

Macroeconomic Determinants of Economic Growth in Nigeria: A Co-integration Approach

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Abstract

The study examines the macroeconomics determinants of economic growth in Nigeria measured by real gross domestic product (RGDP). We used time series data obtained from CBN for a period of 26 years that is 1986 to 2012. Augmented Dickey-Fuller (ADF) test was used for the unit root test and Johansen's co-integration test was also conducted to establish short and long run relationships between economic growth and its macroeconomics determinants. The result shows six co-integrating equations which establish the existence of long run relationship among the variables. Ordinary Least Square statistical technique was used to assess the degree of influence the variables have on each other. The results show that gross fixed capital formation, foreign direct investment and total government expenditure are the main determinants of Nigeria economic output under a stable inflationary rate. The study recommended that there is need for government to consciously develop the business environment by provision of necessary infrastructure, which will lower the cost of doing business in Nigeria. There is also the need for the government to retain tight monetary and fiscal policies in order to fight inflation in the Nigerian economy, since inflation have negative influence on investment and Nigeria economic growth and finally, There is needs to put stringent policy in place to minimised strike in Nigeria labour sector in order to enhance their performance to the nation economy.

Keywords Macroeconomic, Economic Growth, Investment, Monetary Policy and Fiscal Policy

Introduction

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 of the country. 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.

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 Imoughale (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.

After independence in 1960, the immediate challenge that faced the Nigerian economy was how to increase robust economic growth in order 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 growth 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 even Yaqub (2011) asserted that, the growth of Nigeria economy is sluggish compared to the emerging economy in the world.

Acknowledge these, 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 macroeconomic policies 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 place on monetary measures than fiscal measure in the conduct of stabilisation policy. Uniamikogbo and Enoma (2001) asserted that monetary variable is more effective and dependable than fiscal variable in affecting changes in 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).

However, despite these macroeconomic policy measures, the performance of the Nigerian economy in terms of growth has been dismal. Available information reveals that the growth of Nigeria economy as at 1990 was 8.2% and decrease to 5.4%, 4.6%, and 3.5% in 2000, 2001, and 2002 respectively. It further increased to 9.6% in 2003 and decrease to 5.8% in 2005 and increased marginally to 6.4% and 7.3% in 2008 and 2011 respectively. With all

these, one cannot but wonder what actually the macroeconomic determinants of Nigeria economic growth are and what are the macroeconomic policy implication of Nigeria economic growth between 1986 and 2012 through the use of error correction model and based on empirical findings, proffer possible solutions towards the promotion of economic performance in Nigeria.

The rest of the study is structured as follows: section two had a review of related literatures. The theoretical framework and methodology of the study is presented in section three. Section four had result and discussions. Section five, concludes the study with conclusion and recommendations.

Review of Related Literatures

According to Aigbokhan (1995), Economic growth means an increase in the average rate of output produce per person usually measured on a per annum basic. It is also the rate of change in national output or income in a given period. Economic growth is the increase of per capital gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in real GDP. Economic growth refers only to the quantity of goods and services produced. Godwin (2007) defines economic growth as an increase in real gross domestic product (GDP). That is, gross domestic product adjusted for inflation. The growth can either be positive or negative. Negative growth can be referred to by saying that the economy is shrinking. This is characterised with economic recession and economic depression. Ullah and Rauf (2013) noted that whenever there is increase in real GDP of a country it will boosts up the overall output and we called it economic growth. The economic growth is helpful to increase the incomes of the society, help the nation to bring the unemployment at low level and also helpful in the deliveries of public services.

Macroeconomic policy refer to those policy 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.

The Neo classical growth models of Solow (1956) and Swan (1956) believed that, in the long run that technological progress and population growth are the main determinant of

economic growth. They are of the view that government can influence the population growth rate, saving rate and incentive to invest in human and physical investment through its different policies such as fiscal, monetary, income and exchange rate policies. These policies can change the equilibrium factor ratio or affect the transition path of steady state growth rate. While endogenous growth model by Barro (1990), Lucas (1990) and King and Rebelo (1990) believed that physical and human capital do affect economic growth but fiscal policy variables like distortionary taxation and productive expenditure affect the output level and its steady growth rate. According to Neo classical growth model, impact of fiscal policy on steady economic growth is temporary and not the permanent one.

Over the last few decades the macroeconomic policies and economic growth relationship became the hot issue amongst the government, policy makers and researchers. There is a growing literature on the determinants of economic growth in cross countries and country specific with varied submission and conclusion. For examples Barro (1995) examined the determinants of economic growth and the empirical findings for a panel of around 100 countries from 1960 to 1990 strongly support the general notion of conditional convergence. For a given starting level of real per capita GDP, the growth rate is enhanced by higher initial schooling and life expectancy, lower fertility, lower government consumption, better maintenance of the rule of law, lower inflation, and improvements in the terms of trade while growth is negatively related to the initial level of real per capita GDP. Political freedom has only a weak effect on growth but there is some indication of a nonlinear relation and concluded that there is a strong positive influence of the standard of living on a country's propensity to experience democracy.

According to Cozier and Selody (1992), their results based on data from 22 countries belonging to the Organisation for Economic Cooperation and Development (OECD), suggest that inflation has a negative effect on economic output which is economically large and statistically significant. They further conclude that a permanent 1 percentage point reduction in inflation would raise growth by just over 0.1 percentage points, and would eventually raise output by about 6 percent. Dewan and Hussein (2001) used a sample of 41 middle-income developing countries to develop an empirical model for growth. The study also presents a wide-ranging examination of both theoretical and empirical evidence on the many ways macroeconomic policies affect growth. The results suggest that apart from growth in the labour force, investment in both physical and human capital, as well as low inflation and open trade policies are necessary for economic growth. Furthermore, the ability to adopt technological changes in order to increase efficiency is also important. Since many developing countries have a large agricultural sector, adverse supply shocks in this sector was found to have a negative impact on growth.

Antwi, Mills and Zhao (2013) study the impact of macroeconomic factors on economic growth in Ghana for the period 1980 to 2010 by means of Cointegration and error correction models using yearly data for the period and then recommend actions that should be taken to speed up the growth process in the country. The findings showed that long-run economic growth is largely explained by physical capital, foreign direct investment, foreign aid, inflation and government expenditure. It is also evident that economic growth is not affected by short-terms changes in labour force. The estimated coefficient of the ECM indicates a mild speed of adjustment to equilibrium. They recommended that government must reform the tax system and improve its budget balance and government should continue to direct foreign assistance into the programmes that produce public capital since this improves the productivity of the masses and hence, is likely to have a positive long run effect on economic growth. Ullah and

Rauf (2013) evaluate the impacts of macroeconomic variables on economic growth in case of some selected Asian countries using panel data from 1990 to 2010 and found that the sample countries economic growth is positively affected by foreign direct investment and saving rate while exports have negative impacts on economic growth and labour force and tax rate have no impacts on economic growth.

Aurangzeb and Ul Haq (2012) asserted that Investment plays an important role in driving growth through increase in productivity levels. Foreign direct investment brings technology and creates employment. It helps to adopt new methods of production and enhances productivity by bringing competition in the economy. Foreign direct investment also introduces to novice management and organizational skills, and explores hidden markets in the economy. It reduces the barriers in adoption of technology and brings improvements in the quality of labour and capital inputs in the host economy. Furthermore investigating the impact of investment on the economic growth using multiple regression technique and found that public investment, private investment and foreign direct investment contribute to economic growth significantly concluded that bi directional relationship of gross domestic production with foreign direct investment and public investment while unidirectional relationship of gross domestic production is found with private investment and recommended that Pakistan should make stronger efforts to attract as much FDI as possible to the foreign exchange sectors in the short term.

Rahman and Salahuddin (2010) empirically analysed the relationship between economic growth and its determinants, with special focus on stock market development. Using data for the period from 1971 to 2006 and employed FMOLS and ARDL bounds testing for the long run relationship and ECM for the short run dynamics, the findings suggest a positive relationship between efficient stock markets and economic growth, both in short run and long run while financial instability and inflation have negative effects. Furthermore human capital, foreign direct investment and stock market liquidity have positive effects on economic growth.

Sabir and Tahir (2012) study the impact of different macroeconomic variables on the welfare of the poor in Pakistan, through annual time series data which spanned between 1981 and 2010. Using multiple regression technique to detect the relation between macroeconomic variables and poverty, the findings revealed that GDP growth rate per capita income, major crops, minor crops and livestock had negative impact while inflation and population growth rate had positive impact on poverty and concluded that the reduction in poverty in Pakistan is to be driven by the changes in the macroeconomic variables.

Zafar and Zahid (2013) examine the effects of some of the key macroeconomic variables on economic growth. Employing multiple regression framework and time series data over the period 1959-60 to 1996-97. The quantitative evidence shows that primary education to be an important precondition for accelerating growth. Similarly, increasing the stock of physical capital and openness of the economy contribute to growth. The empirical results also suggested that budget deficit and external debt is negatively related to economic growth, suggesting that relying on domestic resources is the best alternative to finance growth and reinforce the importance of sensible long-run growth-oriented policies to obtain sustainable growth.

For studies conducted in Nigeria, 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, 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. Using time series data for the period 1980 to 2011 and adopting various econometric techniques such as Granger causality test, and Error Correction Mechanism (ECM), the results reveal that real interest rate has direct and significant effects on Nigeria economic growth while external debt and real exchange rate impact negatively on growth in the country. The study concluded that for macroeconomic stability to be achieved in Nigeria, each of the factors should be examined individually such that its respective effect on growth could be identified while appropriate macroeconomics policy would be formulated and implemented where required.

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 co-integration-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.

Ahmed and Sabo (2011) evaluate the impact of macroeconomic policies on economic development in Nigeria for the period which spanned between 1990 and 2008. Employing multiple regression technique in the analysis, it was discovered that public capital expenditure, fuel price, balance of trade and bank total lending have positive impact on economic development while net foreign direct investment and dummy variable which capture the period of major macroeconomic policies has negative and insignificant effect on economic growth which implies that the structural adjustment programmes introduced in 1986 and covered up to 1994 as well as National Economy Empowerment and Development Strategies introduced since 2004 did not translate into the long run economic growth. Rather they ended in pushing the economy deeper into the depression. They recommended that there is a need to introduce greater depth and comprehensiveness in the ongoing macroeconomic policy, and more efficient utilization of foreign direct investment to make macroeconomic policies impact significantly on economic development in Nigeria.

Edoumiekumo and Opukri (2013) evaluate Economic Growth Factor in Nigeria considering the Role of Global Trade by using annual time series data from 1981 to 2008. The result shows two co-integrating equations which establish the existence of long run relationship among the international trade. Ordinary Least Square statistical technique was used to assess the degree of influence the variables have on each other. The results show that positive relationship exists between the variables, RGDP, export and import. The export parameter is insignificant at 5 percent. The overall model is significant at 5 percent. While the Granger causality test showed that there is causality between the variables and realized a unidirectional relationship. Real GDP Granger cause export and import Granger cause RGDP and export and concluded that Nigeria needs to increase or diversify her export goods to enjoy more of the benefits of international trade which will have robust impact on her economic growth.

Methodology

Theoretical Framework and Model Specification

Macroeconomic theory has identified various factors that influence the growth of a country from the classical, neoclassical and the new growth theories. Antwi, Mill and Zhao (2013) asserted that these factors include natural resources, investment, human capital, innovation, technology, economic policies, governmental factors, foreign aid, trade openness, institutional framework, foreign direct investment, political factors, socio-cultural factors, geography, demography and many others. In order to examine the empirical evidence of the macroeconomic factors of economic growth in Nigeria, the study considers most of these factors. Following broadly the approach adopted in Lucas (1988), the researcher specifies the economic growth function for Nigeria as follows: Real gross domestic product is a function of physical capital, labour force, and foreign direct investment, openness of the economy, inflation and government expenditure. It is precisely expressed as follows:

$$RGDP = f(K, L, FDI, OPEN, INF, GE, MS) \text{-----} (1)$$

Thus, our growth function becomes:

$$RGDP = \beta_0 + \beta_1 K + \beta_2 L + \beta_3 FDI + \beta_4 OPEN + \beta_5 INF + \beta_6 GE + \beta_7 MS + Ut \text{-----} (2)$$

Where,

RGDP represents the real gross domestic product

K Represents Physical Capital measured as Gross Fixed Capital Formation

L Represents Total Labour Force

FDI Represents Foreign Direct Investment

OPEN Represents openness of the economy measured as export + import/gross domestic product

INF Represents Inflationary Rate

GE Represents total Government Expenditure

Ut Is the error term assumed to be normally and independently distributed with zero mean and constant variance, which captures all other explanatory variables which influence economic growth but are not captured in the model.

$1 \beta, 2 \beta, 3 \beta, 4 \beta, 5 \beta, 6 \beta$ are the partial elasticity of real GDP.

Sources of data

The data to be used in carrying out this study would be time series data for the period 1986 – 2012 obtained mainly from secondary sources. Among these are Central Bank of Nigeria (CBN) statistical bulletin (various issues), The National Bureau of Statistic (NBS), Economic Journals, text book and published article in the subject matter.

Method of Data Analysis

The estimation techniques of investigating the model are in four stages:

First, Time series is stationary when the mean $E(x_t)$ of time series (x_t) does not depend on t , and the variance, $E[x_t - E(x_t)]^2$ does not vary systematically with time. A stationary process has the property that the mean, variance and autocorrelation structure do not change over time. Stationary data depends on whether it has a unit root. Non-stationary data has stochastic or random trends and as such they are non deterministic. Therefore, when unit root is present, it implies that the time series data are non-stationary. The standard approach to investigate the stationary of time series data is the unit root test. The most commonly used is the Augmented Dickey Fuller (ADF) test proposed by Dickey and Fuller (1981). Basically, this

step seeks to establish whether a particular time series data is stationary or non-stationary. If it is non – stationary, then it has to be differenced either once or twice.

To carry out this test, we test the null hypothesis of a difference stationary against the alternative hypothesis of a trend stationary (Enoma and Isedu, 2011). Thus,

$H_0: Y_k \sim 1(1)$

$H_0: Y_k \sim 1(0)$

Secondly, the variables are tested for co- integration, to find their convergence status. This is because variables that fail to converge in the long run may be hazardous to policy making. The theory of co-integration pioneered by Engle and Granger (1987) addresses this issue of integrating short-run dynamics with long-run equilibrium.

Thirdly, we estimate the model to evaluate the performance of the monetary policy on non-oil export .The estimation is carried out by using the ordinary least squares (OLS) technique, which is regarded as the best linear unbiased estimator (BLUE) that can be used in evaluating models of this nature (Gujarati 2002).The estimation, however, presupposes that the variables possesses desirable empirical properties of stationary and convergence (co-integration). However, if these desirable properties are not achieved we use the Error Correction specification to estimate the equation before using the ordinary least square technique.

Empirical Results and Interpretation

Unit Root Test

The unit root test in Table 1 shows that real gross domestic product, Gross Fixed Capital Formation, total Labour Force, foreign direct investment, and total government expenditure are stationary at first difference 1(1), since the ADF value of each of the variables at first difference is greater than the McKinnon 5% critical values, while openness of the economy and inflationary rate are stationary at level because the ADF value of each variable at level is greater than the McKinnon 5% critical values.

Table 1:

Unit Root Test

Variable	ADF calculated value in Level	ADF calculated value at 1st Difference	McKinnon 5% Critical value	Order of Integration
RGDP	-2.588	-4.097	-2.985	1(1)
GFCF	-1.542	-4.774	-2.985	1(1)
LF	-1.183	-7.881	-2.985	1(1)
OPEN	-3.83	-	-2.980	1(0)
GE	-2.023	-7.931	-2.985	1(1)
FDI	-1.128	-3.995	-2.985	1(1)
INF	-3.967	-	-2.980	1(0)

Sources: Authors' calculation.

Johansen Co-integration Test

The result of Johansen co-integration test is shown in Table 2 below. The result shows that there exist six (6) co-integrating equations at 5% level of significance. This is because the likelihood ratio is greater than critical values at 5%. This shows that there exists a long run

relationship between economic growth and all the explanatory variables. The result indicates that in the long run, the dependent variables can be efficiently anticipated using the specified independent variables and, thus, error correction model can be estimated.

Table 2:
Co-integration Test

Date:08/04/14 Time: 04:36 Sample: 1986 2012 Included observation: 25 Series: GDP, FDI, GE, GFCF, INF, LF, OPEN Lag interval: 1to 1				
Eigen value	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.981379	216.8516	94.15	103.18	None **
0.841976	117.2647	68.52	76.07	At most 1 **
0.680227	71.13945	47.21	54.46	At most 2 **
0.641418	42.63584	29.68	35.65	At most 3 **
0.402564	16.99590	15.41	20.04	At most 4 *
0.151876	4.118211	3.76	6.65	At most 5 *

*(**) denotes rejection of the hypothesis at 5% (1%) significance level
L.R. test indicates 6 co-integrating equation(s)

at 5% significance level

Sources: Authors computation.

Presentation of Regression Result

The result of error correction model is presented in table 3 below.

Table 3:
Regression Results

Regressor	Coefficient	Std Error	T-statistic	Probability.
C	-0.011	0.022	0.489	0.631
D(LGFCF)	0.518	0.127	3.271	0.004
D (LLF)	0.002	0.368	0.015	0.988
D (LFDI)	0.241	0.112	2.154	0.044
D(LOPEN)	0.246	0.107	1.390	0.182
D(LGE)	0.679	0.198	2.544	0.020
D(LINF)	-0.351	0.025	-1.570	0.134
ECM(-1)	-0.706	0.233	-3.749	0.001

R² = 0.584

R⁻² = 0.423

F – Statistic = 3.614

Prob (F – Statistic) = 0.013

D.W Statistic 1.741

Sources: Authors computation.

The regression result shown in Table 3, shows a significant Positive relationship between gross fixed capital formation and economic growth. One percent increase in gross fixed capital formation, *ceteris paribus*, will lead to about 0.52 percent increase in Nigeria economic growth. This is consistent with *a priori* expectation. This result supports the fact that increasing investment size enhances productivity which has a spill over effect on economic performance. Total labour force has an insignificant positive relationship with economic growth suggesting that its contribution to economic output is low as results of the incessant strike of workers.

Foreign direct investment has a positive correlation with Nigeria economic growth. This is in line with expectation as more inflow of FDI help to bridge the gap between savings and investment which is necessary condition for economic growth. From the result, the coefficient of FDI is significantly positive (at 5 percent significant level). The implication of this result is that FDI is a major macroeconomic determinant of economic growth. This finding is consistent with Imoughale and Ismaila (2014). The result also shows that the coefficient of total government expenditure has a significant positive effect on Nigeria economic growth such that one percent increase in government expenditure will leads to 0.679 percent increase in Nigeria economic performance. This is consistent with standard theories and economic expectation because the higher government expenditure on productive venture the greater economic output, *ceteris paribus*.

The result shows that the coefficient of openness of the economy is positive but insignificant such that one percent increase in openness of the economy will leads to 0.246 percent increase in Nigeria economic growth. This suggests that the development of the Nigerian international trade system has no robust impact on the nation economic performance. The implication of this result is that the Nigeria external trade which is dominated by export of crude oil is price inelastic and has not engenders growth in the country due to its greatly influenced by instability in the world market price. The result further revealed that inflation rate is negative but insignificant such that one percent increase in inflationary rate will leads to 0.351 percent decreases in Nigeria economic growth.

The result shows that the coefficient of ECM is negative -0.706 and significant at 5% percent critical level. This shows that about 71 percent disequilibria in the economic growth in the previous years are corrected for in the current year. The significance of the ECM is an indication and a confirmation of the existence of a long run equilibrium relationship between economic growth and the macroeconomics determinants variables used in this study. The robustness of the error correction method further buttresses that only 71 percent is corrected in the previous year.

The coefficient of determinations R^2 of 0.584 indicates that about 58 percent of the total variations in Nigeria economic growth are explained by the variations in the independent variables. This shows that our model explains large proportion of variations in economic growth in Nigeria and also represents a good measure of fit. The F-statistic shows overall significance of the model. The F-statistic is significant at 5% level. The probability of its value (0.013) is less than the 0.05 critical levels. We, therefore, reject the null hypothesis that the model is not significant in explaining the variations in economic growth. Finally, the Durbin Watson test of autocorrelation shows an absence of serial autocorrelation. This is because the calculated value of DW (1.741) falls between lower critical level (DU) and 2 at 1% significant level. Where $DU = 1.741$. With this result we reject the hypothesis that there is presence of serial autocorrelation in our model. Therefore, parameter estimates from our model are stable, efficient suitable for policy simulation.

Conclusion and Policy Implications

This study has investigated the macroeconomic determinants of economic growth in Nigeria for the period which spanned between 1986 and 2012. An augmented accounting growth model was estimated via the Ordinary Least Square (OLS) techniques to ascertain the relationship between various macroeconomic variable and output growth in Nigeria. The variables were tested for stationarity and co-integration analysis was also carried out via the Augmented Dickey Fuller (ADF) method. Also error correction test was performed. The study found that the economic growth and selected macroeconomic variables included has a long run relationship with economics output performance. The study also reveals that gross fixed capital formation, foreign direct investment and total government expenditure are the macroeconomic variables that determined Nigeria economic growth. Furthermore, openness of the economy has direct but insignificant impact on the country economic output performance this may be connected with the high dependence of the Nigerian economy on crude oil export with the attendant vagaries of foreign shocks and instability. The study shows that inflation rate has inverse and insignificant effect on Nigeria economic growth. This finding confirms to the apriori expectation. This was attributed to the stable macroeconomic policy in the period of study.

Conclusively, the general lesson that emerges from this study is that investment proxy by gross fixed capital formation, foreign direct investment and total government expenditure are the main determinants of Nigeria economic output under a stable inflationary rate in the country. Based on the findings in this study and further to induce economic performance in Nigeria, the following recommendations are suggested:

There is need for government to consciously develop the business environment by provision of necessary infrastructure, which will lower the cost of doing business in Nigeria. The recent privatization of electric power holding company may be a step in the right direction if there is an improvement in the services provided.

There is need for the government to retain tight monetary and fiscal policies in order to fight inflation in the Nigerian economy, since inflation have negative influence on investment and Nigeria economic growth. There are needs to put stringent policy in place to minimised strike in Nigeria labour sector in order to enhance their performance to the Nigerian economy.

Finally, government should encourage stability in macroeconomic variables and employ such growth oriented and stabilization policies especially at macro level which will induce economic growth and development.

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