



**EFFECT OF MACROECONOMIC VARIABLES ON ECONOMIC GROWTH IN
NIGERIA: 1990-2024**

***Madaki, L. J.**

Principal Commercial Officer Nigerian Airspace Management Agency (NAMA) Yakubu Gowon Airport, Jos
–Plateau State

*Corresponding Author's Email: lukjamad@yahoo.com

GSM: +2348036818237

ABSTRACT

The study investigated the effect of macroeconomic variables on economic growth in Nigeria covering 1990-2024. Expost-facto research design was adopted for the study. To achieve this, the researcher employed secondary data on included variables to carry out the analysis. The data were collected from the Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS). Auto regression Distribution lag (ARDL) model adopted with modification for the study. The data were subjected to diagnostic test which include Unit root test and Cointegration test before estimating the model. The findings of the study showed that the coefficient of Foreign Exchange Rate (FER) was statistically significant at 5% level, while Interest Rate (IR), Inflation Rate (INF) and Foreign Direct Investment (FDI) were no statistically significant at 5% level. It was concluded from the result analysis that Foreign Exchange Rate (FER) has positive and strong influence on economic growth, Interest Rate (IR) and Inflation Rate (INF) has a positive and weak influence on economic growth, while Foreign Direct Investment (FDI) has a negative and weak influence on economic growth in Nigeria during the period under review. The study recommended that Nigeria government and other policy maker/ key players should ensure to have sound macroeconomic policies that would formulates good policies towards growth. And that the environment should be conducive for domestic investors and companies towards indigenous productivity which will facilitate export economy and discourages import economy. This, by implication, would contribute immensely to economic growth in Nigeria.

Key words: Cointegration, Economic, Growth, Policies and Variable

INTRODUCTION

It is a known fact that macroeconomic variables play a significant role in determining the overall workings of any economy when the sound economic policies are used. Nigeria overall economic performance since independence in 1960 has been decidedly unimpressive. Despite the availability and expenditure colossal amount of foreign exchange derive mainly from its oil and gas resources, economic growth has been weak and the incidences of poverty has increased. The objective of every sovereign nation like Nigeria is to improve the standard of living of its citizenry and promote economic growth and development. Due to vicious circle of poverty, the scarcity of resources and the law of comparative advantage, countries depend on each other to foster economic growth and achieve sustainable economic development (Ismail and Imoughele, 2015).

Ullah (2020) noted that macroeconomic variables being the acid test that reflects the health of an economy, is key to determining the behavior of any sector. Economic growth is a fundamental requisite to economic development. This informs why in Nigeria growth continuously dominates the main policy thrust of government's development objectives. Essentially, economic growth is associated with policies aimed at transforming and restructuring the real economic sectors. Nevertheless, the lack of sufficient domestic resources, Savings and investment to support and sustained the sectors is a major impediment to economic development in the country because of the gap between savings and investment (Imimole and Imoughele, 2012). Savings provides developing countries (including Nigeria) with the much needed capital for investment which improved economic growth. Increase in



savings leads to increase in capital formation and production activities that will lead to employment creation and reduce external borrowing of government. Low domestic saving rates may maintain low-growth levels because Harrod Domar model suggested that savings is an important factor for economic growth.

The ineffective macroeconomic policy in Nigeria even after the independence in 1960, brought about the immediate challenge that faced the Nigerian economy on how to increase robust economic growth in order to reduce extreme poverty, improve health care, overcome illiteracy, strengthen democratic and political stability, improve the quality of the natural environment, diminish the incidence of crime and violence, and become an investment end of choice for international capital, *ceteris paribus*. Long-term broad-based economic growth is essential for Nigeria to increase incomes and enable her to reach her potential of becoming a significant trade and investment partner in the world. While rapid growths in China, Malaysia and India for instance, have lifted millions beyond subsistence living, Nigeria and many other African countries have, however, experienced the opposite by recording low growth rates and development (Ismail and Imoughele, 2015).

Yaqub (2011) asserted that, the growth of Nigeria economy is sluggish compared to the emerging economy in the world. Acknowledged the slow in economic growth and development, the Nigerian government and policy makers have embarked on various macroeconomic policies to address these issues. Some of the policies involved the use of monetary and fiscal policy, export promotion strategy, imports substitution strategy, NEEDS, Vision 20 20 20, the austerity measure, etc. The fundamental objectives of the policies include price stability, maintenance of balance of payments equilibrium, and promotion of employment, output growth and sustainable development. These objectives are necessary for the attainment of internal and external balance of value of money and promotion of long run economic growth.

Economists differ on which policies are most beneficial for long-run growth. For example, De Long and Summers (1992) argues that sound macroeconomic policies towards macroeconomic variables are necessary for long-term growth. However, Anderson and Jodon (1962) postulated that monetary policy has greater and faster impact on economic activity thus suggesting that greater reliance be placed on monetary measures than fiscal measure in the conduct of stabilization policy. Uniamikogbo and Enoma (2001) asserted that monetary variable is more effective and dependable than fiscal variable in affecting changes in macroeconomic variables (economic activities). Other scholars argue that the growth of human capital, that is, investment in education and training contributes significantly to long-run growth (Barro, 1990).

Kolawole (2013) asserted that Macroeconomic stability is fundamental basis of sustainable economic growth, because, it increases national saving and private investment and also improves exports and balance of payments with improving competitiveness. A macroeconomic stability on macroeconomic variables, therefore, to a large extent guarantees economic wellbeing of the people. To this end, there are several factors identified as potential determinant of macroeconomic stability such as low inflation, low deficit, stability of real exchange rate and exchange relationship. These aforesaid factors are serious drivers of economic growth. He empirically examined the growth-effects of macroeconomic stability factors in Nigeria.

Antwi (2013) opined that macroeconomic theory has identified different factors that can affect the growth of a given nation from the neoclassical, Keynesian and the new growth theories. These variables therefore comprise of interest rate, foreign direct investment, GDP per capita, investment, natural resources, human capital, innovation, technology, economic policies, governmental factors, foreign aid, trade openness, institutional framework, political



factors, geography, socio-cultural factors, demography etc. Market capitulation and all share price index are also macroeconomic variables (Ezenwa, 2016).

Nigeria as a nation with an emerging market, mixed economy and majorly middle-income, with increasing industrialized, fiscal, service, communications, technology and entertainment sectors is ranked as the 27th-largest economy in the world in terms of nominal GDP, and the 22nd largest in terms of purchasing power parity. As the largest economy in Africa, it produces a large proportion of goods and services in the West African subcontinent (Manufacturing Sector Report, 2015). As at the end of the first quarter of 2019, Nigeria's population is put at 188.7 million with a Gross Domestic Product of \$1.1 trillion at 0.8% growth, unemployment rate of 7.0% and Inflation rate of Consumer Price Index (CPI) was estimated as 16.5%. The nation's economy is described by the Gross Domestic Product in this work, and some of the factors that can affect the economy are interest rate, exchange rate, inflation rate and Foreign Direct Investment. These macroeconomic variables were selected to examine their quantitative impact on the economic growth of Nigeria within the period 1990-2024. The main objective of this paper investigated the impact of macroeconomic variables on economic growth in Nigeria. Specifically, the study sought to:

- i. assess the effect of interest rate on Economic Growth in Nigeria
- ii. examine the effect of inflation on Economic Growth in Nigeria
- iii. examine the effect of exchange rate on Economic Growth in Nigeria
- iv. ascertain the effect of foreign direct investment on Economic Growth in Nigeria

Conceptual Framework

Macroeconomic variables

Wikipedia (2017) opines that macroeconomic variables (MVs) are indicators of the overall state of a country's economy. In the United States, they include such indices as average prime rate, Consumer price Index, Dow Jones Average and inflation rate. The government usually studies MVs and tries to keep them at certain levels so that the economy can function effectively. International Monetary Fund (IMF) (2016) posits that macroeconomic variables look at the economy from the widest perspective and hence, studies general trends in order to assess the relative health of a given country's economy. Macroeconomics is relevant in governing a country due to the fact that it is the responsibility of the government to keep economy stable so the activities at micro level can take place properly. Governments essentially control macroeconomic variables through issuing of money and determining fiscal policies. The U.S. Federal Reserve for example has been running Comprehensive Capital Analysis and Review (CCAR) yearly since 2009. CCAR is essentially a stress test for the U.S. banking system.

In Nigeria Central Bank of Nigeria (CBN) from time to time conducts stress test in the banking system in order to determine the soundness of banks. A macro stress-testing deal with testing of the financial system as a whole and it is the instrument the Central Bank and supervisory authorities use to assess the impact of market wide scenarios and possible second round effects. Such test with regard to liquidity risk usually enhances the insight in the systemic dimensions of liquidity risk. These exercises can also contribute to market participants of systemic risks. Systemic risks are risks that cannot be diversified away e.g meltdown, government policy etc. Among the macroeconomic variables that the Federal Reserve adopted to develop the stress scenario for the banks in 2011 were real GDP, the Consumer Price Index, real disposable personal income, 3-month Treasury bill rate, unemployment rate, National Price Index and Dow Jones Index (Wikipedia 2017).

Macroeconomic policy

Macroeconomic policy refers to those policies of Government aimed at the aggregate economy, usually to promote the macro goals of full employment, stability, and growth.



Common macroeconomic policies are fiscal and monetary. Fiscal policy is the macroeconomic policy where the government makes changes in government spending or tax to stimulate economic growth while monetary policy deals with changes in money supply or changes with the parameters that affects the supply of money in the economy. The objectives of this policy include the achievement of sustainable economic growth and development, stable price and full employment. Some of the objectives set are potentially in conflict with each other, which means that, in attempting to achieve one objective, another one is 'sacrificed'. For example, in attempting to achieve full employment in the short-term price inflation may occur in the longer term.

Ullah and Rauf (2013) asserted that a sound macroeconomic policy has to do largely with the consistent management of short-term policy instruments pursuing a sustainable and predictable pace for aggregate economic variables and major prices (wages, inflation, interest rates and exchange rates). They established further that monetary, fiscal and exchange rate policies, together with structural reform, have major consequences for the social wellbeing of societies, not only in terms of protection against shocks and crises but also in terms of equity. Many, if not all, of the necessary social policies are of a domestic nature. Pursuing them, however, depends to a considerable extent on the international enabling environment in which the global financial system, the unsettled debt crisis and increasing official development assistance (ODA) flows play a significant role.

Economic Growth

Lewis (1915-1991) says that economic growth means the growth of output per head of population. Lewis (1983) since the main aim of economic growth is to raise the standards of living of the people, therefore the second way of defining economic growth which runs in terms of per capita income or output is better. Another point which is worth mentioning in regard to the definition of economic growth is that the increase in national income or more correctly increase in per capita income or output, must be a "sustained increase" it is to be called economic growth. By sustained increase in per capita income we mean the upward or rising trend in per capita income over a long period of time. A mere short-period rise in per capita income, such as that occurs over a business cycle, cannot be validly called economic growth (Lewis, 2013).

Economic growth is defined by Amadeo (2019) as increase in the production of goods and services over a specific period. To be most accurate, the measurement must remove the effects of inflation. Economic growth creates more profit for businesses. As a result, stock prices rise. That gives company's capital to invest and hire more employees. As more jobs are created, incomes rise. Consumers have more money to buy additional products and services. Purchases drive higher economic growth. For this reason, all countries want positive economic growth. This makes economic growth the most watched economic indicator. Gross domestic production (GDP) is the best way to measure economic growth. It takes income account the country's entire economic output. It includes all goods and services produced by individuals, businesses, and governments in the country for sale. It doesn't matter whether they are sold domestically or overseas.

Theoretical Framework

For a proper conceptualization on the study, this paper has reviewed two theories in order to establish the effect of macroeconomic variables on economic growth in Nigeria using time series data during the period 1990-2024.

Endogenous Theory of Economic Growth

Endogenous growth theory is ascribed to works of Romer, (1990). It is an economic theory which postulates that economic growth is generated from a closed system as a result of internal processes. More importantly, the theory stressed that the enhancement of a Nation's human capital facilitates economic growth by away of the development of new forms



of technology and efficient and effective means of production. The advocates of Endogenous economic growth theory believe that improvements in productivity are rooted directly on faster innovation and more investments in human capital. According to these economists, government and the private sector institutions should nurture innovation initiatives and offer incentives for individuals and businesses to be more creative, in the area of research and development (R & D) funding and intellectual property rights (Liberto, 2019).

The theory has been criticized on the ground that, technical progress is not only the determinant factor of quality product but also market conditions. It also fails to recognize the potential effect of external factors and competitors. More so, the assumption of fixed labour is not realistic.

The Keynesian Theory

Keynesian theory has its root in the thoughts of a popular British Economist called John Maynard Keynes whose 1936 work on General theory of employment, interest and money marked a turning point in the history of macroeconomic thought. Essentially, it came into existence at the time policy makers and economists were concerned about inability of classical market forces to restore full employment equilibrium years after the First World War. Keynes had a different view about the working of interest rate in an economy. Instead of classical conception of interest rate as price of credit, he viewed it as payment for the use of money. He also did not agree with the classical consideration of saving (supply) and investment (demand) as independent factors that combine to determine interest rate. To him saving is determined by the level of income while income (output) depends on investment. In the Keynesian analysis, although interest rate is determined by supply and demand for money, supply is exogenous while demand is said to be endogenously determined in the market place. But there is a qualification to the nature of demand which determines interest. His theory came under attack in the 1970s on the ground that, the theory promoted deficit spending, stifling private investment and causing inflation. Nevertheless, the theory saw resurgence in the 2000s and is still debated today.

Empirical Review

Over the last few decades, the macroeconomic variables and economic growth relationship became the hot issue amongst the government, policy makers and researchers. There is a growing literature on the impact of macroeconomic variables on economic growth in cross countries and country specific with varied submission and conclusion. The following can be seen:

Antwi (2013) studied the impact of macroeconomic factors on economic growth in Ghana A Co-integration Analysis used physical capital, labour force, Foreign Direct Investment and Foreign Aid as macro-economic factors that would drive Ghana's real per capita GDP using data covering the period of 1980 to 2010. A quantitative approach was adopted using the models Augmented Dickey Fuller (ADF) test and Johansen approach to co-integration which is viewed as more appropriate and efficient for the determination of number of co-integrating vectors without relying on arbitrary normalization. Johansen Approach to co-integration model is an essentially a multiple regression model. The findings established that there was co-integration relationship between real GDP per capita (economic growth) and its macroeconomic factors.

Bawumia (2010) examined the impact of macroeconomic variables on economic growth, in China using the DID method, the system GMM to analysis on data sourced from the year 2003 to 2016. The study noted that macroeconomic variables negatively impacts economic growth both in the long run and the short run. The study also noted that a unidirectional causal relationship exists between some macroeconomic variables and economic growth, on the one hand, and non- causal relationship exists between some of the macroeconomic variables during the period under review. The study concluded that

macroeconomic variables are significant in determining economic growth when appropriate measures implemented.

Dimas (2022) employed an input-output model to quantify intangibles trade and innovations, to access the impact of changes in the macroeconomic variables on economic growth using secondary data covering 32 years. The macroeconomic variables employed were Foreign Direct Investment, Inflation, Exchange Rate, and Balance of Payment as the independent variables while economic growth as the dependent variable. The study noted that Foreign Direct Investment is negatively and statistically insignificantly related to economic growth while the other variables are positive and statistically insignificant to economic growth during period under review. The study highlighted the role of macroeconomic variables as key factor in driving economic growth.

Moutinho (2020) examined the nexus between economic growth and macroeconomic variables environmental drivers of sustainable economic growth characterized by a well-diversified portfolio for a team of selected OPEC countries within the context of the environmental Kuznets curve hypothesis. The study employed some econometric techniques including pool mean group, mean group, and dynamic fixed effect techniques. The results obtained suggested that the contribution of Foreign Direct Investment to the economy studied is not significant.

Philip (2010) studied the effect of macroeconomic variables on economic growth in Nigeria using Co-integration and Granger causality test between 1970 and 2005. The variables under consideration were foreign direct investment, inflation rate, interest rate, balance of payment and exchange rate. The findings revealed and identified a unidirectional causality and no co-integrating relationship between Inflation and economic growth through in Nigeria while other variables have no causal relationship but were positively related. Machi (2011) empirically test the determinants of economic growth in Nigeria using time series data ranging from 1970 to 2008 and adopting the Johansen's method of cointegration-regression analysis. The findings showed that policies that encourage investments in physical capital, human capital, man power development, training, research and technological development would boost both short run and long term growth of the economy. Hence policy tools such as fiscal, monetary and income-price policies should be used by the government to achieve economic growth in Nigeria.

MATERIALS AND METHODS

This study adopts ex-post facto research design to investigate the effect of macroeconomic variables on economic growth in Nigeria during the 1990-2024. The ex-post facto research is a kind of research in which the researcher predicts the possible causes behind an effect that has already occurred. It is an interesting point to note that, the researcher predicts a cause on the basis of a controlled effect (since no variation can be done on the effect which has already taken place on the basis of the independent variable or the cause). It should, however, be pointed out that the most serious danger of ex-post facto research is the conclusion that because two factors go together, one is the cause and the other is the effect.

Model for the Study

In order to examine the effect of macroeconomic variables on economic growth in Nigeria, the study adopted the neoclassical production function as its model. The neoclassical production function is an economic production with two or more variables (inputs) that describes the output of a firm.

Model specification

Thus, following the model for the study above with modification on the variables of interest in this study, the paper adopted the model by Antwi *et al.* (2013). The model of the study is specified in a functional form as:

$$GDP=f(FER,IR,IFR,FDI) \dots(1)$$

The stochastic form of the model which explores linear relationship between Economic growth and macroeconomic variables are stated as:

$$GDP=\beta_0+\beta_1FER+\beta_2 IR +\beta_3INF+\beta_4FDI+\mu \dots(2)$$

Where,

$\beta_1, \beta_2, \beta_3,$ and β_4 = Slope coefficients which shows the rate of change in the value of GDP, when there is a unit change in the value of independent variables

β_0 = Intercept coefficient which shows the rate at which GDP will change independent of FER, IR, INF and FDI

‘ μ ’ =Error term which shows other external factors that might affect the magnitude of GDP that are not stated in the model

GDP = Economic Growth (Annual Growth Rate of Export)

FER= Foreign Exchange Rate

IR = Interest Rate

INF = Inflation Rate

FDI =Foreign Direct Investment

The a priori expectations are expected to sign positive and greater than zero for all variables.

Therefore, $\beta_1, \beta_2, \beta_3,$ and $\beta_4 > 0$

Method of Data Analysis

The data analysis was carried out using Unit root test and the Cointegration test before the regression in the study in order to establish the effect of macroeconomic variables on economic growth in Nigeria. Thus:

Augmented Dickey-Fuller (ADF) Test: Before any meaningful regression is performed with time series data, it is essential to test the existence of unit roots in the variables and hence establish their order of integration. The variables used in the analysis need to be stationary and/ or should be cointegrated in order to infer a meaningful relationship from the regression. The test results of the Augmented Dickey-Fuller statistic for the time series variables used in the estimation are presented in the Table 1. From the ADF test results of the variables shown on Table 1, revealed that all the result values of the ADF test statistics were negative. This is because the ADF statistics of Gross Domestic Product (GDP), Foreign Exchange Rate (FER), Interest Rate (IR), Inflation Rate (INF), and Foreign Direct Investment were -5.331, -4.701, -8.374, -4.999 and -11.447 which are greater than their critical values at 1%, 5% and 10%, implying that the variables are stationary at 1%, 5% and 10%. They are also integrated (at first difference) of order 1, i.e, I(1).

Table 1: Results of Unit Root Test (ADF)

Variables	First Difference	Critical Values			Prob.	Order of integration
		1%	5%	10%		
GDP	-5.331088	-4.284580	-3.562882	-3.215267	0.0008	I(1)
FER	-4.701279	-4.284580	-3.562882	-3.215267	0.0037	I(1)
IR	-8.374889	-4.284580	-3.562882	-3.215267	0.0000	I(1)
INF	-4.999921	-4.296729	-3.568379	-3.218382	0.0018	I(1)
FDI	-11.44705	-4.284580	-3.562882	-3.215267	0.0000	I(1)

Source: Author’s computation, 2024 using E-views 10 plus

Note: these critical values are computed from Mackinnon (1996). If $Z(t)^* \geq ADF$ (t-statistic), it implies that unit root exists. If $Z(t)^* \leq ADF$ (t- statistic), it implies that unit root does not exist.

Johansen Cointegration Test

Since all the variables were found to be integrated of order 1, that is I(1) and stationary at 1%, 5% and 10%, the Johansen hypothesized Cointegration test is carried out to determine the number of stationary long-run relationships among the variables included in the study. It offers one test, the Trace test with a view to identify the number of cointegrating relationships. The result is presented in Table 2 below. From Table 2 above, it revealed that there is co-

integration among the variables. That is because the Trace statistic of 126.05 is greater than the critical value of 88.80 at 5% level of significance. We reject the null hypothesis of none* of the hypothesized number of co-integrating equation(s) and accept the alternative. Accordingly, Trace statistics test indicates 1 co-integrating equations at 5 percent level of significance. For the remaining number of hypothesized co-integrating equations (at most 2, 3 and 4), we do not reject the null hypothesized as their Trace statistics values are less than the critical values at 5 percentage level of significance.

Table 2: Result of the Unrestricted Co-integration Rate Test (Trace)

Null Hypothesis	n-r	Hypothesized No of CEs	Eigen Value	Trace Statistics	0.05 Critical Value	Prob**
r=0	4	None*	0.895168	126.0506	88.80380	0.0000
r<1	3	At most 1	0.557704	58.38861	63.87610	0.1328
r<2	2	At most 2	0.459843	33.91535	42.91525	0.2924
r<3	1	At most 3	0.330670	15.43849	25.87211	0.5383
r<4	0	At most 4	0.106972	3.394132	12.51798	0.8268

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

*** denotes rejection of the hypothesis at the 0.05 level**

Regression Analysis and Results

The result on Table3 above revealed that Foreign Exchange Rate (FER) has a positive and strong impact on Gross Domestic Product (economic growth) in Nigeria. The finding implies that gross domestic product increases more than proportionate increase in Foreign Exchange Rate (FER) (i.e a one percent increase in Foreign Exchange Rate will generate 1.02 percent increase in Gross domestic product). The study is in agreement with Ali (2015), Tomar and Tomar (2014); Antwi (2013); Edoumiekumo and Opukri (2013) that; Foreign Exchange Rate has positive and statistically significant on economic growth in Nigeria. Also, the direction of causality between FER and GDP is un-directional, which flows from GDP to FER during the period under review. It is deducted from the findings that as the revenue generation from Foreign Exchange Rate increases, will increases the value (amount) of Gross domestic product (economic growth) in Nigeria. Therefore, it suggests that, Foreign Exchange Rate is a determinant of economic with in Nigeria within the period under review.

Similarly, the result revealed that Interest Rate (IR) has a positive but weak impact on Gross domestic product in Nigeria. This finding signifies that as one percent increase in Interest Rate is realized, less than one percent increase will be realized as growth on Gross domestic product in Nigeria. The result of the findings agreed with the empirical review by Kamran (2014); Zafar (2013) and Obamuyi (2009) who concluded that; Interest Rate has a positive and insignificant impact on economic growth in Nigeria. Also, the direction of causality between IR and GDP revealed no causality between the two variables during the period under review. It means, Interest Rate has a positive impact on economic growth in Nigeria but not a significant determinant of economic growth.

Also, the result revealed that the coefficient of Inflation Rate (INF) has a positive and insignificant effect on economic growth in Nigeria. This finding signifies that as one percent increase in Inflation Rate is realized, less than one percent increase will be realized as growth on Gross domestic product in Nigeria. The result of the findings agreed with the empirical review by Rahman and Salhuddin (2010) and Hussain (2016) who concluded that; Inflation Rate has a positive and insignificant impact on economic growth in Nigeria. Also, the direction of causality between INF and GDP revealed no causality between the two variables during the period under review. It means, Inflation Rate has a positive impact on economic growth in Nigeria but not a significant determinant of economic growth.

However, , the coefficient of Foreign Direct Investment (FDI) is negative and insignificant, indicating that it has a negative impact on Gross domestic product (economic growth) in Nigeria during the period 1990-2024. The result of this research is in agreement

with the study by Dimas (2022) and Moutinho (2020) that Foreign Direct Investment has a negative and insignificant impact on economic growth. The finding implies that gross domestic product decreases with increase in the expenditure on Foreign Direct Investment. This could be attributed to leakages on the revenue generated from Foreign Direct Investment and or the result of over shooting the expenditure on the variable. Therefore, this could affect negatively the impact of Foreign Direct Investment on gross domestic product (economic growth) in Nigeria.

It is obvious from the coefficient of multiple determinations (R^2) on table 3 that the model has good fit as the independent variables (FER, IR, INF and FDI) jointly explained ninety-six percent (0.96%) of the movement in the dependent variable with R^2 - adjusted of ninety-five percent (0.95%). The F-statistic was significant at 13.30454% which explains the overall significance of all the variables incorporated in the model as indicated by both R^2 and R^2 - adjusted. The value of Durbin-Watson 1.956474 (App 2) indicates absence of spurious results and no presence of autocorrelation in the data.

Table 3: Present the results of Autoregressive distributed Lag Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FER	1.026535	0.043082	23.82738	0.0000
IR	0.067481	0.319287	0.211349	0.8343
INF	0.099815	0.382884	0.260691	0.7964
FDI	-0.035700	0.000373	-0.955838	0.3480
ECT(-1)	-2.92E-05	3.03E-05	-0.963781	0.3440
C	11.46311	11.51927	0.995125	0.3288
R-squared	0.964984	Mean dependent var		136.7378
Adjusted R-squared	0.958250	S.D. dependent var		125.3427
S.E. of regression	25.61092	Akaike info criterion		9.491275
Sum squared resid	17053.90	Schwarz criterion		9.766101
Log likelihood	-145.8604	Hannan-Quinn criter.		9.582372
F-statistic	13.30454	Durbin-Watson stat		1.956474
Prob(F-statistic)	0.000000			

Test of Hypothesis

The decision of whether Macroeconomics variables are statistically significant on Economic Growth in Nigeria during the period under review is analyzed using the standard error test.

H₀₁: Foreign Exchange Rate has no significant effect on GDP in Nigeria:

The estimated value of Foreign Exchange Rate is 1.02. Based on the decision rule above, since the value of S. E (β_1) 0.04 is less than the value $\frac{1}{2}$ of β_1 (1.02), this research therefore rejects the null (**H₀₁**) hypothesis and the alternative hypothesis is accepted, that Foreign Exchange Rate has positive and significant effect on economic growth in Nigeria. It can therefore be inferred from this research finding and from the various studies cited in the literature that Foreign Exchange Rate has strong positive effect on economic growth in Nigeria.

H₀₂: Interest Rate has no significant effect on economic growth in Nigeria:

Following the estimated value of the Interest Rate (IR) above, the result of the coefficient of IR is 0.07. Based on the decision rule above, since the value of S.E (β_2) 0.32 is greater than the value $\frac{1}{2}$ of β_2 (0.07), this research therefore accepts the Null (**H₀₂**) hypothesis and alternative hypothesis is rejected, that IR has a positive but statistically insignificant on economic in Nigeria within the period under review. It can therefore be inferred from the research finding and from the various studies cited in the literature Interest Rate has weak positive effect on economic growth in Nigeria.

H₀₃: Inflation Rate has no significant effect on economic growth in Nigeria:

The estimated coefficient value of Inflation Rate (INF) is 0.10. Based on the decision rule above, since the value of S. E (β_3) 0.38 is greater than the value $\frac{1}{2}$ of β_3 (0.10), this

research therefore accepts the Null hypothesis and alternative hypothesis is rejected, that Inflation Rate has a positive and insignificant effect on economic growth in Nigeria during the period under review. It can therefore be inferred from the research finding and from the various studies cited in the literature that Inflation Rate has a positive relationship with economic growth in Nigeria.

H₀₄: Foreign Direct Investment has no significant effect on economic growth in Nigeria:

It was established that the coefficient value of Foreign Direct Investment is -0.04. Based on the decision rule above, since the value of S. E (β_4) 0.03 is greater than the value $\frac{1}{2}$ of β_4 (-0.04), this research therefore accepts the Null (**H₀₄**) hypothesis and alternative hypothesis is rejected, that Foreign Direct Investment has negative and statistically insignificant on economic growth in Nigeria. It can therefore be inferred from this research finding and from the various studies cited in the literature that Foreign Direct Investment has weak negative effect on economic growth in Nigeria within the period under review.

CONCLUSION AND RECOMMENDATIONS

From the analysis of the results, it can be seen that Foreign Exchange Rate (FER), was found to have a strong positive and statistically significant on economic growth in Nigeria. The coefficient of Interest Rate (IR) and Inflation Rate (INF) depicts a positive but weak influence on Gross Domestic Product (economic growth) in Nigeria, while Foreign Direct Investment (FDI) has a negative relationship with Gross Domestic Product (economic growth) in Nigeria during the period under review. Therefore, it can be generally concluded that, macroeconomic variables is positively and insignificantly related to economic growth in Nigeria during the period of study. Thus, this therefore, means that policy makers should put more structures to employ sound policies towards positive working of both the fiscal and monetary for a robust economy.

- i. With the high earnings from Foreign Exchange Rate, the government of Nigeria through sound economic team/policy makers should ensure to maintain and if possible, review the policies on Foreign Exchange towards enhancing more returns and sustainability that would better the lives of the citizens.
- ii. It is established that Interest Rate is positively related to Gross Domestic Product (economic growth), which shows that the variable Interest Rate increases the amount of Gross Domestic Product (economic growth) and a source of growth to the economy. Therefore, macroeconomic policies geared towards enhancing favorable returns in interest on investment of capital should be harnessed by policy makers for better yield which would contribute immensely to economic growth in Nigeria.
- iii. That Inflation Rate (INF) has a positive and weak impact on Gross Domestic product (GDP) in Nigeria. This means that policy makers should ensure to enforce macroeconomic policies that will bring about higher level of supply of commodity as a result of productivity in Nigeria, which will lower inflation rate towards facilitating growth. Policy makers should ensure to employ good macroeconomic policies that would bring about production economy e.g, the manufacturing sector towards enhancing production of goods and services and discourages consumption economy in order to maintain a stable economy towards accelerated economic growth in Nigeria.
- iv. The findings revealed that, Foreign Direct Investment (FDI) has a negative and insignificant impact on Gross Domestic Product (GDP) in Nigeria probably as a result of leakages arises from poor macroeconomic policies on management or over estimation of investment on Foreign Direct Investment (FDI). Therefore, policy makers should review the policies on the administration of the variable Foreign Direct Investment and apply policies and practices that will reverse the result in order to contribute positively and significantly to the growth of the Nigerian economy.



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