**IMPACT OF FISCAL POLICY ON ECONOMIC GROWTH IN NIGERIA**

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**TITLE PAGE**

 **IMPACT OF FISCAL POLICY ON ECONOMIC GROWTH IN NIGERIA**

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**APPROVAL PAGE**

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**DEDICATION**

This research work is dedicated to my lovely parents Mr. Chuba and Mrs. Uche Okonkwo, my brothers, my aunties and friends for their unquantifiable support and encouragement in my academic life.

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I am most grateful to God Almighty for his blessing in my life. My gratitude goes to my parents Mr. Chuba and Mrs. Uche Okonkwo, my brothers and my aunties for their care and support in all aspects.

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My deep felt appreciation goes to my friends, classmates and so many of them who in one way or the other supported me in my academic life. I pray that Almighty God will reward you all, Amen.

 **OkonkwoKosisochukwu.C.**

**ABSTRACT**

*This work is based on an empirical analysis of the impact of fiscal policy on economic growth in Nigeria 1981-2015. The main objective of this study is to empirical investigate/assess the impact of fiscal policy on Nigeria economic growth. A model was constructed to incorporate real gross domestic product (RGDP) as the dependent variable, tax, capital expenditure, recurrent expenditure, domestic debt as the independent variable and tested using the ordinary least-square (OLS) techniques. The empirical result shows that tax, capital expenditure and recurrent expenditure have significant impact on economic growth whereas domestic debt have no significant impact on the economic growth, more so, the result equally indicate that tax and capital expenditure have positive impact on the economic growth in Nigeria, whereas recurrent expenditure and domestic debt have negative relationship on the economic growth in Nigeria. Based on the result, the researcher recommends that Having seen the positive relationship that exist between tax and capital expenditure on the economic growth in Nigeria, Nigerian government should allocate more money to the capital project knowing very well that it will have a significant positive impact on the economic growth in Nigeria.*

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 **CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the Study**

 Fiscal policy is seen as that part of government policy concerned with the raising of government revenue through taxation and other means and the decision on the level and pattern of expenditure for the purpose of influencing economic activities or attaining some desirable macroeconomic goals. Economic growth on the other hand may be defined in terms of the total physical output, or real income, of an economy (Udabah, 2002). Fiscal policy can foster growth and human development through a number of channels such as increase in investment and productivity. Macroeconomic instability is particularly damaging to the poor in a nation, as their earnings are not indexed to inflation and they have limited opportunities to invest in assets that provide a hedge against inflation. But macroeconomic stability associated with prudent fiscal policy yields greater benefits, including higher rates of investment and educational attainment, as expected rates of return can better be achieved in an environment of low inflation. Prudent fiscal policy can help enhance factor productivity, leading to higher growth and consequently poverty reduction. The vast literature on endogenous growth theory suggests that fiscal policy can either promote or retard economic growth through its impact on decisions regarding investment in physical and human capital. In particular, increased spending on education, health, infrastructure, and research and development can boost long term growth. Higher growth, in turn, generates greater fiscal resources to finance spending on human capital, further bolstering the dynamism of the economy. Effectively and efficiently implemented government spending on infrastructure increases private sector productivity by providing complementary public inputs (for example, through spending on roads and bridges that facilitate trade in rural areas) Ineffective fiscal policy, on the other hand, can harm the growth process of an economy. Dead-weight loss from taxes that finance public spending, and the associated adverse factor-supply effects are good examples that readily come to mind. Unproductive public spending can take various forms, including: expenditure on wages and salaries of unproductive employees. Such resources can be deployed to more productive initiatives that would enhance increased productivity in the economy. Rent-seeking incentives reduce growth by diverting higher human capital away from productive activities with adverse impact on the index of productivity. Macroeconomic dynamics in Nigeria has been dominated in the past by fiscal instability. There have been a strong deficit and debt bias stemming from government revenue volatility. With about 75 percent of revenue from oil and gas, fiscal policy in Nigeria has been heavily influenced by oil driven volatility impacting both revenue and expenditure. Since 1970, both revenue and expenditure have been very volatile while increasing over time. In periods with high oil prices, such as in1979-82, 1991-92 and more recently in 2000-02, revenue and expenditure have increased sharply. The implications of such boom-bust fiscal policies include the transmission of oil volatility to the rest of the economy as well as disruptions to the stable provisions of government services (Thomas 2003).

Since the late 1980s, fiscal (budget) policy has become a major tool/instrument in Nigeria. The reasons for this are not inconsiderable. First is the dominant role of the public sector in major (formal) economic activities in Nigeria. This can be traced to several factors. Among them are the oil boom of the early 1970s, the need for reconstruction after the civil war, the industrialization strategy adopted at the time (import substitution industrialization policy) and the militarization of governance. The second reason for the increasing dominance of fiscal policy in the management of the economy is the fall in the international price of oil in the late 1980s. Furthermore, the persistent fiscal deficit since the early 1970s (and given the decline in oil revenue) required a new fiscal focus that saw the emergence of the public sector in major economic activities (Obi ,2007). Although the democratically elected government in 1999 adopted policies to restore fiscal discipline, the rapid monetization of foreign exchange earnings between 2000 and 2004, another era of oil windfall, resulted in large increases in government spending. In 2005 alone, government spending increased to 19 percent of GDP from 14 percent in 20000(CBN bulletin 2015). Extra budgetary outlays not initially included in the budget increased. Worst till, most of this spending were not directed towards capital and socio-economic sectors. Corollary primary deficit worsened from an average of 2.6 percent of GDP in 1980s to one of 6.2 percent in 1990s. In 2002 alone, primary deficit increases to 5 percent of GDP from 2 percent in 2000. These increases in deficits result in a mounting stock of debt, ranging from 88 percent of GDP in 1980s to 96 percent of GDP in 1990s. In 2002 alone, the stock of debt increased to 91 per cent of GDP from 45 per cent in 2000 (Cashin, 1995). However, considering the uncertain fiscal dynamics in Nigeria, the recent fiscal adjustment witnessed in 2005 might still not be sustained. Nigeria’s fiscal revenues are largely coincided with oil revenue accounting for nearly 80 percent of government revenues, which implies that the economy is highly exposed to price fluctuations in the world oil markets. Naturally, oil revenue is very volatile due to world oscillation in oil prices and to unpredictable changes in OPEC assigned oil quota of which Nigeria has been a member since 1958 following the commercial discovery of oil in Oloibiri in River State, Nigeria in 1956. Absence of suitable fiscal rules and a proper finance management framework for oil related risks over the past two decades in Nigeria have led to boom and-bust type fiscal policies that have generated large and unpredictable movements in government finances. Consequently, this has been a recurrent source of destabilizing effect of fiscal surprises on the domestic prices and exchange rate as well as financial system. Issues connected to budgetary (fiscal) policy have become major issues in our polity. The 2012 budget has attracted a lot of criticism. One of the major issues raised against Nigeria’s 2012 budget is the high rate of recurrent expenditure, despite government’s reduction from 74.4 per cent in 2011 to 72 per cent in 2012. Based on the 2012 budget, government proposed spending most of its money on running the administration rather than on badly needed infrastructure projects to create jobs and boost growth in the continent’s second-largest economy. 2014 budget was incremental in nature, the figures shows sharp increases in expenditure and that Nigeria has spent more than she has earned. Within the period, total revenue has witnessed an average increase of 29%, while total expenditure exceeded that by 15%. Between 2015 and 2016 average increase in expenditure was lower than revenue. This may be partly due to the negative impact of insurgency, recession etc. that significantly reduced government revenue. The figure also shows that government expenditure responds to changes in total revenue. Between 2014 and 2016 when government revenue dropped on the average by 0.82% due to significant decline in oil prices, government expenditure also shaded an average of 1.20% within the period. This suggests that Nigerian economy follows pro cyclical fiscal policies to changes in government revenue. Based on the above analysis, this investigation is primarily aimed at assessing the impact of fiscal policy on the economy of Nigeria.

**1.2 Statement of the Problem.**

In Nigeria, despite the importance of existing policies to achieve economic objectives of viable economic growth, the use of fiscal policy for the realization of these growth objectives is still highly questionable. The Nigerian economy has been plagued with several challenges over the years. Researchers have identified some of these challenges as: gross mismanagement/ misappropriation of public funds, (Okemini and Uranta, 2008), corruption and ineffective economic policies (Gbosi, 2007); lack of integration of macroeconomic plans and the absence of harmonization and coordination of fiscal policies (Onoh, 2007); inappropriate and ineffective policies (Anyanwu, 2007). Imprudent public spending and weak sectorial linkages and other socioeconomic maladies constitute the bane of rapid economic growth and development (Amadi and Essi, 2006). It is evident that one of Nigeria’s greatest problems today is the inability to efficiently manage her enormous human and material endowment. In spite of many, and frequently changing, fiscal, monetary and other macro-economic policies, Nigeria has not been able to harness her economic potentials for rapid economic development (Ogbole, 2010). These policies span through two broad periods, which can be classified as “regulation” and “deregulation”. Our main focus is the differential in fiscal policy failed to achieve a satisfactory level of welfare for the society by providing an equitable or fair distribution of income and wealth, or all of these (Ogiji, 2004). The 1930s Great Depression was a confirmation of the reality of the failure of the market economy which led to the evolution of Keynesian economics. Keynes submitted that the lingering unemployment and economic depression were a result of failure on the part of the government to control the economy through appropriate economic policies (Iyoha and Fischer (1990). Consequently, Keynes proposed the concept of government intervention in the economy through the use of macroeconomic policies such as fiscal and monetary policies. Fiscal policy deals with government deliberate actions in spending money and levying taxes with a view to influencing macro-economic variables in a desired direction. This includes sustainable economic growth, high employment creation and low inflation (Microsoft Corporation, 2004). Thus, fiscal policy aims at stabilizing the economy. Increases in government spending or a reduction in taxes tend to pull the economy out of a recession; while reduced spending or increased taxes slow down a boom (Dornbusch and Fischer, 1990). Government interventions in economic activities are basically in the form of controls of selected areas/sectors of the economy. These controls differ, and depend on the specific needs or purpose the government desires to achieve. Samuelson and Nordhaus (1998), distinguished between two forms of regulation, namely:

1. Economic regulation (involving control of prices, entry and exit conditions, regulation of public utilities, such as transportation and media organizations, regulation of the financial sector operations.
2. Social regulation (aimed at protecting the health and safety of workers at work place, the environment, and protection of consumer rights. our focus is on economic regulation. Aregbeyen (2007), Ekpo (1994), Amin (1998), Devarajan and Ekpo (1994). (Fuente (1997), Kneller and Galor (2005). Bose, Tanzi, and Zee (1996), established positive relationship between fiscal policy (public spending) and economic growth. Bose et al. (2003) in Aregbeyen (2007) found that the share of government capital expenditures in the gross domestic product is positively and significantly correlated with economic growth, while the growth effect of current expenditure is insignificant. Aregbeyen (2007) believed that although government expenditures were necessary for economic growth, yet the impact of such expenditures on the economy is of primary importance. He concluded that the key to rapid economic growth constituted capital and public investment expenditure and that increased government budget deficits do not automatically guarantee rapid economic growth. It is interesting to know that the available evidence shows that over the years, under review (1981- 2015), Nigeria’s fiscal operations have resulted in persistent overall deficit. Nigeria has recorded over thirty years of deficits. Deficits are meant to accelerate economic activities through investments and induced aggregate demand. But this has become a serious problem to know that despite the fact that Nigeria has been operating deficits over these periods and found itself in a situation of less than full employment, her economy has been in distress, the opposite view of the essence of deficits occur. There is obvious fall in the standard of living of the citizens, decline in the growth of the economy, persistent unfavorable balance of payment, increased public debt; local and foreign, continued depletion of the foreign reserve, little or no savings, decline in exports, increased inflationary pressure, continuous dependence on external economies etc. Finally, it is evident that one of Nigeria’s greatest problems today is the inability to efficiently manage her enormous human and material endowment. In spite of many, and frequently changing, fiscal, and other macro-economic policies, Nigeria has not been able to harness her economic potentials for rapid economic development (Ogbole, 2010). Thus the aim of this research is to empirically investigate the impact of fiscal policy on the economy by examining the case of Nigeria. According to Adeoye (2006), “The debate on the effectiveness of fiscal policy as a tool for promoting growth and development remains.

**1.3 Research Questions**

Therefore, this study aims to empirically investigate the aforementioned problems so as to bridge the gap in knowledge and contribute to existing literature. Thus, this study shall examine and address the following research questions:

1. What is the impact of government revenue (Tax) on economic growth in Nigeria?

2. What is the impact of government expenditure on economic growth in Nigeria?

3. What is the impact of domestic debt on economic growth in Nigeria?

4. What is the direction of causality between the fiscal policy components and economic growth in Nigeria?

**1.4 Objectives of the Study**

 The broad objective of this study is to empirically investigate/assess the impact of fiscal policy on Nigeria economic growth from 1981 to 2015.More specifically, this study intends to achieve the following:

1. To evaluate the impact of government expenditure on economic growth in Nigeria.
2. To determine the impact of government revenue (Tax) on economic growth in Nigeria.
3. To evaluate the impact of domestic debt on economic growth in Nigeria.
4. To ascertain the direction of causality between the fiscal policy components and economic growth in Nigeria?

**1.5 Statement of Hypothesis**

In carrying out this study, the following hypotheses would be tested and either accepted or rejected, based on the research findings.

1. H01: Government expenditure has no significant impact on economic growth in Nigeria.

2. H02: Government revenuehas no significant impact on economic growth in Nigeria.

 3. H03: Domestic debt has no impact on economic growth in Nigeria

 4. H04: Fiscal policy variables have no causal relationship with economic growth in Nigeria.

**1.6. Significance of the Study**

The findings of this study will be beneficial to individuals, cooperate bodies, researchers and the government and its agencies at large. At the level of the corporate bodies or the individual level, it will help them understand the way the government conducts its revenue and expenditure programs and to know how to respond to such programs and policies. It will also aid the government to predict with accuracy the impact that its revenue and expenditure program will have on the economy at large. This research work will also serve as a reference point for other researchers and the academic. Above all, it will add to existing stock of knowledge thereby filling up the knowledge gap.

**1.7 The Scopes and Limitation of the Study**

This work is set to do a thorough assessment of the impact of fiscal policy on Nigeria economic growth. The scope of this study will cover the period 1981-2015. Government expenditure, revenue and budget deficit financing will be used as fiscal policy instruments. The data to be used for analysis will be secondary data sourced from the 2010 and the golden jubilee edition of Central Bank of Nigeria statistical bulletin.

 **CHAPTER TWO**

**LITERATURE REVIEW**

 **2.0 Introduction**

Review of related literature is essential in a research study. A good researcher reviews existing literature which entails works which can be found in journals, books, magazines or other forms of literature (Madueme, 2010 as cited in Aguegbo, 2012). The review of literature will therefore guide the researcher by making known to him or her earlier intellectual effort made in the topic. It will also help the researcher identify uncovered areas in literature. Thus, it makes the research work to have a unique value. To this end, this chapter is divided into conceptual framework, theoretical literature, empirical literature, summary and value added of the research or research gap.

**2.1 Conceptual Literature.**

Under this sub-section of the study, interest will be channeled on making the research paper more reader-friendly. This will be achieved by providing the conceptual meaning of some key concepts contained in the work. The key concepts of interest to the researcher include the concept of Fiscal policy, and Economic Growth. These are discussed below.

**2.1.1The Concept of Fiscal Policy.**

The term fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities. They are types of fiscal policy which are expansionary and contraction fiscal policy. Expansionary fiscal policy is when there is increase in government spending and decrease in tax while contractionary fiscal policy is when there is decrease in government spending and increase in tax. The implementation of fiscal policy is essentially routed through government’s budget. The budget is, therefore, more than a plan for administering the government sector. It (budget) both reflects and shapes a country’s economic life. In fact, the most important aspect of a public budget is its use as a tool in the management of a nation’s economy. In designing and implementing fiscal policy, government plans for budget deficit, budget surplus or balanced budget. Budget deficit is a type of budget plan in which government expenditure outweighs its revenue, while budget surplus is a budget plan where government revenue is proposed to be greater than government expenditure. Balanced budget however, arises when government expenditure equals government revenue. When there is economic recession or depression, government plans for a budget deficit which is often referred to as expansionary fiscal policy. In this situation, taxes (i.e. compulsory levies imposed by the government on individuals, goods and corporate bodies) are reduced and government expenditure is increased. The implication of this is that by reducing taxes, the purchasing power of individuals is enhanced and the cost of production by corporate bodies reduces thereby improving their scale of operations. Similarly, increases in public expenditure if efficiently utilized could translate into improved infrastructural developments and consequently enhance general welfare and also put the economy on the path of growth. The bone of contention however, on the use of this type of fiscal policy (i.e. expansionary fiscal policy), is how the proposed increase in public expenditure over its revenue should be financed. The two contending options have been money printing and borrowing. Money printing is an exclusive right of relevant monetary authority (usually the Central Bank) which involves raising money supply to match demand in the economy. However, where the rate of increase in money supply (usually called Seignior age rate) rises above the rate of growth of economic activity, and given a stable demand function for base money, inflation will result (see Nung’u, 1995). Easterly and Fischer (1990) argue that where governments prints money to cover budget deficits, it is unlikely that rapid money supply growth takes place without fiscal imbalances. The second contending option of deficit financing is borrowing. The use of borrowing (from both domestic economy and foreign countries) particularly since the World War II has been an inevitable and veritable source of macroeconomic financing most especially in such situations where domestic resources are inadequate to put the economy on the path of sustainable growth and development.

**2.1.1 The Concept of Economic Growth**.

Anyanwu (1995) defines economic growth as “the increase overtime of an economy’s capacity to produce those goods and services needed to improve the well-being of the citizens in increasing numbers and diversity.” The economic growth rates of nations are commonly compared using the ratio of the GDP to population or per-capita income. The "rate of economic growth" refers to the geometric annual rate of growth in GDP between the first and the last year over a period of time. Implicitly, this growth rate is the trend in the average level of GDP over the period, which implicitly ignores the fluctuations in the GDP around this trend. An increase in economic growth caused by more efficient use of inputs (such as labor productivity, physical capital, energy or materials) is referred to as intensive growth. GDP growth caused only by increases in the amount of inputs available for use (increased population, new territory) is called extensive growth. The economic growth rate is calculated from data on GDP estimated by countries ‘statistical agencies. The rate of growth of GDP/capita is calculated from data on GDP and people for the initial and final periods included in the analysis of the analyst. According to Todaro (1977), it is the steady process through which the productive capacity of the economy is increased over time, to bring about rising level of national income. It can be discerned from these definitions that growth leads in turn to increase in National income. Growth is also seen as only meaningful if there is an improvement in the well-being of the populace overtime; which can only be possible if the rate of population growth lags behind that of economic growth. And as Mbeki (2003) puts it; “Economic growth can only translate into economic development if the proceeds of growth are equitably distributed.” So the question of distribution is also a sine qua non.

**2.2 Theoretical Literature**

This study will focus on growth and expenditure theories in economic literature. It will also extend its review to theoretical propositions relating to capital formation, as well as relevant growth theories.

 **Theories of Fiscal Policy**

**2.2.1 The Keynesian Theory of Fiscal Policy**

Fiscal policy is based on the theories of British economist John Maynard Keynes. Also known as Keynesian economics, this theory basically states that the government can influence macroeconomic productivity levels by increasing or decreasing tax levels and public spending. John Maynard Keynes developed Keynesian theory which calls for government intervention to correct instability. Keynes recommended during the great depression of 1930s that government should increase its spending in order to prime the pump of the economy at the same time he urged the government to decrease taxes in order to give households more disposable income with by which they can buy more products. Keynes also advocated the opposite positions during times of rapid inflation as presented in his book called The General theory of Employment, Interest and Money, published in 1936.

 **2.2.2 Savers-spenders Theory of fiscal policy**

This theory was propounded by Mankiw (2000) is the new theory developed to explain the behavioral of fiscal policy in the economy. The theory is based on some prepositions Mania (2000). One of the propositions is that temporary tax changes have large effects on the demand on goods and services. This proposition states that the higher the take home pay that spenders received will be offset by high tax payment or by lower tax refunds. The implication is that consumers will realize they their lifetime resources were unchanged and therefore should have the extra take home pay to meet the upward tax liability (Eze and Ogij, 2013) Ibi, Ajaude and Nkamare (2016).

**Theories of Economic Growth**

 The following growth theories are reviewed:

**2.2.3 Harrod- Domar Growth Model.**

 According to this theory, investment is considered fundamental in the process of economic growth. Investment creates income and also increases the capital stock in an economy hence, leading to an increased production capacity of the economy. The theory often referred to as the AK model is based on the liner production function with output given by the capital stock K times a constant, labelled A. In order to grow, new investments representing net additions to the capital stock are necessary. In order to grow, an economy must be able to save and invest a certain proportion of their GDP. The Harrod-Domar or AK model was separately developed by Roy Harrod (1948) and Evsey Domar (1946). Harrod–Domar model describes the economic mechanism by which more investment leads to more growth. According to the simple Harrod-Domar growth model, the tricks of economic growth and development are simply a matter of increasing savings and investment. The Harrod-Domar growth model depicts the functional economic relationship in which the growth rate of gross domestic product(G) depends directly on the national net savings rate and inversely on the national capital output ratio (k) i.e. G=s/k. If an economy can raise the savings ratio in the growth equation, we can also raise the rate of growth of national income. Thus according to this theory or the capital bottle-neck theory, the obstacle to development is the relatively low level of capital formation in poor countries. For an economy to grow and develop it must seek to increase domestic saving and obtain external financing. Domestic savings and foreign capital must be mobilized to generate new investment in fiscal capital goods and services and build up the stock of human capital (managerial skill) through investment in education and training. In view of the capital fundamentalists, capital formation is the key to growth and this has been found evident in development strategies and plans of many nations both at present and in the past. Capital shortage is widely judged to be the single most important barrier to accelerated economic growth and development and a heavy premium was placed on friendly development plans that reflected this point of view. It was perceived that the best development plans were the ones that could show initial capital requirement and a need for early injection of foreign capital especially foreign aid. It was thought that large initial contribution of aid would generate new flows of domestic savings and reduce aid requirement in long run.

**2.2.4 Traditional Neoclassical Growth Theory.**

This theory is an expansion of the Harrod-Domar formulation. The neoclassical growth model of Solow and Swan (1957) provide a conventional framework for analyzing economic growth as it seeks to understand the determinant of long-term economic growth rate through accumulation of factor inputs such as physical capital and labour. The traditionalist added a third variable, technology, to the growth model. According to this model, the role of technological change is very crucial, even more important than the accumulation of capital. According to the theory, output growth results from one or more of three factors; increase in labour quantity and quality, increase in capital, and improvements in technology. Closed economics with lower saving rates grow slowly in short run and achieve a lower per capita income. While in an open economy, where returns on investments are higher, will experience higher income levels as capital flows from economies where capital-labour rations are lower. In addition, openness is said to encourage greater access to foreign production ideas that can raise the rate of technological progress, while a closed economy will retard growth.

**2.2.5 Endogenous Growth Theory.**

The endogenous growth economist stresses the need for government and private sector institutions to encourage innovation, by creating the right economic environment for individuals and businesses thrive on innovations. The main points of the endogenous growth theory are; Technological progress should not be taken as a constant in growth model. Government policies can raise a country’s growth rate by encouraging competition in the markets and helping to stimulate product and process innovation. Protection of private property rights and patents, as a means of incentives to encourage businesses and entrepreneurs engage in research and development. Thus, Investment in human capital is an essential ingredient for a long-term growth, government policy should encourage entrepreneurship. It maintains that economic growth is primarily the result of endogenous and not exogenous factors i.e. investment in human capital, innovation, and knowledge are significant contributors to economic growth. This theory is often attributed to Romer (1986) who observed the classical and neoclassical theories as an over simplification of what is really a complex process. Romer in his 1986 paper ignores physical capital but only considers knowledge (human capital) in explaining growth. The general form of his model can be written as:

Y = A(R) f (R j, K j, L j) ………………………… (\*)

Where:

R j, K j and L j are respectively stock result from research and development expenditure by firm j; physical capital of firm j; and labor input of firm j. A(R) is the aggregate stock of knowledge. Any private research effort will have a spillover effect for the public stock of knowledge A(R). This type of model can explain why countries experience different growth rate. A country with initial higher level of (human) capital experiences a higher rate of growth leading to a higher rate of growth of capital income because such a country is more experience through learning by doing.

**Macroeconomic Theories.**

 The role of economic policy in the achievement of macroeconomic objectives has been extensively dealt with in Keynesian analysis of an activist macroeconomic policy.

 **2.2.6 The Keynesian analysis** leads to the conclusion that demand management policies can and should be used to improve macroeconomic performance. An activist macroeconomic policy involves setting monetary and fiscal variables in each time period at the values which are thought necessary to achieve the government’s objectives. A basic premise of Keynesian economics is that the private sector is inherently unstable. It is subject to frequent and quantitatively important disturbances in the components of aggregate demand. It is the task of counter cyclical or stabilization policies to offset these private sector disturbances and so keep real output close to its market – clearing equilibrium time path. Activist stabilization policy can take two forms: it can either be discretionary or determined by some feedback rules which relate policy to current and lagged output. Discretionary policy involves the government or other authorities, such as the Central Bank, deciding in each period what the appropriate policy response should be, given current circumstances. A feedback policy rule would establish some fixed formula for deciding what values the policy variables should take. This formula would remain unchanged over a considerable time span. An example of such a policy rule is one which states that the money supply is expanded at a rate equal to some fixed proportion, λ, of the deviation of current and lagged output from its market clearing equilibrium level. In contrast, a discretionary policy involves the authorities being able continually to vary their choice of λ and other policy parameters. (Levacic and Rebman, 1976).

The broad objectives of Keynesian macroeconomic policy are not in dispute, these objectives are full employment, a stable price level, the absence of significant deviations of output from its equilibrium time path, a satisfactory rate of economic growth, an equitable distribution of income, and balance of payment equilibrium. There exist, however, differing opinions, regarding the priorities accorded to these objectives. In fact, there is an even greater divergence of views on the means by which such objectives can be m actualized. Keynesian activist policy has come under increasing attack from the monetarist and classical schools, which regard the private sector as inherently stable. They do not deny that random disturbances occur in the private sector but they do not think that these are either large or further amplified by quantifying adjustments. Aggregate supply shocks are seen to be equally significant as the aggregate demand shocks emphasized by Keynesian. The private sector adjusts via relative price changes to such disturbances quite adequately, so active stabilization policy is not required. Furthermore, it (stabilization policy) may, if implemented increase rather than diminish fluctuations in output and employment. Nevertheless, stabilization policy requires that policy makers can determine feasible targets, have a reasonable knowledge of the workings of instrumental variables and can effectively control the instrumental variables. The targets are those variables for which the government seeks desirable values. The targets are set with a view to maximizing social welfare. Instrumental variables, however, are those Variables which the government can manipulate to achieve its economic objectives. Instrumental variables are necessarily exogenous variable as the government must be able to determine their values independently of the other variables, whereas tax revenues could be seen as instrumental variable but in the real sense of the phrase they are not since their values are determined not only by the tax rates set by the government but also by the level of national income.

 **2.2.7 Lord Keynes and the Great Depression Experience;** when the economies of the world were mired in the deep and prolonged recession of the 1930s known as the Great Depression, British Economist John Maynard Keynes, later Lord Keynes, declared that governments should increase spending and cut taxes to boost their economies. This was considered heretical since the prevailing view at that time was that a market economy would recover on its own, automatically, without government action. Keynes, in contrast, argued that an economy could languish indefinitely with high unemployment if aggregate demand is inadequate. Keynes contended that monetary policy was powerless to boost the economy out of a depression because it depended on reducing interest rates, and in a depression interest rates were already close to zero. Increased government spending, on the other hand, would not only boost demand directly but would also set off a chain reaction of increased demand from workers and suppliers whose incomes had been increased by the government’s expenditure. Similarly, a tax cut would put more disposable income in the wallets of consumers, and that too would boost demand. Keynes contended, then, that the appropriate fiscal policy during periods of high unemployment was to run a budget deficit. These ideas flew in the face of the conventional wisdom that budget deficits were always bad. The governments of Britain and the US did not embrace the policies advocated by Keynes and instead continued to try to balance their budgets until the outbreak of World War II. His ideas had an enormous impact, however, on the field of macroeconomics after the war and, to some extent, on actual fiscal Policy. Keynesian fiscal policy, the management of government spending and taxation with the objective of maintaining full employment, became the Centre piece of macroeconomics both in academic research and in the public debate over national policy. The Employment Act of 1946 committed the federal government in the US to use fiscal policy "to promote maximum employment, production, and purchasing power."

 **2.2.8 US Experience with Fiscal Policy;** at the high tide of belief in Keynesian fiscal policy in the 1960s, some macroeconomists claimed that we had acquired the ability to "fine tune" the economy, keeping it humming along at full employment. The 1970s and 1980s, however, saw a renewal of interest in the role of money in economic fluctuations and a decline in the perception of fiscal policy as an important tool of macroeconomic policy among both economists and the public. Why did this drastic reassessment of fiscal policy occur? Certainly one factor is simply that the US Congress has proved to be too slow-moving to take significant action on spending or taxation in the short time frame of recent recessions. The most notable achievement of Keynesian fiscal policy was the tax cut enacted under President Kennedy to combat the recession of 1959-60. Even then, the cut came after the economy was already showing signs of recovery. Since that time, Congress seems to have become more prone to deadlock, so the idea of Congress acting promptly to execute counter-cyclical fiscal policy has become less credible. The Reagan tax cut of 1981 was motivated not by the idea that it would stimulate demand, but by the idea that lower taxes would enhance incentives to work and invest. Further, the emergence of a chronic deficit of alarming proportions during the last decade, and political pressures to contain it, have made it practically impossible for Congress to conduct discretionary fiscal policy. Any proposed act of Congress that had the intention of increasing the deficit would surely be met with a firestorm of opposition. Indeed, the recent recession of 1990-91 was notable for the almost complete absence of any inclination in Congress towards fiscal action to combat it.

**2.2.9 Government Spending and Tax Multipliers;** The followers of Keynes believed that fiscal policy can be a powerful lever to move the economy because the effect of an increase in spending or a cut in taxes would be multiplied by stimulating additional demand for consumption goods by households. Imagine that in the midst of a recession government disburses ₦100 million for new highway bridge construction. Idle workers and machines will be put to work on bridge construction, resulting in an increase in GDP of ₦100 million over the period of construction. In addition, construction workers and firm owners will find that their incomes have risen by ₦100 million (since GDP always represents both spending on one hand and income on the other.) These people will spend at least part of that ₦100 million on additional consumer goods and services, but they will also save some of the additional income. This sets off a chain reaction in which additional spending boosts the income of sellers of goods and services who, in turn, spend more on other goods and services. Similarly, if government enacted a tax cut, households would find themselves with additional disposable income. Their inclination to spend a portion of that additional income would set off a chain reaction of spending, increased incomes, and more spending. The key element in this process is that households respond to having additional disposable income by spending at least a part of it on additional consumption. The fraction of an additional naira of disposable income that is spent on additional consumption is called the marginal propensity to consume. The term "marginal" is used in economics to mean the response to an incremental change, so it is being used in the sense of "at the edge" rather than "unimportant."

**2.2.10 The Marginal Propensity to Consume and the Multiplier;** let’s build a simple model to see how the marginal propensity to consume determines the impact of a change in government spending on GDP. We begin with a hypothetical ₦1 increase in government purchases of goods and services in an economy which consists of households having identical marginal propensity to consume which we will abbreviate MPC. To simplify the model, households in our model provide goods or services directly to the government, so we can imagine that the government pays the ₦1 to one, say household A1. Now household A1 will spend the fraction equal to its MPC of that additional income to purchase consumption goods, and for simplicity we suppose that the purchase is made directly from household A2. Seeing its disposable income rise by ₦1 times MPC, household A2 will purchase additional consumer goods worth MPC times that amount, say from household A3. We see that the additional consumption spending at each step of this chain reaction is MPC times the amount at the prior step.

**2.2.11 Interaction between Fiscal Policy and Economic Growth;** On the Interaction between fiscal policy and economic growth it is observed that the potential effects of fiscal policy on long-term growth have also generated substantial attention (Tanzi and Zee, 1996). Most recently, the burgeoning work in the field of endogenous growth suggests that fiscal policy can either promote or retard economic growth as investment in physical and human capital both of which can be affected by taxation and government expenditures can affect steady-state growth rates (Chamley, 1986; Barro, 1990, 1991; King and Rebelo, 1990; Jones et al., 1993; Barro and Sala-I` Martin, 1995; Mendoza et al., 1997). In both strands of the literature, the effect of fiscal policy on growth can be nonlinear. This may occur, for example, because the private sector’s response to fiscal policy may be nonlinear, implying a complex relationship between the size and the composition of public spending and revenues and growth. Giavazzi et al. (2000), for example, find that in industrial and developing countries the nonlinear effects of fiscal policy on national savings tend to be associated with large and persistent increases in the primary deficit. There are good reasons to believe that for some (but not all) low income countries fiscal contractions may also be expansionary. As in the industrial countries, expansionary contractions are more likely to be observed in countries that have not yet achieved a degree of macroeconomic stability. For these countries, the overriding imperative of reining in inflation and achieving low budget deficits are such that increases in public spending even if potentially productive may not have a salutary effect on growth. By contrast, countries in a ‘‘post-stabilization’’ phase can exercise more choice over expenditure priorities, including by allocating resources to important structural reforms, such as the decompression of the civil service pay scale. In these countries, higher public spending even if it results in higher deficits could raise, rather than contract, economic activity.

**2.3 Empirical Literature**

 For this study, the empirical review contains foreign and domestic studies on the topic under study. The empirical works are arranged in ascending order of year in which they were carried out as follows;

 In Nigeria, Ekpo (1994) studied the contributions of public expenditure to economic growth in Nigeria over the periods 1960 to 1992. The findings from the study provided support for fiscal policy-led growth through crowd-in private investment resulting from government expenditure on infrastructure.

Nurudeen and Usman (2010) analyzed the impact of government expenditure on economic growth in Nigeria over the period 1970 – 2008. The paper revealed that government total capital expenditure, total recurrent expenditures and expenditure on education have negative effect on economic growth while expenditures on health, transport and communication are growth enhancing.

Dauda (2010) examined the effect of investment spending in education on economic growth in Nigeria using thirty-one (31) years’ time series data from 1977 to 2007. The study employs co integration and error correction techniques. The result shows positive and significant effect of educational expenditure on economic growth. From the foregoing, we are able to at least establish that there exists a relationship between fiscal policy and economic growth. But on the direction and sign of the relations, it will suffice me to pronounce it yet inconclusive till we conclude the research. Kneller et al. (1999) found that public expenditure and taxation only affected growth if they were productive and distortionary, respectively; productive government expenditure was found to positively affect growth, whereas distortionary taxation was found to be harmful for growth. With this distinction they argued that both sides of the government budget should be considered in estimating the impact of fiscal policy on growth, as their financing offset the growth-enhancing effects of productive expenditure. Studying the relationship between government expenditure and economic growth is becoming of crucial importance to divide government activities in several categories and methodologies.

Zagler and Dürnecker (2003) surveyed the literature on fiscal policy and economic growth. They presented a unifying framework for the analysis of long run growth implications of government expenditures and revenues. They found that the level of education expenditure and the growth rate of public infrastructure investment both exhibited a positive impact on the growth rate of the economy.

Tanzi and Zee (1997) examined systematically the various ways that the main fiscal instruments (tax policy, public expenditure policy, budget policy) influenced economic growth through their impact on the determinants of growth.

Yasin (2003) studied the relationship between government expenditure and economic growth. His studies re-examined the effect of government spending on economic growth using panel data set from Sub-Saharan Africa. The results from both estimation techniques indicated that government spending, trade-openness, and private investment spending all had positive and significant effect on economic growth.

 Biswas and Ram (1986) used data from 55 countries over the period 1960-1977 and found that defenses expenditure has no significant effect on output growth.

 Abu-Bader and Abu-Qarm (2003) used multivariate co integration and variance decomposition techniques to investigate the causal relationship between government expenditure and economic growth. Cross section growth regressions had been used to assess the relationship between defense expenditure and economic growth. They found that when considering overall government expenditure, there was bi-directional causality between government spending and economic growth with a negative long run relationship in the cases of Israel and Syria, and a unidirectional negative short-run causality from economic growth to government spending in the case of Egypt.

Landau (1986) examined the possibility that the impact of defense expenditure on output growth was nonlinear, with relatively low levels of defense expenditure enhancing output growth, but relatively low levels of defense expenditure inhibiting growth. He found that this was in fact the case, with a positive relationship between defense expenditure and output growth holding until defense expenditure reached about 4 percent of GDP and a negative relationship taking over at about 9 percent of GDP. For sub-samples restricted to Latin America and Africa, he found a significant, positive relationship between defense expenditure and the share of government education and health expenditure in GDP.

Hassan et al. (2003) stated that there were essentially four arguments showing military expenditure retarding economic growth. First, higher defense expenditures could crowd out both public and private investment that might be more growth-oriented and need-based than those of defense spending. This crowding out of essential investment might have an adverse impact on the long run economic growth. Second, defense expenditure can cause balance of payment problems if hard-earned foreign exchanges were used to purchase arms and defense hardware. Third, defense might inhibit growth by diverting resources from the export sector, which was often considered an engine of growth. Finally, the defense sector limited growth through inefficient bureaucracy and excess burdens created by taxes necessary to finance military spending. Since defense spending could cause both positive and negative effects, its final impact on growth would depend on the strength of the opposing forces.

Devarajan et al. (1996) investigated the relationship between the compositions of public expenditure and economic growth. Using a simple, analytical model, they derived conditions under which a change in the mix of public spending could lead to a higher steady-state growth rate for the economy. Based on the model, their empirical results suggested that expenditures that were normally considered productive could become unproductive if there was an excessive amount of them. Glomma and Ravi Kumar (1994) considered the relationship between government expenditure on infrastructure or education and economic growth, and the implication of their models’ yield depended on how the expenditures were being conceived and how they looked at the effects of taxes that had to be raised to finance the expenditure. Therefore, the general implications that seem to follow from these models are that one expects partially a positive correlation of growth with productive expenditure (e.g. Infrastructure and education) and partially a negative correlation with Government consumption and distortionary taxes.

 Also, Abdullah et al. (2008) used the Padroni Co integration method to establish a long run relationship between fiscal policy and economic growth. They found a positive and statistically significant impact of health and education expenditure, aggregate of government expenditure and aggregate of fiscal policy on real per capita GDP. They also found that the defense expenditure, distortionary taxation and budget balance are significantly and negatively related to real per capita GDP.

Barro and Sala-I-Martin (1995) found that government expenditure in education, health, and other services could contribute indirectly towards raising the marginal productivity of private sectors via their contribution on human capital accumulation. Chen and Gupta (2006) examine the government expenditure in health and education and other structural factors that may have an effect on economic growth. They apply the GMM estimation technique which is the set explanatory variables included in the growth regression specification are based on the endogenous growth theory and can all be considered to be important determinants of economic growth. The results show that the coefficient on government expenditure in health and education is negative but is small in absolute value. Many other studies on the relationship between fiscal policy and growth were conducted before the relevant endogenous growth models were developed, i.e. from the early 1980s.

Summers-Heston data, while Kormendi-Meguire (1985) using cross section/time series data for 47 countries found no statistically significant relation of the same variables for the post-World War II period. Barro (1989), with data from 98 countries in the post- World War II period, found that government consumption decreases per capita growth, while public investment does not affect growth. Levine-Renelt (1992) found that most results from earlier studies on the relationship between long-run growth and fiscal policy indicators are fragile to small changes in the conditioning set.

Easterly-Rebello (1993) used cross-section data for 100 countries for 1970-1988 and panel data for 28 countries for 1870-1988. They found that public transportation, communication and educational investment are positively correlated with growth per capita and aggregate public investment is negatively correlated with growth per capita, although they admitted that many fiscal policy variables are highly correlated with initial income levels and fiscal variables are potentially endogenous.

Cashin (1995) estimated a positive relationship between government transfers, public investment and growth and a negative one between distortionary taxes and growth from panel data for 23 developed countries between 1971 and 1988. Devarajan et al (1996) showed that public current expenditures increase growth, while government capital spending decreases growth in 43 developing countries over 1970-1990. Kneller et al. (1999, 2001) showed that the biases related to the incomplete specification of the government budget constraint present in previous studies are significant and after taking them into account, they found for a panel of 22 OECD countries for 1970-1995 that: Distortionary taxation hampers growth, while non-distortionary taxes do not. Productive government expenditure increases growth, while non-productive expenditure does not and long-run effects of fiscal policy are not fully captured by five-year averages commonly used in empirical studies.

Poot (2000), in a survey of published articles in 1983-1998 did not find conclusive evidence for the relationship between government consumption and growth, while he found empirical support for the negative effect of taxes on growth. Also, he reported a positive link between growth and education spending, while the evidence on the negative growth impact of defense spending is moderately strong. Finally, Poot presented evidence of a robust positive association of infrastructure spending and growth.

 Easterly (2005) found a significant growth effect of budget balance, which disappeared when extreme observations were excluded from the analysis. It therefore seems that there is widespread non-robustness of coefficient signs and statistical significance even within similar specifications for similar variables. There are some possible explanations for these differences. The most important, in our opinion, is the absence of a generally accepted theoretical framework to guide the empirical research (Galor, 2005).

Besides these, there might be correlation of fiscal variables with initial GDP (Easterly-Rebello, 1993). Furthermore, the linear structure imposed on most empirical models is convenient but not necessarily realistic and consistent with the underlying theory (Liu-Stengos 1999, Kalaitzidakis, 2001). In addition, examination of the sample searching for outliers as well as testing for parameter heterogeneity is not conducted in most studies. Other potential problems include serial correlation in the error terms.

Fuente (1997) examined the impact of public expenditures and taxation on economic growth of 21 OECD countries from 1965 to 1995. The results of the study could not provide evidence in support of fiscal policy-led growth. Specifically, public expenditures tend to crowd-out private investment leading to reduction in disposable income and the incentive to save.

Ghali and Al-Shamsi (1997) examined the causal links between fiscal policy (government expenditure) and economic growth (GDP) from 1973 to 1995 in U.A.E using a co integration and error-correction framework. The results provided evidence in support of existence of co integration between government expenditure and GDP. The results of the causality tests showed that causation runs from government expenditure to GDP.

Mansouri (2008) studied the relationship between fiscal policy and economic growth in Egypt, Morocco and Tunisia. The spans of data for each country are: 1970-2002 for Morocco, 1972-2002 for Tunisia and 1975-2002 for Egypt. The empirical results showed that 1 percent increase in public spending raised the real GDP by 1.26 percent in Morocco, 1.15 percent in Tunisia and 0.56 percent in Egypt. The results also indicated existence of long-run relationships for all the three countries.

Enache (2009) investigated the connection between fiscal policy and economic growth in Romania using Forecasted time series data which covered periods between 1992 and 2013. The empirical results indicated weak evidence for the positive impact of fiscal policy on economic growth. The study concluded that government authorities could use fiscal policy to affect economic growth in an indirect manner. Karimi and Khosravi (2010) investigated the impact of monetary and fiscal policies on economic growth in Iran using autoregressive distributed approach to co integration between 1960 and 2006. The empirical results indicated existence of long-run relationship between economic growth, monetary policy and fiscal policy. The results further revealed a negative impact of exchange rate and inflation (as proxies for monetary policy), but a positive and significant impact of government expenditure on growth.

* 1. **Summary and Limitation of Previous Studies.**

 In sum, the relationship between the fiscal policy stance and growth will differ across countries depending on their initial fiscal conditions. This also as important implications for the econometric specifications used to link fiscal policy and growth. Another important issue to be considered in the analysis is the nexus between the composition of fiscal deficit financing and growth. Many studies found that fiscal consolidations can have an indirect impact on private investment (and thus growth) by affecting the level of aggregate demand and monetary variables. Deficits largely financed by domestic sources may also lead to inflationary pressures. High levels of inflation have been found to reduce growth and can lead to macroeconomic and financial instability (Fischer, 1983; Sarel, 1996; Khan and Senhadji, 2001). In summary, the theoretical framework underlying the empirical analysis carried out in this research project assumes that fiscal policy variables such as government expenditure, tax revenue and deficit financing can affect the level of productivity in the economy, but didn’t the extent of the impact. This therefore calls for further empirical investigation just as this study aims. The research gap also draws from the fact that few studies studied the causality of fiscal policy and economic growth inNigeria

 **CHAPTER THREE**

**METHODOLOGY**

This research work is conducted employing an econometric methodology. Economic, statistical and econometric tools were used in analyzing and presenting data. Ordinary Least Squares (OLS) estimation technique would be used in carrying out the analysis. This is because of the simplicity in its computational procedure coupled with its interesting BLUE (Best Linear Unbiased Estimator) properties and its assumptions.

 Estimators from this methodology have both numerical and statistical properties. Gujarati (2009) Davidson and Mackinnon (1993) put the numerical properties as “those properties that hold as a consequence of the use of ordinary least squares, regardless of how the data were generated.”

This study will ascertain the impact of FDI on the economic growth of Nigeria over the specified period of 1981-2015 and also check for long-run equilibrium relationship (co-integration) among the variables.

The research will include an evaluation that would take into cognizance economic/theoretical a priori tests, statistical test of significance and econometric or second order tests. E view 8 regression software package is employed in this analysis to test non violation of the basic assumption of the OLS model.

**3.1 Theoretical Framework**

Although theories linking fiscal policy to economic growth are many, however, the relationship between fiscal policy and economic growth can be established employing Keynesian theory, when the economics of the world were mired in the deep and prolonged recession of the 1930s known as the Great Depression, British Economist John Maynard Keynes, later Lord Keynes, declared that governments should increase spending and cut taxes to boost their economies. This was considered heretical since the prevailing view at that time was that a market economy would recover on its own, automatically, without government action. Keynes, in contrast, argued that an economy could languish indefinitely with high unemployment if aggregate demand is inadequate. Keynes contended that monetary policy was powerless to boost the economy out of a depression because it depended on reducing interest rates, and in a depression interest rates were already close to zero. Increased government spending, on the other hand, would not only boost demand directly but would also set off a chain reaction of increased demand from workers and suppliers whose incomes had been increased by the government’s expenditure. Similarly, a tax cut would put more disposable income in the wallets of consumers, and that too would boost demand. Keynes contended, then, that the appropriate fiscal policy during periods of high unemployment was to run a budget deficit. These ideas flew in the face of the conventional wisdom that budget deficits were always bad. The governments of Britain and the US did not embrace the policies advocated by Keynes and instead continued to try to balance their budgets until the outbreak of World War II. His ideas had an enormous impact, however, on the field of macroeconomics after the war and, to some extent, on actual fiscal Policy. Keynesian fiscal policy, the management of government spending and taxation with the objective of maintaining full employment, became the center piece of macroeconomics both in academic research and in the public debate over national policy. The Employment Act of 1946 committed the federal government in the US to use fiscal policy "to promote maximum employment, production, and purchasing power."

**3.2 Research Design**

For this study, the research design adopted is the Ex Post Facto. The Expo Facto design was used because the study is a quasi-experimental study examining how independent variables affect a dependent variable.

**3.3 Model Specification**

This study shall build a multiple regression model and make use of econometrics procedure in estimating the relationship between the economic variables.

The functional form of the model is specified as:

RGDP= F (TAX, CAPEX, RECEXP, DOMDEBT)……….………… (3.1)

The stochastic model is specified as:

RGDPt = β0 + β1TAXt+ β2CAPEXt + β3RECEXPt + + β3DOMDEBTt µt…… (3.2)

Where

RGDP= real gross domestic product i.e. (constant price GDP)

F= functional relationship

TAX= Total federally collected revenue

CAPEX= Capital expenditure

RECEXP = Recurrent expenditure

DOMDEBT = Domestic debt

t = time period

β0= Constant

β1, β2, β3, are the relative slope coefficients and partial elasticities of the parameters.

µt = stochastic error term

**3.4 Method of Evaluation**

The estimated result will be evaluated subject to three criteria.

1. Preliminaries test

2. Economic criteria

3. Statistical criteria

4. Econometrics criteria

**3.4.1 Preliminary Test**

**3.4.1.1 Stationarity (Unit Root) Test:**

The importance of this test cannot be over emphasized since the data used in the estimation are time-series data. In order not to run a spurious regression, it is worthwhile to carry out a stationary test to make sure that all the variables are mean reverting, that is, they have constant mean, constant variance and constant covariance. In other words, that they are stationary. The Augmented Dickey-Fuller (ADF) test was used for this analysis since it adjusts for serial correlation.

The model is specified as follows

$$∆Y\_{t}=β\_{1}t+δY\_{t-1}+\sum\_{i=1}^{m}α\_{i}∆Y\_{t-i}+ε\_{t}------------- 3.3$$

**Decision Rule:** If the ADF test statistic is greater than the MacKinnon critical value at 5% (all in absolute term), the variable is said to be stationary. Otherwise it is non stationary.

**3.4.1.2 Co integration Test**

Econometrically speaking, two variables will be co integrated if they have a long-term, or equilibrium relationship between them. Co integration can be thought of as a pre-test to avoid spurious regressions situations (Granger, 1986). As recommended by Gujarati (2004), the ADF test statistic will be employed on the residual.

The model is specified as follows

$$∆RGDP\_{t}=β\_{0}+β\_{1}∆TAX\_{t}+β\_{1}∆CAPEX\_{t}+β\_{1}∆RECEXP\_{t}+β\_{1}∆DOMDEBT\_{t}..3.5$$

**Decision Rule:** If the ADF test statistic is greater than the critical value at 5%, then the variables are co integrated (values are checked in absolute term).

**3.4.1.3 Error Correction Mechanism**

If there exist a long run relationship (co-integration) among the time series variables, the Error correction mechanism will be estimated to know the rate at which the dependent variable returns to equilibrium to the independent variable after some levels of variations i.e. to derive the numerical value of the magnitude of the short run dynamics or disequilibrium.

The error correction model is specified as follows

**∆RGDP∊t=** $∝$**0 +** $∝$**1 ∆TAXt+**$∝$**2 ∆CAPEXt +**$∝$**2 ∆RECEXPt +** $∝$**DOMDEBT+∊t**

**3.4.2 Economic Criterion Test (A Priori Test)**

These are determined by the principles of economic theory and refer to the sign and size of the parameters of economic relationship.

The expected signs for the parameters associated with the various variables are shown below

**Table 3.2 A priori Expectation**

|  |  |
| --- | --- |
| **VARIABLES** | **EXPECTED SIGN** |
| TAX | +VE |
| CAPEX | +VE |
| RECEXP | -VE |
| DOMDEBT | -VE |

**3.4.3 Statistical Test of Significance**

These are determined by the statistical theory and aimed at evaluating the statistical reliability of the estimates of the parameters of the model, the most widely used statistical criteria is the square of correlation coefficient (coefficient of determination R2), T-Test and F-Test of significance.

**3.4.3.1 Test for Goodness of Fit**

The coefficient of multiple determinations (R2) is used to determine the proportion of variation dependent variable that is attributable to variation in explanatory variable. The value of R2 ranges between 1 and 0 (ie 0≤R2≤1). The closer to 1 the better the fit, otherwise the worse the fit.

**3.4.3.2 t-Test of significance**

 The student t-ratio will be used to test the individual statistical significance of the regression co-efficient. A two-tail test is conducted at 5% level of significance and n-k degree of freedom (df), where n is the number of observation and K is the number of parameter(s) estimated.

**Decision Rule:**

 The computed (t\*) will be compared with the critical t-value (t0.025). If **t\*>t0.025**, the Ho will be rejected and H1 will be accepted. Otherwise, Ho is accepted and H1 rejected.

**3.4.3.3 f-Test of Significance**

 F-test statistics is used to test the overall statistical significance of the independent variables. A one-tail test will be conducted at 5% level of significance and (V1/V2) degrees of freedom. Where;

V1= degree of freedom (df) for the numerator: v1=k-1.

V2= degree of freedom (df) for the denominator: v2=n-k.

**Decision Rule:**

If the **F\*>F0.05,** we will reject the null hypothesis and accept the alternative,

otherwise, the alternative hypothesis H1 will be rejected and null hypothesis H0 be accepted.

**3.4.4 Econometrics test**

**3.4.4.1 Autocorrelation Test:** The aim of this test is to examine whether the errors corresponding to different observations are serially correlated or not. Uncorrelated errors are desirable. The Durbin – Watson (D-W) statistics at 5% will be used to test for the presence of autocorrelation problem. The region of no autocorrelation remains:

du< d\* < (4-du)

 Where:

du = Upper Durbin – Watson

d\* = Computed Durbin-Watson

**Decision Rule:**

If the computed value of Durbin-Watson lies within the no autocorrelation region, it means there is no presence of autocorrelation problem. But if the Durbin-Watson computed value lies outside the regions there is the presence of autocorrelation problem. If it occurs, to avoid the spurious regression associated with it, we will employ the Heteroscedasticity Autocorrelation Correction (HAC) to remove its influence in the model.

**3.4.4.2 Multi collinearity Test.**

In this study, the test for linear relationship among the variables used in the model would be performed. This is in line with Assumption of the Classical Linear Regression Model (CLRM) of “no high or perfect multi-collinearity”. The essence of this is to see if there is high collinearity among variables or not. The correlation matrix will be used for this test. If the correlation coefficient between two variables exceeds 0.8, then such variables has high multi- co linearity test.

**3.4.4.3 Normality** **test**: This study will carry out a normality test to check if the residuals, a proxy for stochastic error term follows normal distribution or not.

The normality test that would be used in this study is Jarque-Bera (JB) test of normality.

**Decision Rule**

For the residual to be normally distributed, the K value should be drawing close to or exactly three (3) and should draw close or exactly zero (0), thus making the JB value close to or equal to zero (0), which is the condition for normal distribution.

**3.4.4.4 Heteroscedasticity Test.**

One of the assumptions of the random variable Ut is that its probability distribution should be constant over all observations of Xi, that is, the variance of each disturbance term is the same for all values of the explanatory variables. The aim of this test is to see whether the error variance of each observation is constant or not. Non-constant variance can cause estimated model to yield a biased result. White’s general heteroscedasticity test would be adopted for this purpose (Gujarati et.al. 2012).

**3.4.4.5 Granger Causality Test:** Although regression analysis deals with the dependence of one variable on the other, it does not necessarily imply causation. In other words, the existence of a relationship between variables does not prove causality or the direction of influence (Gujarati, 2004). The essence of causality analysis, using the granger causality test, is to actually ascertain whether a causal relationship exists between two variables of interest.

**3**.**5 Data Required and Sources**

The data required for this study are secondary time series data on government tax (TAX), federal government capital expenditure (CAPEX), federal government recurrent expenditure (RECEXP), Domestic debt (DOMDEBT) and real gross domestic product (RGDP) ranging from 1981-2015. The data are extracted from the 2016 editions of the central bank of Nigeria (CBN) statistical bulletin.

**3.6 Econometric package used**

The econometric package used for this analysis is E-views 8.0

**CHAPTER FOUR**

**PRESENTATION AND ANALYSES OF RESULT**

This chapter will analyze the results using various economic, statistical and econometric tests. Thus, the earlier posted hypothesis of this study will be tasted based on the empirical results.

**4.1 The Empirical Results**

As the performance of theoretical postulation is no guarantee, but only an indicator of what we may expect in practice, empirical testing of the time series data of the variables is absolutely necessary.

**4.1.1 Unit Root Test Results**

The Augmented Dickey-Fuller (ADF) was used to test for the unit root in the individual variable. The test was done based on the following hypothesis;

H0: variable is non-stationary

H1**:** variable is stationary

The results from the Augmented Dickey-Fuller test for unit root are summarized below.

**Table 4.1: ADF Test result for Unit Root**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **ADF test** **Statistics** | **5% critical** **Value** | **Order of** **Integration** |
| **RGDP** | -6.903471 | -1.951687 | I(1) |
| **TAX** | -2.690040 | -1.954414 | I(0) |
| **CAPEX** | -4.622827 | -3.595026 | I(1) |
| **RECEXP** | -6.354445 | -3.552973 | I(1) |
| **DOMDEBT** | -5.625430 | -1.951687 | I(1) |

In table 4.1 above, the variables, Real Gross Domestic Product, federal government capital expenditure, federal government recurrent expenditure and domestic debt are stationary in first difference whereas federal government tax is stationary at level form.

 However, since all the variables under study are non-stationary at level form, there is need to conduct a co-integration test.

**4.1.2 Co-integration Test Result**

To test for co-integration among the variables, we will carry out ADF test on the regression residuals as proposed by Gujarati (2004). The ADF unit root test on the residuals work with the same decision rule as unit root test.

The co-integration test result is summarized as follows:

**Table 4.2: ADF test result for Co-integration**

|  |  |
| --- | --- |
| Null Hypothesis: ECT has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -4.247817 |  0.0001 |
| Test critical values: | 1% level |  | -2.636901 |  |
|  | 5% level |  | -1.951332 |  |
|  | 10% level |  | -1.610747 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(ECT) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:02 |  |  |
| Sample (adjusted): 1983 2015 |  |  |
| Included observations: 33 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| ECT(-1) | -0.734992 | 0.173028 | -4.247817 | 0.0002 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.360502 |     Mean dependent var | -10.51838 |
| Adjusted R-squared | 0.360502 |     S.D. dependent var | 1098.440 |
| S.E. of regression | 878.4073 |     Akaike info criterion | 16.42393 |
| Sum squared resid | 24691183 |     Schwarz criterion | 16.46928 |
| Log likelihood | -269.9949 |     Hannan-Quinn criter. | 16.43919 |
| Durbin-Watson stat | 1.930753 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

From the result above, the ADF test statistics (-4.247817) is greater than the 5% critical value (-1.951332) in absolute terms. This implies that the residuals are stationary (i.e. the variables are co-integrated or that the linear influence of the independent variables cancels out).

**4.1.3 Error Correction Mechanism Result**

**Table 4.3: ECM Test Result**

|  |  |  |
| --- | --- | --- |
| Dependent Variable: D(RGDP) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:03 |  |  |
| Sample (adjusted): 1983 2015 |  |  |
| Included observations: 33 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| TAX | 0.327338 | 0.087505 | 3.740811 | 0.0008 |
| D(CAPEX) | 0.339251 | 1.518908 | 0.223352 | 0.8249 |
| D(RECEXP) | 1.411152 | 1.367797 | 1.031697 | 0.3110 |
| D(DOMDEBT) | 0.215170 | 1.000659 | 0.215029 | 0.8313 |
| ECT(-1) | -0.288991 | 0.271434 | 1.064682 | 0.2961 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.535272 |     Mean dependent var | 1637.541 |
| Adjusted R-squared | 0.468883 |     S.D. dependent var | 1482.020 |
| S.E. of regression | 1080.064 |     Akaike info criterion | 16.94615 |
| Sum squared resid | 32663050 |     Schwarz criterion | 17.17290 |
| Log likelihood | -274.6116 |     Hannan-Quinn criter. | 17.02245 |
| Durbin-Watson stat | 1.484420 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

From table 4.3 above, the magnitude of the short run disparity is -0.288991, that is to say the degree of the short run dynamics is 28.8991. This shows a relatively low speed of adjustment to equilibrium after a shock.

**Regression Result**

In the regression result, the variables under consideration are real gross domestic product (dependent variable), tax, capital expenditure, recurrent expenditure and domestic debt variables from the result the estimated coefficient value of bo, b1, b2, b3, b4 b4 are 599.0887, 0.274261, 0.535968, -1.790916 and -0.114915 respectively. The regression results are presented as follows:

**Table 4.4 Regression Test Result**

|  |  |  |
| --- | --- | --- |
| Dependent Variable: D(RGDP) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:05 |  |  |
| Sample (adjusted): 1982 2015 |  |  |
| Included observations: 34 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 599.0887 | 222.8708 | 2.688054 | 0.0118 |
| TAX | 0.274261 | 0.081350 | 3.371358 | 0.0021 |
| D(CAPEX) | 0.535968 | 1.381204 | -2.388044 | 0.0308 |
| D(RECEXP) | -1.790916 | 1.004191 | -1.983442 | 0.0450 |
| D(DOMDEBT) | -0.114915 | 0.873972 | -0.131486 | 0.8963 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.630642 |     Mean dependent var | 1581.351 |
| Adjusted R-squared | 0.579697 |     S.D. dependent var | 1495.719 |
| S.E. of regression | 969.6868 |     Akaike info criterion | 16.72688 |
| Sum squared resid | 27268483 |     Schwarz criterion | 16.95134 |
| Log likelihood | -279.3569 |     Hannan-Quinn criter. | 16.80343 |
| F-statistic | 12.37868 |     Durbin-Watson stat | 1.416063 |
| Prob(F-statistic) | 0.000005 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Table 4.5: Result of A prior Test**:

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Expected Signs** | **Observed Signs** | **Results** |
| **TAX** | +VE | +VE | CWES |
| **CAPEX** | +VE | +VE | CWES |
| **RECEXP** | -VE | -VE | CWES |
| **DOMDEBT** | -VE | -VE | CWES |

CWES – conform with expected sign

**4.2 Evaluation of Regression Results**

**4.2.1 Evaluation Based on Economic Criterion**

The observed signs and symbols of the variables are totally in line with the expected signs and symbols. The signs observed for all the independents variables (tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt) are in line with the expected signs.

 The constant term is estimated at 599.0887 which imply that the model passes through the point 599.0887 mechanically, if the independent variables are zero, Real Gross Domestic Product would be 599.0887. (Gujarati and Sangeetha, 2007).

 Tax and capital expenditure both have positive relationships on Real Gross Domestic Product and their estimated coefficient for tax and capital expenditure are 0.274261 and 0.535968 respectively, this implies that if we hold all other variables affecting Real Gross Domestic Product constant, a unit change in tax and capital expenditure will lead to 0.274261 and 0.535968 respectively, increase in Real Gross Domestic Product on the average.

 Also recurrent expenditure and domestic debt have a negative relationship with Real Gross Domestic Product and its estimated coefficient is -1.790916 and -0.114915 respectively, this means that a unit increase in of recurrent expenditure and domestic debt will lead to 1.790916 and 0.114915 decrease in Real Gross Domestic Product on the average.

**4.2.2 Evaluation Based On Statistical Criterion**

**4.2.2.1 R2 –Result and Interpretation**

This subsection applies the R2, the t-test and the f-test to determine the statistical reliability of the estimated parameters. These tests are performed as follows;

The coefficient of determination R2 from the regression result, the R2 is given as 0.630642 this implies that 63.0642% of the variation in Real Gross Domestic Product is being explained by the variations in tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt on the average.

**4.2.2.2 t–Test Result and Interpretation**

The t-test is used to measure the individual statistical significance of the explanatory variables, for a two tailed test, we use (ta/2). We also employ the 95% confidence interval or 5% level of significance (i.e.$α$=0.05) and 35 as our degree of freedom.

From the distribution table, t0.025,35= 2.042

The result of the t-test of significance is shown in table 4.6 below:

The result of the t-test is presented below and evaluated based on the critical value (2.042) and the value of calculated t-statistics for each variable.

**Table 4.6: Result of t-Test of Significance**

|  |  |  |  |
| --- | --- | --- | --- |
| **VARIABLES** | **t-computed (t\*)** | **t-tabulated (ta/2)** | **Conclusion** |
| **TAX** | 3.371358 | 1.960 | Significant |
| **CAPEX** | 2.388044 | 1.960 | Significant |
| **RECEXP** | -1.983442 | 1.960 | Significant |
| **DOMDEBT** | -0.131486 | 1.960 | Insignificant |

Significant (Reject Ho; accept H1),

Insignificant (Accept Ho).

From the t- test result above, For TAX, t\*>ta/2, therefore we reject null hypothesis. Hence tax is statistically significant thus tax is a significant variable to determine economic growth in Nigeria.

 For CAPEX, t\*>ta/2, therefore we accept alternative hypothesis. Hence capital expenditure is statistically significant thus Hence capital expenditure has a significant impact on economic growth.

 For, for RECEXP, t\*>ta/2, therefore we reject null hypothesis. Hence recurrent expenditure is statistically significant thus recurrent expenditure is a significant variable to determine economic growth in Nigeria.

Finally, for DOMDEBT, t\*<ta/2, therefore we accept null hypothesis. Hence domestic debt is statistically insignificant thus domestic debt is not a significant variable to determine economic growth in Nigeria.

**4.2.2.2 Result and Interpretation of F–Test of Significance**

The F-testsignificance is used to measure the statistical significance of the entire regression plane or the joint impact of the independent variables on the dependent variable. The degree of freedom for the numerator (v1) and for the denominator (V2) are given as K-1 and n-k

Where

N= sample size

K= number of parameters including the constant term.

v1=5-1=4, V2=35-5=30, df= (4,30) at 5% level of significance and df= (4,30), f0.05= 2.90 and F\*=12.37868. Since f\*> f0.05, we reject the null hypothesis and conclude that the variables (TAX, CAPEX, RECEXP, DOMDEBT) have joint inference on economic growth. This implies that the entire regression is significant.

**Table 4.7: Result of f-Test of Significance:**

|  |  |  |
| --- | --- | --- |
| **Computed f-ratio value** | **Critical f-ratio value** | **Result** |
| 12.37868 | 2.90 | Statistically significant |

**4.2.3 Evaluation Based on Econometric Criterion**

 In this subsection, the following econometric test is used to evaluate the result obtained from our model: autocorrelation, normality, granger causality test.

**4.2.4 Result and Interpretation of Autocorrelation Test**

Using the durbin-watson statistics, the region of no autocorrelation (positive or negative) is given as follows

du< d\*< (4-du)

du= 1.65

d\*= 1.416063

(4-du)= 4 – 1.65= 2.35

By substitution, the region becomes:

1.65>1.416063< 2.35

**Table 4.7: Result of Autocorrelation Test:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Du** | **d\*** | **4-du** | **Result** |
| 1.65 | 1.4106063 | 2.35 | Autocorrelation present |

The result shows that there is the presence of autocorrelation problem in the model as the computed durbin Watson statistics did not fall within the zero autocorrelation regions.

**4.2.2 Multi-Collinearity Test.**

This test is to check if there is perfect correlation (collinearity) between independent variables. This will be conducted using the correlation matrix. According to Gujarati (2009), if the correlation coefficient between any pair of repressor exceeds 0.8, then there is multi collinearity between the two variables. The result of the correlation matrix is given below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | RGDP | TAX | RECEXP | CAEXP | DOMDEBT  |
| RGDP |  1.000000 |  0.954590 |  0.306487 |  0.920542 |  0.957690 |
| TAX |  0.954590 |  1.000000 |  0.390698 |  0.902341 |  0.891550 |
| RECEXP |  0.306487 |  0.390698 |  1.000000 |  0.405021 |  0.080438 |
| CAEXP |  0.920542 |  0.902341 |  0.405021 |  1.000000 |  0.820268 |
| DOMDEBT |  0.957690 |  0.891550 |  0.080438 |  0.820268 |  1.000000 |

 From the correlation matrix above, there is multi collinearity between RGDP AND RGDP, RGDP and TAX, RGDP and CAEXP, RGDP and DOMDEBT, TAX and RGDP, TAX and TAX, TAX and CAEXP, TAX and DOMDEBT, CAEXP and RGDP, CAEXP and TAX, RECEXP and RECEXP, CAEXP and RGDP, CAEXP and TAX, CAEXP and CAEXP, CAEXP and DOMDEBT, DOMDEBT and RGDP, DOMDEBT and TAX, DOMDEBT and CAEXP, DOMDEBT and DOMDEBT. According to Blanchard in Gujarati (2009), multi-collinearity is essentially a data deficiency problem and sometimes we have no choice over the data we have available for empirical analysis.

* + - 1. **Normality Test Result and Interpretation**

The Normality test will be done using the Jaque-Berra test of normalityJaque-Berra test of normality is hinged on the hypothesis that K is close to or exactly 3 and S is close to or exactly o, thus making the JB value close to or equal to O, which is the condition for normal distribution.

**Decision rule:**

For the residual to be normally distributed, the K value should be drawing close to or exactly three (3) and S should draw close to or exactly zero (0), thus making the JB value close to or equal to zero (0), which is the condition for normal distribution.

**Table 4.6 Result of Normality Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Skewness** | **Kurtosis** | **Jarque-berra** | **Probability** | **Test** |
| 0.703682 | 3.483587 | 3.137252 | 0.208331 | ND |

ND= Normally distributed

**Conclusion:**

From the normality table, the Jaque-Berra does not draw close to zero (0) as stated, in order words the residual are not normally distributed.

**4.2.3.3** **TEST FOR HETEROSCEDASTICITY**

The test is carried out to evaluate the distribution of the error term. It is used to test if the error term has a constant variance. It follows chi-square distribution with degree of freedom equal to the number of regressors in the auxiliary regression excluding the constant. The test adopted is the white general heteroscedasticity. The F-statistics can also be used to verify this assumption and the hypothesis is formulated as follow.

HO: There is no heteroscedasticity

H1: There is heteroscedasticity

 **DECISION RULE**

Following the result, the F Prob value is equal to 0.5598 therefore since this is greater than 5% level of significance, the study accepts HO of heteroscedasticity and conclude that the conditional variance of the error term is constant

|  |
| --- |
| Heteroscedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 0.760367 |     Prob. F(4,29) | 0.5596 |
| Obs\*R-squared | 3.227376 |     Prob. Chi-Square(4) | 0.5205 |
| Scaled explained SS | 2.915661 |     Prob. Chi-Square(4) | 0.5720 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**4.2.3.4 Granger Causality Test: Result and Interpretation**

The essence of causality analysis, using the granger causality test, is to actually ascertain whether a causal relationship exists between two variables of interest.

**Table 4.8: Result of Causality Test:**

|  |
| --- |
| Pairwise Granger Causality Tests |
| Date: 07/21/18 Time: 10:06 |
| Sample: 1981 2015 |  |
| Lags: 2 |  |  |
|  |  |  |  |
|  |  |  |  |
|  Null Hypothesis: | Obs | F-Statistic | Prob.  |
|  |  |  |  |
|  |  |  |  |
|  TAX does not Granger Cause RGDP |  33 |  2.87711 | 0.0731 |
|  RGDP does not Granger Cause TAX |  5.21636 | 0.0119 |
|  |  |  |  |
|  |  |  |  |
|  CAPEX does not Granger Cause RGDP |  33 |  7.04087 | 0.0033 |
|  RGDP does not Granger Cause CAPEX |  0.42831 | 0.6558 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause RGDP |  33 |  0.12477 | 0.8832 |
|  RGDP does not Granger Cause RECEXP |  9.16663 | 0.0009 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause RGDP |  33 |  2.03095 | 0.1501 |
|  RGDP does not Granger Cause DOMDEBT |  4.75636 | 0.0167 |
|  |  |  |  |
|  |  |  |  |
|  CAPEX does not Granger Cause TAX |  33 |  4.19336 | 0.0255 |
|  TAX does not Granger Cause CAPEX |  2.56020 | 0.0953 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause TAX |  33 |  5.52174 | 0.0095 |
|  TAX does not Granger Cause RECEXP |  10.3245 | 0.0004 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause TAX |  33 |  11.9452 | 0.0002 |
|  TAX does not Granger Cause DOMDEBT |  2.76466 | 0.0802 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause CAPEX |  33 |  0.40463 | 0.6711 |
|  CAPEX does not Granger Cause RECEXP |  11.7451 | 0.0002 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause CAPEX |  33 |  1.92821 | 0.1642 |
|  CAPEX does not Granger Cause DOMDEBT |  10.3367 | 0.0004 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause RECEXP |  33 |  1.92569 | 0.1646 |
|  RECEXP does not Granger Cause DOMDEBT |  3.75195 | 0.0360 |
|  |  |  |  |
|  |  |  |  |

The e-views generated granger causality result shows a unidirectional causality relationship flowing from RGDP to TAX, a unidirectional causality relationship flowing from CAPEX to RGDP, a unidirectional causality exist between RECEXP and RGDP, also a unidirectional causality exist between DOMDEBT and RGDP, a unidirectional causality exist between CAPEX and TAX, also a unidirectional causality exist between RECEXP and TAX, from the result, a unidirectional causality exist between DOMDEBT and TAX, also a unidirectional causality exist between RECEXP and CAPEX, a unidirectional causality exist between DOMDEBT and CAPEX, finally, a unidirectional causality exist between DOMDEBT and RECEXP.

**4.3 Evaluation of Research Hypotheses**

**4.3.1 Hypothesis one:** from the t-Test result, the null hypothesis is rejected on three variables (tax, federal government capital expenditure, federal government recurrent expenditure) based on our decision, whereas on the side of domestic debt, null hypothesis was accepted.

**4.3.2 Hypothesis Two:** from the result, tax and capital expenditure have positive relationship on the economic growth which conforms to the expected sign whereas recurrent expenditure and domestic debt have negative relationship on the economic growth which equally conforms to the expected sign.

**4.3.2 Hypothesis Three:** from the Granger Causality Result, all the variable (real gross domestic product, tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt) has a unidirectional causality against each other.

**4.4 Implication of the Results**

From the regression result, tax, federal government capital expenditure and federal government recurrent expenditure has significant impact on the economic growth in Nigeria, it implies that tax, federal government capital expenditure and federal government recurrent expenditure are significant variable to determine economic growth in Nigeria. Whereas domestic debt has no significant impact on the economic growth in Nigeria which implies that domestic debt is not a significant variable to determine economic growth in Nigeria.

 Also, from the Granger Causality Result, all the variable (real gross domestic product, tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt) has a unidirectional causality against each other.

 **CHAPTER FIVE**

**SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION**

**5.1 Summary of Findings**

In other to carry out the analysis of this study a multiple regression model was built to test for the impact of fiscal policy on economic growth in Nigeria from the period of 1981 to 2015. The model incorporates other variables that affect fiscal policy in Nigeria which includes; tax, capital expenditure, recurrent expenditure and domestic debt.

The findings of the study show tax and capital expenditure have positive relationship on the economic growth in Nigeria, whereas recurrent expenditure and domestic debt have negative relationship on the economic growth in Nigeria.

Also, the findings indicate tax, capital expenditure and recurrent expenditure have significant impact on the economic growth in Nigeria whereas domestic debt has no significant impact on the economic growth in Nigeria.

Finally, from the Granger Causality Result, all the variable (real gross domestic product, tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt) has a unidirectional causality against each other.

 **5.2 Conclusion**

From the foregoing, we therefore conclude that tax and capital expenditure has positive relationship on the economic growth in Nigeria whereas recurrent expenditure and domestic debt have negative relationship on the economic growth in Nigeria. We also conclude that tax, capital expenditure and recurrent expenditure have significant impact on the economic growth in Nigeria, whereas domestic debt has significant impact on the economic growth in Nigeria.

Lastly, we conclude that all the variable (real gross domestic product, tax, federal government capital expenditure, federal government recurrent expenditure and domestic debt) has a unidirectional causality against each other.

**5.3 Recommendations**

Owing to the findings of this study, the following recommendations have been proffered by the researcher;

Having seen the positive relationship that exist between tax and capital expenditure on the economic growth in Nigeria, Nigerian government should allocate more money to the capital project knowing very well that it will have a significant positive impact on the economic growth in Nigeria.

Having noted the negative impact recurrent and domestic debt on the economic growth in Nigeria, Nigerian government should reduce her expenditure on recurrent project such as salaries so as to promote increase in economic growth of the country.

Fiscal policy should have backed with execution to avoid making paper policy that will end up not being executed.

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TIME SERIES DATA ON RGDP, TAX, CAPEX, RECEXP AND DOMBET. DATA RANGING FROM 1981-2015

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **YEAR** | **RGDP** | **TAX** | **CAPEX** | **RECEXP** | **DOMDEBT** |
| **1981** | **15258** | **13.29** | **6.57** | **4.85** |  **11.19**  |
| **1982** | **14985.08** | **11.43** | **6.42** | **5.51** |  **15.01**  |
| **1983** | **13849.73** | **10.51** | **4.89** | **4.75** |  **22.22**  |
| **1984** | **13779.26** | **11.25** | **4.10** | **5.83** |  **25.67**  |
| **1985** | **14953.91** | **15.05** | **5.46** | **7.58** |  **27.95**  |
| **1986** | **15237.99** | **12.6** | **8.53** | **7.7** |  **28.44**  |
| **1987** | **15263.93** | **25.38** | **6.37** | **15.65** |  **36.79**  |
| **1988** | **16215.37** | **27.6** | **8.34** | **19.41** |  **47.03**  |
| **1989** | **17294.68** | **53.87** | **15.03** | **25.99** |  **47.05**  |
| **1990** | **19305.63** | **98.1** | **24.05** | **36.22** |  **84.09**  |
| **1991** | **19199.06** | **100.99** | **28.34** | **38.24** |  **116.20**  |
| **1992** | **19620.19** | **190.45** | **39.76** | **53.03** |  **177.96**  |
| **1993** | **19927.99** | **192.77** | **54.50** | **136.73** |  **273.84**  |
| **1994** | **19979.12** | **201.91** | **70.92** | **89.97** |  **407.58**  |
| **1995** | **20353.2** | **459.99** | **121.14** | **127.63** |  **477.73**  |
| **1996** | **21177.92** | **523.6** | **212.93** | **124.49** |  **419.98**  |
| **1997** | **21789.1** | **582.81** | **269.65** | **158.56** |  **501.75**  |
| **1998** | **22332.87** | **463.61** | **309.02** | **178.1** |  **560.83**  |
| **1999** | **22449.41** | **949.19** | **498.03** | **449.66** |  **794.81**  |
| **2000** | **23688.28** | **1,906.16** | **239.45** | **461.6** |  **898.25**  |
| **2001** | **25267.54** | **2,231.60** | **438.70** | **579.3** |  **1,016.97**  |
| **2002** | **28957.71** | **1,731.84** | **321.38** | **696.8** |  **1,166.00**  |
| **2003** | **31709.45** | **2,575.10** | **241.69** | **984.3** |  **1,329.68**  |
| **2004** | **35020.55** | **3,920.50** | **351.25** | **1110.64** |  **1,370.33**  |
| **2005** | **37474.95** | **5,547.50** | **519.47** | **1321.23** |  **1,525.91**  |
| **2006** | **39995.5** | **5,965.10** | **552.39** | **1390.1** |  **1,753.26**  |
| **2007** | **42922.41** | **5,727.50** | **759.28** | **1589.27** |  **2,169.64**  |
| **2008** | **46012.52** | **7,866.59** | **960.89** | **2117.36** |  **2,320.31**  |
| **2009** | **49856.1** | **4,844.59** | **1,152.80** | **2127.97** |  **3,228.03**  |
| **2010** | **54612.26** | **7,303.67** | **883.87** | **3109.44** |  **4,551.82**  |
| **2011** | **57511.04** | **11,116.90** | **918.55** | **3314.51** |  **5,622.84**  |
| **2012** | **59929.89** | **10,654.75** | **874.70** | **3325.16** |  **6,537.54**  |
| **2013** | **63218.72** | **9,759.79** | **1,108.39** | **3214.95** |  **7,118.98**  |
| **2014** | **67152.79** | **10,068.85** | **783.12** | **3426.94** |  **7,904.03**  |
| **2015** | **69023.93** | **6,912.50** | **818.35** | **3831.98** |  **8,837.00**  |

***SOURCE: CENTRAL BANK OF NIGERIA STATISTICAL BULLETIN***

 **APPENDIX II**

**STATIONALITY TEST RESULT ON RGDP**

|  |  |
| --- | --- |
| Null Hypothesis: D(RGDP) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -6.903471 |  0.0311 |
| Test critical values: | 1% level |  | -2.639210 |  |
|  | 5% level |  | -1.951687 |  |
|  | 10% level |  | -1.610579 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(RGDP,3) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 03:07 |  |  |
| Sample (adjusted): 1984 2015 |  |  |
| Included observations: 32 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| D(RGDP(-1),2) | -1.276826 | 0.184954 | -6.903471 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.605631 |     Mean dependent var | -37.51562 |
| Adjusted R-squared | 0.605631 |     S.D. dependent var | 1490.705 |
| S.E. of regression | 936.1454 |     Akaike info criterion | 16.55217 |
| Sum squared resid | 27167416 |     Schwarz criterion | 16.59797 |
| Log likelihood | -263.8347 |     Hannan-Quinn criter. | 16.56735 |
| Durbin-Watson stat | 1.900923 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

 **APPENDIX III**

**STATIONALITY TEST RESULT ON TAX**

|  |  |
| --- | --- |
| Null Hypothesis: TAX has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 8 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -2.690040 |  0.0092 |
| Test critical values: | 1% level |  | -2.656915 |  |
|  | 5% level |  | -1.954414 |  |
|  | 10% level |  | -1.609329 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(TAX) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 03:08 |  |  |
| Sample (adjusted): 1990 2015 |  |  |
| Included observations: 26 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| TAX(-1) | -0.591162 | 0.219760 | -2.690040 | 0.0155 |
| D(TAX(-1)) | 0.012397 | 0.309591 | 0.040042 | 0.9685 |
| D(TAX(-2)) | 0.208792 | 0.354727 | 0.588599 | 0.5639 |
| D(TAX(-3)) | 0.695575 | 0.429235 | 1.620498 | 0.1235 |
| D(TAX(-4)) | 0.752702 | 0.450746 | 1.669905 | 0.1132 |
| D(TAX(-5)) | 0.963778 | 0.402337 | 2.395446 | 0.0284 |
| D(TAX(-6)) | 1.807310 | 0.389706 | 4.637624 | 0.0002 |
| D(TAX(-7)) | 1.891880 | 0.588862 | 3.212772 | 0.0051 |
| D(TAX(-8)) | 1.769855 | 0.781789 | 2.263853 | 0.0370 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.642067 |     Mean dependent var | 263.7935 |
| Adjusted R-squared | 0.473628 |     S.D. dependent var | 1422.170 |
| S.E. of regression | 1031.805 |     Akaike info criterion | 16.98343 |
| Sum squared resid | 18098569 |     Schwarz criterion | 17.41893 |
| Log likelihood | -211.7846 |     Hannan-Quinn criter. | 17.10884 |
| Durbin-Watson stat | 1.935512 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**APPENDIX IV**

**STATIONALITY TEST RESULT ON CAPEX**

|  |  |
| --- | --- |
| Null Hypothesis: D(CAPEX) has a unit root |  |
| Exogenous: Constant, Linear Trend |  |
| Lag Length: 7 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -4.622827 |  0.0055 |
| Test critical values: | 1% level |  | -4.356068 |  |
|  | 5% level |  | -3.595026 |  |
|  | 10% level |  | -3.233456 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(CAPEX,2) |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 03:09 |  |  |
| Sample (adjusted): 1990 2015 |  |  |
| Included observations: 26 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| D(CAPEX(-1)) | -9.115380 | 1.971820 | -4.622827 | 0.0003 |
| D(CAPEX(-1),2) | 7.045694 | 1.769348 | 3.982085 | 0.0011 |
| D(CAPEX(-2),2) | 5.964872 | 1.502532 | 3.969879 | 0.0011 |
| D(CAPEX(-3),2) | 5.166817 | 1.280347 | 4.035481 | 0.0010 |
| D(CAPEX(-4),2) | 4.926507 | 1.146588 | 4.296666 | 0.0006 |
| D(CAPEX(-5),2) | 4.280565 | 1.052981 | 4.065188 | 0.0009 |
| D(CAPEX(-6),2) | 2.719593 | 0.804976 | 3.378477 | 0.0038 |
| D(CAPEX(-7),2) | 0.840064 | 0.402808 | 2.085523 | 0.0534 |
| C | -224.3719 | 91.63377 | -2.448572 | 0.0262 |
| @TREND("1981") | 25.67789 | 6.909129 | 3.716516 | 0.0019 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.876056 |     Mean dependent var | 1.097692 |
| Adjusted R-squared | 0.806338 |     S.D. dependent var | 241.3733 |
| S.E. of regression | 106.2214 |     Akaike info criterion | 12.45265 |
| Sum squared resid | 180527.7 |     Schwarz criterion | 12.93653 |
| Log likelihood | -151.8845 |     Hannan-Quinn criter. | 12.59199 |
| F-statistic | 12.56562 |     Durbin-Watson stat | 2.216246 |
| Prob(F-statistic) | 0.000011 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**APPENDIX V**

**STATIONALITY TEST RESULT ON RECEXP**

|  |  |
| --- | --- |
| Null Hypothesis: D(RECEXP) has a unit root |  |
| Exogenous: Constant, Linear Trend |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -6.354445 |  0.0042 |
| Test critical values: | 1% level |  | -4.262735 |  |
|  | 5% level |  | -3.552973 |  |
|  | 10% level |  | -3.209642 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(RECEXP,2) |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 03:11 |  |  |
| Sample (adjusted): 1983 2015 |  |  |
| Included observations: 33 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| D(RECEXP(-1)) | -1.154487 | 0.181682 | -6.354445 | 0.0000 |
| C | -81.52868 | 69.48322 | -1.173358 | 0.2499 |
| @TREND("1981") | 11.86125 | 3.769834 | 3.146360 | 0.0037 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.574300 |     Mean dependent var | 12.25394 |
| Adjusted R-squared | 0.545920 |     S.D. dependent var | 272.9184 |
| S.E. of regression | 183.9074 |     Akaike info criterion | 13.35325 |
| Sum squared resid | 1014658. |     Schwarz criterion | 13.48930 |
| Log likelihood | -217.3286 |     Hannan-Quinn criter. | 13.39903 |
| F-statistic | 20.23605 |     Durbin-Watson stat | 1.983637 |
| Prob(F-statistic) | 0.000003 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**APPENDIX VI**

**STATIONALITY TEST RESULT ON DOMDEBT**

|  |  |
| --- | --- |
| Null Hypothesis: D(DOMDEBT) has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -5.625430 |  0.0475 |
| Test critical values: | 1% level |  | -2.639210 |  |
|  | 5% level |  | -1.951687 |  |
|  | 10% level |  | -1.610579 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(DOMDEBT,3) |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 03:13 |  |  |
| Sample (adjusted): 1984 2015 |  |  |
| Included observations: 32 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| D(DOMDEBT(-1),2) | -1.019178 | 0.181173 | -5.625430 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.505023 |     Mean dependent var | 4.516562 |
| Adjusted R-squared | 0.505023 |     S.D. dependent var | 284.5937 |
| S.E. of regression | 200.2248 |     Akaike info criterion | 13.46751 |
| Sum squared resid | 1242789. |     Schwarz criterion | 13.51331 |
| Log likelihood | -214.4802 |     Hannan-Quinn criter. | 13.48269 |
| Durbin-Watson stat | 1.988044 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**APPENDIX VII**

**COINTEGRATION TEST RESULT**

|  |  |
| --- | --- |
| Null Hypothesis: ECT has a unit root |  |
| Exogenous: None |  |  |
| Lag Length: 0 (Automatic - based on SIC, maxlag=8) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | t-Statistic |   Prob.\* |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller test statistic | -4.247817 |  0.0001 |
| Test critical values: | 1% level |  | -2.636901 |  |
|  | 5% level |  | -1.951332 |  |
|  | 10% level |  | -1.610747 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*MacKinnon (1996) one-sided p-values. |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Augmented Dickey-Fuller Test Equation |  |
| Dependent Variable: D(ECT) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:02 |  |  |
| Sample (adjusted): 1983 2015 |  |  |
| Included observations: 33 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| ECT(-1) | -0.734992 | 0.173028 | -4.247817 | 0.0002 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.360502 |     Mean dependent var | -10.51838 |
| Adjusted R-squared | 0.360502 |     S.D. dependent var | 1098.440 |
| S.E. of regression | 878.4073 |     Akaike info criterion | 16.42393 |
| Sum squared resid | 24691183 |     Schwarz criterion | 16.46928 |
| Log likelihood | -269.9949 |     Hannan-Quinn criter. | 16.43919 |
| Durbin-Watson stat | 1.930753 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**APPENDIX VIII**

**ERROR CORRECTION MECHANISM**

|  |  |  |
| --- | --- | --- |
| Dependent Variable: D(RGDP) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:03 |  |  |
| Sample (adjusted): 1983 2015 |  |  |
| Included observations: 33 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| TAX | 0.327338 | 0.087505 | 3.740811 | 0.0008 |
| D(CAPEX) | 0.339251 | 1.518908 | 0.223352 | 0.8249 |
| D(RECEXP) | 1.411152 | 1.367797 | 1.031697 | 0.3110 |
| D(DOMDEBT) | 0.215170 | 1.000659 | 0.215029 | 0.8313 |
| ECT(-1) | -0.288991 | 0.271434 | 1.064682 | 0.2961 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.535272 |     Mean dependent var | 1637.541 |
| Adjusted R-squared | 0.468883 |     S.D. dependent var | 1482.020 |
| S.E. of regression | 1080.064 |     Akaike info criterion | 16.94615 |
| Sum squared resid | 32663050 |     Schwarz criterion | 17.17290 |
| Log likelihood | -274.6116 |     Hannan-Quinn criter. | 17.02245 |
| Durbin-Watson stat | 1.484420 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

 **APPENDIX IX**

 **REGRESSION RESULT**

|  |  |  |
| --- | --- | --- |
| Dependent Variable: D(RGDP) |  |  |
| Method: Least Squares |  |  |
| Date: 07/21/18 Time: 10:05 |  |  |
| Sample (adjusted): 1982 2015 |  |  |
| Included observations: 34 after adjustments |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 599.0887 | 222.8708 | 2.688054 | 0.0118 |
| TAX | 0.274261 | 0.081350 | 3.371358 | 0.0021 |
| D(CAPEX) | 0.535968 | 1.381204 | 2.388044 | 0.0308 |
| D(RECEXP) | -1.790916 | 1.004191 | -1.983442 | 0.0450 |
| D(DOMDEBT) | -0.114915 | 0.873972 | -0.131486 | 0.8963 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.630642 |     Mean dependent var | 1581.351 |
| Adjusted R-squared | 0.579697 |     S.D. dependent var | 1495.719 |
| S.E. of regression | 969.6868 |     Akaike info criterion | 16.72688 |
| Sum squared resid | 27268483 |     Schwarz criterion | 16.95134 |
| Log likelihood | -279.3569 |     Hannan-Quinn criter. | 16.80343 |
| F-statistic | 12.37868 |     Durbin-Watson stat | 1.416063 |
| Prob(F-statistic) | 0.000005 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

 **APPENDIX X**

 **NORMALITY TEST RESULT**



 **APPENDIX XI**

 **GRANGER CAUSALITY TEST RESULT**

|  |
| --- |
| Pairwise Granger Causality Tests |
| Date: 07/21/18 Time: 10:06 |
| Sample: 1981 2015 |  |
| Lags: 2 |  |  |
|  |  |  |  |
|  |  |  |  |
|  Null Hypothesis: | Obs | F-Statistic | Prob.  |
|  |  |  |  |
|  |  |  |  |
|  TAX does not Granger Cause RGDP |  33 |  2.87711 | 0.0731 |
|  RGDP does not Granger Cause TAX |  5.21636 | 0.0119 |
|  |  |  |  |
|  |  |  |  |
|  CAPEX does not Granger Cause RGDP |  33 |  7.04087 | 0.0033 |
|  RGDP does not Granger Cause CAPEX |  0.42831 | 0.6558 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause RGDP |  33 |  0.12477 | 0.8832 |
|  RGDP does not Granger Cause RECEXP |  9.16663 | 0.0009 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause RGDP |  33 |  2.03095 | 0.1501 |
|  RGDP does not Granger Cause DOMDEBT |  4.75636 | 0.0167 |
|  |  |  |  |
|  |  |  |  |
|  CAPEX does not Granger Cause TAX |  33 |  4.19336 | 0.0255 |
|  |  |  |  |
|  TAX does not Granger Cause CAPEX |  2.56020 | 0.0953 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause TAX |  33 |  5.52174 | 0.0095 |
|  TAX does not Granger Cause RECEXP |  10.3245 | 0.0004 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause TAX |  33 |  11.9452 | 0.0002 |
|  TAX does not Granger Cause DOMDEBT |  2.76466 | 0.0802 |
|  |  |  |  |
|  |  |  |  |
|  RECEXP does not Granger Cause CAPEX |  33 |  0.40463 | 0.6711 |
|  CAPEX does not Granger Cause RECEXP |  11.7451 | 0.0002 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause CAPEX |  33 |  1.92821 | 0.1642 |
|  CAPEX does not Granger Cause DOMDEBT |  10.3367 | 0.0004 |
|  |  |  |  |
|  |  |  |  |
|  DOMDEBT does not Granger Cause RECEXP |  33 |  1.92569 | 0.1646 |
|  RECEXP does not Granger Cause DOMDEBT |  3.75195 | 0.0360 |
|  |  |  |  |
|  |  |  |  |