real GDP growth.

The coefficient of determination (R2) value is 0.7854, indicating that the variables jointly determine a 78.54% change in real GDP growth, while a 21.46% variation is determined by other variables not specified in the equation for objective one. The F-statistics (29.84) is significant with an F-probability value of 0.0005, indicating that the variables jointly significantly affect real GDP growth. The Durbin-Watson d-statistic is approximately 2, indicating no autocorrelation, supported by the insignificant Breusch-Godfrey LM chi2 value, accepting the null hypothesis of no serial correlation. The Breusch–Pagan test statistic is 1.92 with an insignificant p-value of 0.1654, indicating acceptance of the null hypothesis of homoscedasticity or constant variance. This confirms the reliability of the estimated coefficients as unbiased and with minimum variance. Multicollinearity of the variables was assessed using the Variance Inflation (VIF) test, and the results are presented in Table 5.

Table 5: Results of the model one VIF test for multicollinearity

Variable	VIF	1/VIF
TRADGLO	3.21	0.311138
DINV	2.51	0.397814
FDFICIT	1.46	0.683039
PGROWT	1.36	0.733274
Mean VIF	2.14	

Source: Competed by the authors

The results indicated a very low variance inflation value, significantly below the conventional threshold of 10. With values below 10, we accept the null hypothesis of no multicollinearity. Therefore, the independent variables in the model for objective one does not exhibit multicollinearity issues.

Fiscal Deficit and the Unemployment Rate

Before proceeding with the analysis for objective two, the cointegration test result of the variables in the model is presented to demonstrate the level of relationship among them. The outcome of this test is displayed in Table 6.

Table 6: Result of Johansen tests for cointegration

Maximum rank	Eigenvalue	Trace statistic	5% Critical value
0	-	69.3584	59.46
1	0.5269	39.4178*	39.89
2	0.4547	15.1587	24.31
3	0.1908	6.6885	12.53
4	0.1493	0.2209	3.84
5	0.0055	-	-

Source: Estimated by the authors

The trace statistics are compared with the respective 5 per cent critical values. The trace statistics of maximum rank 0 are found to be greater than its critical value, indicating significance at the 5 per cent level. Consequently, the null hypothesis of no cointegration is rejected. This implies that the variables have a long-run relationship. Specifically, the variables in the equation for objective two exhibit 1 cointegrating equation. The main results for objective two are presented in Table 4.7. The coefficients for the population growth rate are positive and significant, while those for real GDP are negative and significant. However, fiscal deficit and domestic investment show negative coefficients that are statistically insignificant at the 5 per cent level.

Table 7: Estimates of the Impact of fiscal Deficit on Unemployment Rate

	Coefficient	Standard error	t-value	p-value
FDFICIT	-0.0090	0.0265	-0.34	0.734
RGDP	-0.0278	0.0096	-2.88	0.007
PGROWT	4.6205	1.2803	3.61	0.001
DINV	-2.9800	0.00001	-0.21	0.833
Constant	0.0568	0.0490	1.16	0.254
R-squared		0.6446		
Adj R-squared		0.3828		
F-statistics		17.20 (p = 0.0012)		
Durbin–Watson d-statistic (5, 41)		1.6038		
Breusch–Godfrey LM test		0.087 (p = 0.2971		
Breusch–Pagan/Cook–Weisberg test		0.99 (p = 0.2711)		

Source: Estimated by the authors

The fiscal deficit coefficient is -0.0090 with an insignificant t-value of -0.34 and a p-value of 0.734. These insignificant values indicate acceptance of the null hypothesis at the 5 per cent level, suggesting that fiscal deficit has a negative and insignificant impact on the unemployment rate. A percentage increase in fiscal deficit results in about a 0.01 per cent insignificant decrease in the unemployment rate. Real GDP exhibits a negative coefficient of -0.0278 with a significant t-value of -2.88 and a p-value of 0.007. This significant t-value rejects the null hypothesis at the 5 per cent level, indicating that real GDP growth has a negative and significant impact on the unemployment rate. A percentage increase in real GDP growth leads to about a 0.03 per cent decrease in the unemployment rate. The population growth rate shows a positive and significant coefficient of 4.6205, implying that a percentage increase in population growth results in a significant rise in the unemployment rate. Thus, the population growth rate has a positive and significant impact on the unemployment rate.

Conversely, domestic investment exhibits a negative and insignificant coefficient of -2.9800 with a t-value of -0.21. Since the t-value is insignificant, the null hypothesis is accepted at the 5 per cent level, suggesting that domestic investment has a statistically insignificant impact on the unemployment rate. An increase in domestic investment leads to a 2.98 per cent insignificant decrease in the unemployment rate. Therefore, domestic investment has a negative and insignificant impact on the unemployment rate.

The coefficient of determination (R2) value is 0.6446, indicating that the variables jointly determine a 64.46 per cent change in the unemployment rate, while a 35.54 per cent variation is determined by other variables. The F-statistics 17.20 with a p-value of 0.0012 is significant, suggesting that the variables jointly significantly affect the unemployment rate. The Durbin-Watson d-statistic, approximately 2, indicates no autocorrelation, supported by the insignificant Breusch-Godfrey LM chi2 value, indicating no serial correlation. The Breusch–Pagan test statistic is 0.99 with an insignificant p-value of 0.2711, supporting the null hypothesis of constant variance. This validates the reliability of the coefficients estimated. Additionally, the variance inflation values are far below the conventional 10, suggesting no multicollinearity among the independent variables in the model for objective two.

Summary, Conclusion and Recommendations

Summary of Findings

The key findings of this study can be summarized as follows:

i. In relation to objective one, the analysis revealed that fiscal deficit, trade globalization, and domestic investment exerted a positive and significant influence on real GDP growth. Additionally, the study found that while the population growth rate had a positive effect on real GDP growth, this impact was statistically insignificant.
ii. Regarding objective two, the results indicated that fiscal deficit and domestic investment had a negative and insignificant effect on the unemployment rate. Conversely, real GDP growth exhibited a negative and significant impact on the unemployment rate. Furthermore, the study identified a positive and significant relationship between the population growth rate and the unemployment rate.

Conclusion

This study delved into the repercussions of fiscal deficit on economic performance within developing nations, using Nigeria as a focal point. Employing the Ordinary Least Square technique, numerous insights were gleaned. The findings underscored the pivotal roles of fiscal deficit, trade globalization, and domestic investment as influential factors shaping economic growth. Although population growth was found to have some impact on economic expansion, its significance in driving growth was relatively subdued.

Furthermore, while fiscal deficit and domestic investment were observed to marginally decrease the unemployment rate, the extent of this reduction lacked statistical significance. This underscores the necessity for policymakers to reassess the efficacy of fiscal policies and investment strategies in effectively addressing unemployment challenges. Notably, the study highlighted a direct and significant correlation between economic growth and the reduction of unemployment rates, while emphasizing the detrimental effect of rapid population growth on unemployment levels.

Recommendations for Policy

The study presents the following recommendations:

i. Policymakers should exercise prudent fiscal management when utilizing deficit spending to bolster economic growth, while simultaneously addressing apprehensions

regarding fiscal sustainability.

ii. Alongside fiscal deficit spending, policymakers should embrace a holistic approach that integrates focused initiatives to stimulate job creation with overarching structural reforms aimed at enhancing the efficiency of the labor market and fostering long-term employment opportunities.

iii. Comprehensive and precisely targeted policy measures should be implemented to tackle structural unemployment hurdles and foster an environment conducive to inclusive economic growth.

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