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Fiscal Policy, Economic Diversification and Economic Growth in Nigeria: An Analysis on the Long Run Relationship

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Abstract

Nigeria's fiscal policy has largely centered on short-term objectives such as revenue generation, with inadequate focus on long-term structural reforms. The economy remains characterized by an inefficient tax system and a persistent dependence on oil revenue despite efforts toward diversification. This study investigates the impact of fiscal policy, economic diversification, and economic growth in Nigeria using annual time-series data from the Central Bank of Nigeria, National Bureau of Statistics, and World Bank covering 1984–2023. Employing descriptive statistics, the Augmented Dickey-Fuller and Phillips-Perron unit root tests, and the ARDL model, the study uses real GDP as the dependent variable and tax, government expenditure, domestic debt, gross fixed capital formation, and diversification index as independent variables. The results indicate that a 10% increase in tax, government expenditure, and diversification index leads to a 0.76%, 1.31%, and 0.84% rise in economic growth, respectively, while a 10% rise in domestic debt reduces growth by 2.69%. The findings show that tax, domestic debt, and diversification index significantly influence growth. Hence, the study recommends strengthening tax mobilization to reduce dependence on oil revenues and enhance macroeconomic stability.

INTRODUCTION

Nigeria, Africa's largest economy, is characterized by a heavy dependence on oil exports, which account for 95% of its export earnings. Despite possessing vast natural resources, the country continues to face challenges related to economic growth and diversification. The fiscal policy of Nigeria has historically been focused on short-term goals, primarily revenue generation, while long-term structural reforms have often been neglected. This overreliance on oil revenue has hindered the development of other sectors such as agriculture, manufacturing, and services,

which are essential for sustainable economic growth. Nigeria's fiscal policy, therefore, must undergo a significant shift to address the country's vulnerability to global oil price fluctuations and promote economic diversification (El Anshasy & Khalid, 2023; Rentschler, 2013; Vivoda, 2009).

In recent decades, Nigeria has witnessed varying economic growth trajectories, with oil price volatility contributing to periods of stagnation and recession. For instance, after the 1983 oil price shock, Nigeria's GDP growth rate plummeted to -3.8%, and the economy stagnated in subsequent years. In the 1990s, oil accounted for an overwhelming 96.2% of export earnings, exacerbating the vulnerability of the economy. Even though there have been several policy initiatives aimed at diversifying the economy, such as the Structural Adjustment Program (1986) and Vision 20:2020, the country remains heavily reliant on crude oil. The failure to diversify the economy has resulted in persistent poverty, inequality, and infrastructure deficiencies, limiting Nigeria's potential for long-term growth and development.

The role of fiscal policy in promoting economic diversification has long been a subject of debate. Scholars such as Keynes have emphasized the importance of fiscal policy in stimulating economic development, yet in the Nigerian context, fiscal policies have often been ineffective in fostering diversification (Ereke et al., 2024; Percy & Gloria, 2024). This failure is attributed to issues such as inefficiency in tax collection, poor governance, and the cyclical nature of government spending linked to oil revenue fluctuations. Moreover, Nigeria's fiscal policy has been pro-cyclical, amplifying the negative effects of oil price shocks and further undermining the diversification efforts. Despite various national development plans, the shift from oil dependency has proven elusive. This raises the question of how fiscal policy can be better aligned with the goal of achieving a more diversified and sustainable economy.

The primary issue under investigation in this study is the relationship between fiscal policy, economic diversification, and economic growth in Nigeria. While previous studies have explored this relationship, they often focus on short-term outcomes without considering the long-term structural changes needed for sustainable development. This research aims to address this gap by analyzing the long-term effects of fiscal policy on diversification and growth. Through the use of time-series data spanning several decades, this study will examine how key fiscal policy variables such as tax revenue, government expenditure, and domestic debt affect economic diversification and growth in Nigeria (Agu et al., 2015; Ogar et al., 2019).

To provide a comprehensive understanding of the issue, this study also draws upon existing literature on the role of fiscal policy in developing economies (Huidrom et al., 2018). Previous studies have suggested that fiscal policy plays a significant role in shaping the trajectory of economic diversification. However, the effectiveness of fiscal policy in this regard has been mixed, with some studies finding positive effects, while others argue that poor fiscal management and corruption undermine the potential of fiscal policy to drive sustainable diversification. For example, Adefeso and Mobalaji (2010) found that monetary policy had a stronger impact on diversification than fiscal policy in Nigeria, while Olawunmi & Ayinla (2007) highlighted the inefficiencies of fiscal policy in achieving sustainable diversification. These mixed results underscore the complexity of the issue and the need for more targeted and robust fiscal interventions.

In light of these findings, the study aims to explore specific solutions to improve the effectiveness of fiscal policy in promoting diversification and sustainable growth in Nigeria. By focusing on the long-run relationships between fiscal policy and economic outcomes, this research seeks to provide actionable recommendations for policymakers. In particular, the study will examine the impact of fiscal instruments

such as taxation, government spending, and public debt management on Nigeria's economic diversification efforts. Through this investigation, the study aims to contribute to the body of knowledge on fiscal policy and diversification, offering insights that can inform future economic planning in Nigeria.

The purpose of this study is twofold. First, it aims to investigate the long-run relationship between fiscal policy and economic diversification in Nigeria, with a particular focus on how fiscal policy can stimulate growth in non-oil sectors. Second, it seeks to provide a theoretical and empirical foundation for improving fiscal policy interventions in Nigeria. The novelty of this study lies in its application of the ARDL bounds testing approach to analyze the long-term dynamics between fiscal policy and economic diversification. This methodology allows for a more nuanced understanding of how fiscal policy variables interact with economic diversification in the Nigerian context. This study will provide a clear direction for future research on fiscal policy and diversification in Nigeria, contributing valuable insights into how fiscal policy can be harnessed to reduce oil dependency and promote sustainable economic growth. By addressing the challenges identified in the literature and offering practical recommendations, this research aims to advance the discourse on economic diversification and provide policymakers with the tools necessary to foster a more resilient and diversified economy.

Empirical Literature

The impact of fiscal policy on economic diversification has long been a subject of academic discussion, with early contributions from John Maynard Keynes. While some scholars argue that fiscal policy is a crucial tool for expanding and diversifying an economy, others present mixed findings regarding its role in transforming an economy. Adefeso and Mobalaji (2010) examined the relationship between fiscal-monetary policy and economic diversification in Nigeria. Their study, which utilized annual data from 1970 to 2007, employed Error Correction Mechanism (ECM) and co-integration techniques. Their results revealed that monetary policy had a stronger effect on economic diversification than fiscal policy. Based on this, they suggested that more emphasis should be placed on monetary policy for economic stabilization in Nigeria.

Olawunmi & Ayinla (2007) analyzed the contribution of fiscal policy to sustainable economic diversification in Nigeria using the Solow growth model, estimated through Ordinary Least Squares (OLS). Their findings indicated that fiscal policy had not been effective in promoting economic diversification in Nigeria. They attributed this ineffectiveness to factors such as wasteful government spending, poor policy implementation, and a lack of feedback mechanisms, all of which hindered fiscal policy's potential to foster diversification.

Ogbole et al. (2011) conducted a study on the impact of fiscal policy on economic growth and diversification in Nigeria from 1970 to 2006. They used time-series data from the Central Bank of Nigeria and performed a comparative analysis of the impact of fiscal policy during the regulation and deregulation periods. Their findings showed that the effectiveness of fiscal policy in stimulating economic diversification varied between these two periods. They recommended a more appropriate policy mix, prudent public spending, achievable fiscal policy targets, and the diversification of the nation's economic base as key strategies for improving fiscal policy effectiveness.

In a shorter period study, Adeoye (2006) analyzed the impact of fiscal policy on economic diversification in Nigeria between 1970 and 2002. The findings revealed that public investment negatively affected output growth, suggesting that public expenditure had a crowding-out effect on private investment. Amin (1999) similarly studied the relationship between public and private investment in Cameroon,

examining the crowding-in or crowding-out effects of public expenditures. His results showed that certain public investments, particularly in infrastructure and the social sector, had a positive impact on diversification and growth.

Chuku (2010) employed quarterly data to explore the interactions between monetary and fiscal policy in Nigeria from 1970 to 2008 using the Vector Auto-Regression (VAR) model. The results showed that fiscal policies in Nigeria often interacted counteractively during the 1980-1994 period, while no consistent pattern of interaction was observed in other periods. Chuku concluded that fiscal policy had a dominant influence over monetary policy in Nigeria during certain periods, which reinforced the need for stronger fiscal discipline.

Omitogun & Ayinla (2007) examined the contribution of fiscal policy to sustainable economic growth and diversification in Nigeria using the Solow growth model. Their findings suggested that fiscal policy was not effective in promoting diversification. They argued that the Nigerian government should reduce unproductive foreign borrowing, wasteful spending, and uncontrolled money supply, and instead focus on policies that promote increased and sustainable productivity across all sectors of the economy.

Kwakwa (2003) highlighted the pro-cyclical nature of Nigeria's fiscal policy, with government expenditures spiraling during oil price booms and contracting sharply when oil prices fell. This pro-cyclicality contributed to deficit bias in fiscal policy and undermined its effectiveness in promoting diversification. Kwakwa suggested that introducing a fiscal policy rule would help mitigate the volatility caused by oil price fluctuations. A fiscal rule would establish clear guidelines for government spending and taxation, ensuring fiscal discipline and reducing the vulnerability of Nigeria's economy to oil price shocks.

Ogbole (2010) studied the causal relationship between government expenditure and macroeconomic performance in Nigeria from 1970 to 2007. Using the Augmented Dickey-Fuller (ADF) test, co-integration analysis, and the Granger causality test, Ogbole found that government expenditure had a significant impact on GDP, inflation, private investment, and capital inflow. However, the study also noted that the lack of fiscal discipline remained a major challenge for the Nigerian economy.

Anyalechi et al. (2017) examined fiscal policy regulations as a tool for enhancing economic growth and poverty reduction in Nigeria, using data from 1981 to 2014. Their econometric analysis showed that tax revenue, external borrowings, government domestic debt, and government capital expenditure had little significant effect on economic growth and poverty reduction. However, government recurrent expenditure was found to have a statistically significant impact on GDP per capita during the study period.

Ezeoha & Uche (2010) revisited the interaction between monetary and fiscal policies in Nigeria using the ARDL model. Their study found a negative relationship between fiscal policy, monetary policy, and economic growth, suggesting that the failure of government fiscal policies, rather than monetary policies, had contributed to the ineffectiveness of past developmental programs. Despite fiscal policy's significant role in managing the economy, Nigeria's economic growth and development have remained unsatisfactory.

The failure of fiscal policy in Nigeria, particularly its pro-cyclical nature, has been a persistent problem, exacerbated by oil price fluctuations. As noted by Ogbole (2010), fiscal policy in Nigeria has lacked the necessary discipline to ensure sustainable economic growth and diversification. This study reinforces the argument that a more

disciplined approach to fiscal policy, along with improved governance and public spending, is essential for fostering economic diversification in Nigeria.

METHODS

This study investigates the long-run relationship between fiscal policy, economic diversification, and economic growth in Nigeria, utilizing secondary data spanning the period 1984 to 2023. The methodology applied combines both descriptive and econometric approaches, offering a robust framework for analyzing the key fiscal policy variables that influence economic diversification. This section outlines the research design, data collection, variables, and estimation techniques employed in the study.

Research Design

The research design adopted for this study integrates both descriptive and analytical methods to explore the complex interactions between fiscal policy and economic outcomes. Descriptive analysis was used to examine the trends and characteristics of key economic indicators, providing context for understanding the patterns in Nigeria's fiscal policy and diversification efforts over time. The analytical approach employed econometric models, specifically the Autoregressive Distributed Lag (ARDL) model, to assess the relationships between the variables of interest and identify any long-term and short-term effects of fiscal policy on economic diversification and growth.

In terms of the model's empirical structure, the ARDL methodology was chosen because of its flexibility in handling different types of data series—whether stationary at level I(0), first difference I(1), or a combination of both. The ARDL model is particularly suitable for examining both short-run and long-run relationships among variables and is robust to small sample sizes, making it ideal for this study.

The study builds on the neoclassical growth theory, which highlights the role of capital, labor, and technological progress in economic growth. The model incorporates fiscal policy variables (tax, government expenditure, and domestic debt) and economic diversification indicators to understand their impacts on Nigeria's economic growth trajectory.

Data Collection

The data used in this study were obtained from credible secondary sources, including the Central Bank of Nigeria (CBN) Statistical Bulletin, the National Bureau of Statistics (NBS), and the World Bank. These sources provided yearly time-series data for the period 1984 to 2023, which was used to capture the trends and behavior of key fiscal policy variables such as tax revenue, government expenditure, domestic debt, and investment in fixed capital. Additionally, the data included the gross fixed capital formation (GFCF) and diversification index, which served as proxies for economic diversification.

The selection of these variables was informed by the need to focus on the key factors that influence Nigeria's fiscal policy and its economic diversification efforts. Tax revenue, government expenditure, and domestic debt are directly linked to the government's ability to fund and manage its diversification strategies. Meanwhile, GFCF and the diversification index reflect the country's capacity to invest in productive sectors outside of oil.

Variable Specification

The dependent variable in this study is Nigeria's Real Gross Domestic Product (RGDP), which serves as a measure of economic growth. RGDP is the most widely

used indicator of economic performance, representing the total value of goods and services produced within the country in a given period, adjusted for inflation. It is chosen due to its comprehensive reflection of the nation's economic health.

The key independent variables include tax revenue (TAX), government expenditure (GEXP), domestic debt (DMD), gross fixed capital formation (GFCF), labor force (LF), and the diversification index (DIVX). Tax revenue (TAX) is a critical fiscal policy tool as it represents the government's ability to generate income to finance public expenditures. Government expenditure (GEXP) is another important fiscal variable, encompassing spending on infrastructure, education, healthcare, and other public goods that contribute to economic development. Domestic debt (DMD) measures the government's reliance on borrowing to finance its fiscal deficit, which can have both positive and negative effects on economic growth.

Gross fixed capital formation (GFCF) reflects investments in fixed assets such as machinery, buildings, and infrastructure, which are crucial for economic diversification. The labor force (LF) is included as a measure of the human capital available to drive economic growth through productive activities. Lastly, the diversification index (DIVX) is used to assess the extent to which Nigeria's economy has shifted away from its dependence on oil. A higher diversification index indicates greater diversification into non-oil sectors.

Econometric Estimation Techniques

To analyze the relationships between fiscal policy variables and economic growth, the study employs the Autoregressive Distributed Lag (ARDL) model. This method is particularly suitable for time-series data with variables that may exhibit mixed orders of integration (I(0) and I(1)), as it does not require all variables to be stationary at the same level. The ARDL approach also allows for the estimation of both short-run and long-run relationships, making it ideal for capturing the dynamic interactions between fiscal policy and economic outcomes over time.

The ARDL model was specified as follows:

$$Y_t=f(TAX, GEXP, DMD, GFCF, LF, DIVX)$$

Where:

Y_t represents real GDP, the dependent variable.

TAX, GEXP, DMD, GFCF, and LF are the independent fiscal policy and economic variables.

DIVXDIVXDIVX represents the diversification index, which captures the shift from oil dependency to economic diversification.

The ARDL methodology involves several steps, starting with unit root tests to confirm the stationarity of the variables. The Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test were used to examine the stationarity of the series. Following this, a bounds testing approach was employed to check for the presence of long-run relationships between the variables. If the F-statistic from the bounds test exceeds the upper critical bound, the null hypothesis of no long-run relationship is rejected, indicating that a stable long-term relationship exists among the variables.

In addition to the ARDL bounds test, the study also employs error correction modeling (ECM) to examine the short-run dynamics and speed of adjustment to long-run equilibrium. The ECM is particularly useful in determining how quickly any disequilibrium in the short run is corrected over time. The coefficient of the error correction term should be negative and statistically significant to confirm the presence of a stable long-run relationship.

Diagnostic Tests

To ensure the robustness of the model, several diagnostic tests were conducted. These tests assess the adequacy of the model and check for potential issues such as autocorrelation, heteroscedasticity, and model stability. The Breusch-Godfrey Serial Correlation LM test was applied to detect autocorrelation, while the Breusch-Pagan-Godfrey test was used to assess heteroscedasticity. Both tests are critical in ensuring that the error terms are uncorrelated and exhibit constant variance, which are key assumptions for valid econometric estimation.

Additionally, the study conducted a Cumulative Sum (CUSUM) test and a Cumulative Sum of Squares (CUSUMSQ) test to examine the stability of the model's parameters over time. These tests are used to confirm whether the coefficients remain stable throughout the sample period. If the plots of the CUSUM and CUSUMSQ statistics fall within the critical bounds, it indicates that the model is stable.

RESULTS AND DISCUSSION

This section presents the empirical results from the analysis of the impact of fiscal policy on economic diversification and economic growth in Nigeria. The study employed the Autoregressive Distributed Lag (ARDL) model to examine both the short-run and long-run relationships among fiscal policy variables, economic diversification, and economic growth. The analysis covers the period from 1984 to 2023, and the results presented in this section provide critical insights into how fiscal policy has influenced Nigeria's economic outcomes over time.

Descriptive Statistics

The first step in the analysis involved computing descriptive statistics for the key variables of interest, which include Real GDP (Y), Tax Revenue (TAX), Government Expenditure (GEXP), Domestic Debt (DMD), Gross Fixed Capital Formation (GFCF), Labor Force (LF), and the Diversification Index (DIVX). These statistics, presented in Table 4.1, provide an overview of the central tendency, variability, and distribution characteristics of the data.

Table 1. Descriptive statistics result

	Y	DMD	TAX	GEXP	GFCF	LF	DIVX
Mean	0.641	2682.571	5.11	399.69	4.01	39647683	5502.743
Median	0.692	957.610	2.60	315.20	3.52	38460722	1073.890
Maximum	0.820	12594.89	1.93	1152.80	2.14	60698492	24889.61
Minimum	0.270	22.220	-270	4.10	7.99	23651428	17.690
Std. Dev	0.145	3685.974	5.78	364.20	6.51	10811298	7753.96
Skewness	-0.998	1.462	1.09	0.50	1.46	0.316705	1.253
Kurtosis	3.085	3.855	2.95	1.97	3.67	1.97	3.165
Jarque-Bera	5.989	13.930	7.182	3.09	13.56	2.178	9.474
Probability	0.050	0.001	0.027	0.21	0.00	0.336	0.008
Sum	23.080	96572.55	1.84	14388.97	1.45	1.43	198098.7
Sum Sq.Dev.	0.744	4.76	1.17	4642532.	1.49	4.09	2.10
Observations	40	40	40	40	40	40	40

The descriptive statistics reveal that while there has been growth in certain economic areas (such as GDP and government expenditure), the economy remains highly reliant on oil, with low levels of diversification as indicated by the skewness of the diversification index.

Unit Root Test

The unit root test was conducted with the aim of establishing the stationarity conditions of the variables. The test was based on the Augmented Dickey-Fuller

(ADF) test as well as the Phillips-Perron test. The result of the stationary test below (table 4.2) shows that all the variables except diversity index (DIVX), labor force (LF) and growth output (Y) were non-stationary at first difference as they did not exhibit trend stationarity i.e. I(0). This is because both their ADF and PP statistical values are less than the critical table values at either 1 or 5 per cent level of significance. Thus we could not accept the alternative hypothesis of stationarity, implying that the tests strongly support the hypothesis that all the variables are non-stationary, and that they are particularly of a random walk. Stationarity was achieved after the first differencing of the series. A non-stationary series manifests a random walk and therefore any dynamic specification of the model in the levels of the series would be inappropriate and may lead to nonsensical or spurious regression and wrong inferences.

With first differencing of the series using the ADF, all the variables attained stationarity. The PP test also produced similar results. In all, stationarity was achieved for all variables at first difference. The existence of stationarity of the variables at first difference or the same order then provides a justification for co-integration test using the autoregressive distributed lag (ARDL) model variant of ordinary least squares regression technique.

Table 2. Unit root test result using Augmented Dickey-Fuller (ADF) and Phillips-Perron tests

Variables	ADF			Phillips-Perron		
	Level	1st Difference	Order of Integration	Level	1st Difference	Order of Integration
Y	-3.962863	-	I(0)	-3.962863	-	I(0)
TAX	-1.853973	-4.459253	I(1)	-1.315266	-5.862989	I(1)
GEXP	-1.809441	-7.379776	I(1)	-1.898378	-7.227267	I(1)
DMD	2.073422	-4.748670	I(1)	-	-4.773639	I(1)
DIVX	-8.107011	-	I(0)	-9.215822	-	I(0)
GFCF	0.506705	-5.725037	I(1)	0.852770	-5.739721	I(1)
LF	10.77889	-	I(0)	9.719026	-	I(0)

Granger causality test

The granger causality test was done so as to determine the causal relationship and the nature of causality between macroeconomic policies and economic diversification. The result obtained as presented in table 4.3 shows that there is unidirectional causality between fiscal policy and economic diversification. Thus, the null hypothesis that fiscal policy (TAX, GEXP, OPEN and LF) do not granger cause diversification was rejected while the alternative hypothesis that growth and diversification does not granger fiscal policy was accepted. This implies that fiscal policy granger cause economic diversification and growth in Nigeria.

Co-integration Test

The next phase of the analysis involved testing for long-run relationships among the variables using the ARDL bounds testing approach. The results of the co-integration test, presented in Table 5.9, show that the F-statistic value of 3.98 exceeds the upper critical bound of 3.67 at the 5% significance level. This indicates that a long-run co-integrating relationship exists among the variables in the model.

The presence of co-integration suggests that there is a stable long-term relationship between fiscal policy variables (tax revenue, government expenditure, and domestic debt) and economic growth and diversification. This finding aligns with the literature, which emphasizes the importance of fiscal policy in promoting long-term economic stability and growth (Adefeso and Mobalaji, 2010; Olawunmi and Ayinla, 2007). The

next step in the analysis was to estimate the long-run coefficients using the ARDL model.

Table 3. ARDL Bounds Test for Co-integration

Test Statistic	Value	K
F-statistic	3.981482	3
Critical Value Bounds	I0 Bound	I1 Bound
Significance level		
10%	2.37	3.20
5%	2.79	3.67

Long-Run ARDL Estimates

The empirical finding of the fiscal policy model as an estimation of the ARDL estimation procedures as shown in Table 4.4 reveals that tax has a positive relationship with growth as it has a coefficient of 0.076. An increase of tax by one per cent would correspond to long run diversification increment of 0.076 per cent in absolute terms. This result is contrary to the a priori expectation. However, the variable is statistically significant with a p-value of 0.022 as the p-value of the variable is below the 0.05 level.

Government expenditure (GEXP) has a positive correlation with economic growth, and the coefficient is 0.131, indicating that it has a positive effect on the latter in the long run. A 1 cent increase in GEXP will promote a 0.131 per cent growth in the Nigerian economic growth, other things being equal. This finding is in line with the a priori expectations. The variable is however not significant at five-per-cent level since its p-value of 0.251 is greater than 0.05.

The analysis also indicates that the economic growth is inversely related to the domestic debt (DMD). The DMD coefficient is -0.268 meaning that, a one-percent change in DMD is linked to the change in growth by a 0.208 per cent. This is in line with a priori expectancy. Its p-value is 0.04 which is less than 0.05 making DMD statistically significant.

The value of the coefficient of economic diversification (DIVX) measures 0.0839, which shows that there is a positive correlation between DIVX and the Nigerian economic growth. This is a priori consistent also since increase in DIVX by one percent causes an increase in diversification by 0.0839 percent. The p-value of 0.000 shows that the FDI plays a major role in explaining the difference in diversification because its p-value is less than 0.005.

Short-Run ARDL Estimates

In the short run, the ARDL model provides insights into the dynamic adjustments of fiscal policy variables to changes in economic growth and diversification. The error correction model (ECM) coefficient of -0.617 indicates that approximately 62% of the disequilibrium in fiscal policy variables is corrected each year, suggesting a relatively quick adjustment to long-run equilibrium.

The short-run results, presented in Table 5, show the following key findings:

Table 4. ARDL Long-run Estimation

Variable	Coefficient	Std. Error	T-statistic	Prob.
LOG(TAX)	0.075786	0.078870	6.592947	0.0222
LOG(GEXP)	0.130858	0.109494	1.195114	0.2506
LOG(DMD)	-0.268942	0.128500	-2.092923	0.0438
DIVX	0.083860	0.010937	7.667824	0.0000

C	33.77336	25.70823	1.313718	0.2087

Table 4.5 shows the parsimonious error-correction outcomes of the fiscal sector model in terms of Autoregressive Distributed Lag (ARDL) approach. The short-run dynamics showed that the error-correction variable has got its expected negative coefficient and it is also significant, which is in line with theory. It has a coefficient of -0.617 indicating that the 62-percent of the systemic disequilibrium in fiscal policy variables is adjusted every year, thus showing that a very fast process of adjustment of a short run disequilibrium to a long run equilibrium; the p-value is 0.011, which is lower than the traditional 0.05.

The coefficient of determination (R 2) = 0.79 and the adjusted R 2 =0.66 which suggests that the model is a good fit to the data. In particular, variations in the independent variables (domestic demand, gross fixed capital formation, and labour force) account about 66 per cent of the total variation in the dependent variable (Y). The model estimated, therefore, is exhibited to be of strong explanatory strength. The Durbin and Watson value is equal to 2.162, which is close to 2, hence meaning that the residual values are not correlated essentially. In line with this, it has no signs of serial correlation and the model is well-specified and well-behaved.

As the short-run coefficients have been analyzed, the first, second, and third lags of economic growth (Y) have a positive impact on the current level of diversification in accordance with the theoretical apriori expectations. A one-per-cent increase in each of these lags causes a rise in current Y by 0.76 per cent, 0.60 per cent and 0.407 per cent ceteris paribus. All these effects are statistically significant at 5% level of significance with p of 0.0101, 0.0104 and 0.0191.

Tax has a positive albeit statistically insignificant correlation with Y, which is the opposite of the apriori expectations. Its coefficient of 0.038 would have an effect of increasing Y by 0.038 per cent increase in tax, but the p-value is calculated as 0.786 which makes it non-significant at 5 per cent level. On the other hand, coefficients of the first and second lags of tax are -0.065 and -0.692 respectively, which are in line with apriori theory. An increase in the first lag of tax by one cent lowers the Y by 0.065 cent in the present period, and the second lag lowers Y by 0.692 cent, the p-value of the first lag (0.649) is insignificant, but the p-value of the second lag (0.0002) is very significant at the 5 per cent level.

The government expenditure (GEXP) and the first, second, and third lag of the same are related positively to the diversification as expected apriori. The coefficients, 0.070, 0.159, 0.040 and 0.272 of GEXP and the successive lags of the latter are this: an increase in the values, by one per cent, of each of the variables, will raise Y by correspondingly 0.070, 0.159, 0.040, and 0.272 per cent. The p-values of GEXP, its first and third lag are 0.036, 0.043, and 0.001, and the results are statistically significant at the 5 per cent level, but the p-value of the second lag (0.571) is not significant. The Gross fixed capital formation (GFCF) is positively associated with the economic growth as theoretically expected. When GFCF increases by one per cent, the level of diversification increases by 0.045 percent and the corresponding p-value is 0.009 which is statistically significant at the 5 per cent level.

Lastly, labour force (LF) exhibits a negative correlation to the growth of the dependent variable and its coefficient is -2.662. As a matter of fact, an increment of one-per-cent on LF is linked to a negative change of 2.662% on economic growth, which is opposite of the expectation. However, the p-value of 0.0003 is an affirmation that this is a statistically significant relationship at the 5 95 percent level.

Table 5. Error Correction Result of the Fiscal Sector Equation

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**

D(Y(-1))	0.755303	0.256686	2.942515	0.0101
D(Y(-2))	0.602927	0.205854	2.928903	0.0104
D(Y(-3))	0.406767	0.154920	2.625649	0.0191
DLOG(TAX)	0.038134	0.138086	0.276164	0.7862
DLOG(TAX(-1))	-0.065290	0.140483	-0.464757	0.6488
DLOG(TAX(-2))	-0.692285	0.137996	-5.016714	0.0002
DLOG(GEXP)	0.070194	0.075044	0.935374	0.0364
DLOG(GEXP(-1))	0.158892	0.071886	2.210333	0.0430
DLOG(GEXP(-2))	0.040597	0.070213	0.578192	0.5717
DLOG(GEXP(-3))	0.272945	0.067072	4.069456	0.0010
LOG(GFCF)	0.044692	0.014987	2.982056	0.0093
LOG(LF)	-2.662637	0.573263	-4.644708	0.0003
CointEq(-1)	-0.616667	0.066179	-9.318214	0.0113

Diagnostic Test for Fiscal Policy Equation

Heteroscedasticity Test, LM Test and Q Test

To ascertain the adequacy of the estimated equation, several diagnostic tests were conducted. Normality tests such as the Breusch-Godfrey serial correlation Lagrange Multiplier (LM) test, and the Q-statistics were employed to check the existence of the normality or adequacy of the estimated model.

The results of the tests are summarized in Table 6. The Breusch-Godfrey serial LM test statistic of 0.426013 with its probability value of 0.4342 showed that there is no problem of autocorrelation in the model. This is confirmed by the fact that the Chi-square probability value of 0.7315 is higher than the 5 per cent significance level. This indicates that the residuals terms are independent and hence there is no autocorrelation in the estimated equation.

The Breusch-Pagan-Godfrey heteroskedasticity test statistic 0.723564 with its probability value of 0.7362 showed that the residuals have constant variance and hence there is no problem of heteroskedasticity in the model. This is confirmed by the fact that the probability value of the observed Chi-squared is 0.6032 which is greater than the 5 per cent significance level.

Similarly, the Q-statistics as shown in table 7 showed that the series is white noise, and hence there is no auto-correlation among the residual terms in the model as the probability values are all higher than 5 per cent significance level. This also means that the value of the residual in one particular period was independent or unrelated to the value of the residual terms in another period. That also implied that the co-variations between the residuals was zero. The conclusion from the various test conducted showed that the estimated equation is adequate and well-behaved

Table 6. Diagnostic test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.426013	Prob. F (2,13)	0.4342
Obs. R-squared	0.196286	Prob. Chi-Square(2)	0.7315
Breusch-Pagan-Godfrey Heteroskedasticity Test			
F-statistic	0.723564	Prob. F(16,15)	0.7362
Obs. R-squared	13.93928	Prob. Chi-Square(16)	0.6032

Table 7. Q-Statistic Test for Fiscal Equation

AC	**PAC**	**Q-Stat**	**Prob**
1	-0.114	-0.114	0.4593
2	-0.373	-0.391	0.5107

3	-0.057	-0.193	0.6336
4	0.185	-0.010	0.9696
5	0.158	0.129	0.9817
6	-0.099	0.034	0.3920
7	-0.337	-0.272	0.8335
8	-0.027	-0.221	0.7369
9	0.359	0.090	0.5482
10	-0.189	-0.287	0.7243
11	-0.223	-0.176	0.2815
12	-0.015	-0.196	0.1828
13	0.360	0.211	0.3261
14	0.013	-0.067	0.4272
15	-0.129	0.046	0.2330
16	-0.137	-0.053	0.4607

Stability Test for Fiscal Policy Equation

The Cumulative Sum (CUMSUM) and Cumulative Sum of Squares (CUMSUMSQ) tests were applied so as to examine the stability of the parameter after the ECM models were estimated. Figures 1 and 2 show that both the CUMSUM and CUMSUMSQ statistics fall within the critical bounds of ± five per cent level of significance. This plots indicate that the coefficients of the results being estimated are stable in the long run and that there exists a long-run relationship between fiscal policies and economic growth in Nigeria. This therefore implies that the coefficients are changing gradually.

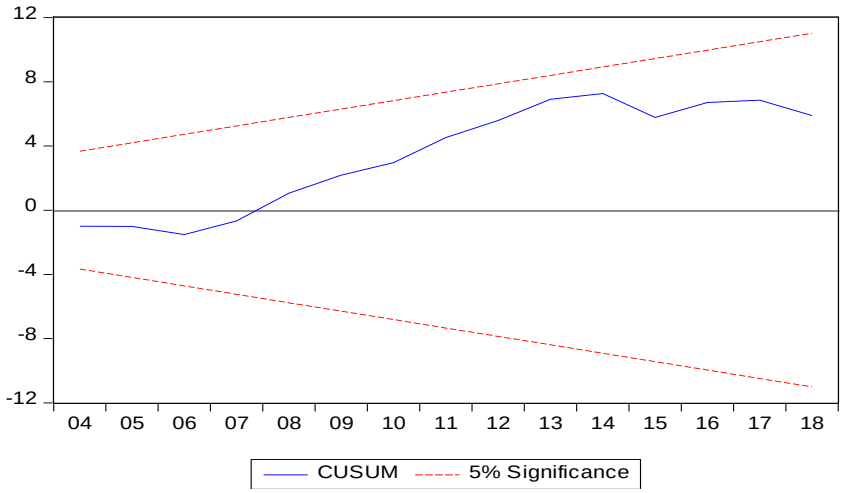

Figure 1. CUSUM for Fiscal Policy Equation

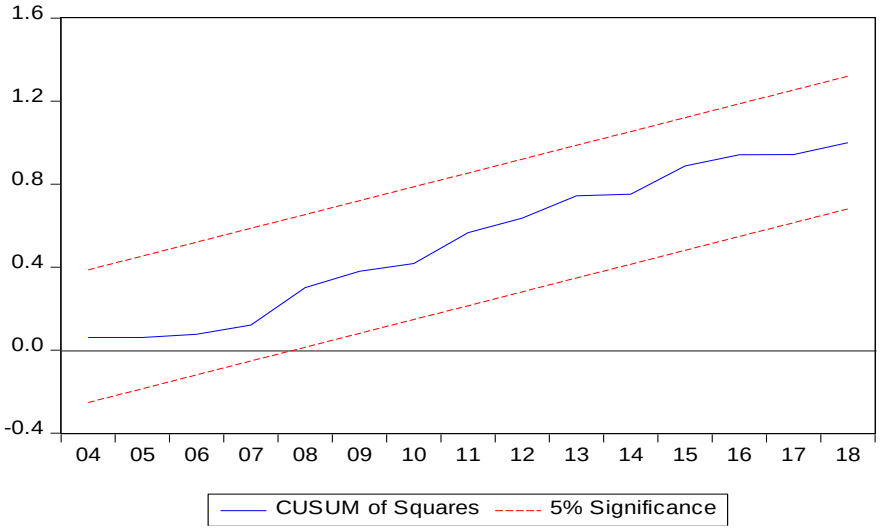

Figure 2. CUSUMSQ for Fiscal Policy Equation

Discussion

The empirical long-run study of the fiscal policies indicates that the effect of domestic debt has a very negative impact. Such results are in agreement with previous literature that supports most debt and borrowing theories, which claim that external and public debts have similar implication of economic diversification and expansion. Thus, the correlation proves that the higher the presence of domestic debt, the worse the economic diversification in Nigeria, which is consistent with the findings of the research carried out by Umaru et al. (2013). The findings of the authors show that, despite the positive effect of the domestic debt on the aggregate government revenue, the adverse effect of negative domestic debt eventually affects the economy negatively.

Evidence showed by fiscal policy also reveals that taxation influencing diversification with a positive and significant effect during the period of study is in line with the macroeconomic policy outcomes. Growth in tax revenue, hence, brings about a positive effect on diversification. The latter point is supported by the fact that the study by Okwara & Amori (2017) found that even with the leakages, tax revenue is one of the largest sources of economic diversification and growth. The paper also correlates with the analysis of Kalu (2015) that affirmed that trade policy, as the substantive determinant of industrial production, is through trade openness, real exports, and tax consideration, in Nigeria.

Conversely, the fiscal policy analysis has indicated that government spending has a positive and not statistically meaningful impact on diversification but the combination of both macroeconomic long-run outcomes shows a positive and significant impact. This means that government expenditure has a positive and significant and improved diversification during the period of study. An increase in the amount of spending by the people on the basic infrastructure like electricity, transport, communication, education and health will reduce the cost of production in the industrial sector, hence, diversification. These findings correspond to the results of Eze & Ogiji (2013), who found that government spending has a significant impact on the output of manufacturing, which was indicated by the magnitude of coefficients and their statistical significance.

CONCLUSION

The research impetus was to employ empirical research in the exploration of the influence of the fiscal policy, economic growth on economic diversification in Nigeria.

Specifically, the paper has examined how fiscal, economic growth affects economic diversification in Nigeria. In an attempt to meet the above goal, bound testing procedure-based empirical methods were embraced in the context of autoregressive distributed lag (ARDL) modelling. The specified equation was approximated with the help of ARDL estimation technique and the given summary of the results is as follows. The approximate outcome of the fiscal policy indicates that the impact of domestic debt on diversification is negative and insignificant but its first lag on the diversification is positive and significant. The outcome also shows that tax positively and insignificantly affects diversification in the long-run. It was also found that the government expenditure positively influenced the diversification but the effect was not significant.

Recommendations

In the fiscal policy front, the good role of tax in economic diversification will call on more strengthening of tax system in Nigeria with the aim of ensuring accountability, transparency in the part of government in the management of revenue derived through taxation towards provision of public goods and services as this will form the enabling environment that will result in the swift economic diversification and transformation. Also, as a component of the overall economic diversification programme, tax revenue mobilization must be employed as a policy tool to reduce over dependence on oil revenues to non-oil revenues that are less prone to fluctuations and are therefore vital to macroeconomic stability in the country.

The good effect of government spending demonstrates that government must make sure that the capital expenditure will be controlled so that it can further pursue its goal of diversifying the productive and export base of the economy in a way that will increase the production capacity of the country. The government needs to reduce community and social services and transfers. Rather, the government ought to channel its spending on infrastructure, investment and productive endeavors towards the facilitating environment that will bring about diversification of the economy. Government spending in the same vein is supposed to be directed in the development of non-oil sectors of the Nigerian economy.

The adverse effect of domestic debt means that the Nigerian Government must minimise the domestic debts drastically since our results have revealed that the public debt does not contribute to the cause of economic diversification and growth. The government is advised to seek alternative methods of finance such as Public-Private Partnership (PPP) and also promote foreign direct investment. This will ease the burden and dependence on the government debt funding and will be a boost to the local and foreign private sectors to join in economic activities that will result in the diversification, growth and development of the Nigerian economy.

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