

**THE IMPACT OF EXCHANGE RATE ON THE NIGERIA
ECONOMIC GROWTH**

BY

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EC/2007/519

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TITLE PAGE

**THE IMPACT OF EXCHANGE RATE ON THE NIGERIA
ECONOMIC GROWTH (1980-2010)**

**A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE AWARD OF BACHELORS OF
SCIENCE (B.SC) DEGREE IN ECONOMICS**

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APPROVAL PAGE

This is to certify that this research project titled the impact of exchange rate on the Nigerian economic growth was carried out by Egbujor Nnedinma Onyekachi under the supervision of Mr. J. C. Odionye, has been fully supervised and found worthy of acceptance in partial fulfillment of the award of Bachelor of Science, (B.Sc) Degree in Economics at Caritas University, Amorji-Nike, Enugu State.

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DEDICATION

This research project is dedicated to the Almighty God who has given me the grace and opportunity to complete this program.

ACKNOWLEDGEMENT

My profound gratitude goes to God Almighty, who in his infinite mercies, blessings and grace made this work a success.

Special thanks and appreciation goes to my family Mr. and Mrs. S. C. Egbujor for their love and care, financial support, moral support and prayers. Prof Mrs. V. I. Ezenwa for your love and care. Mr. and Mrs. Audu, I remain grateful to you. I acknowledge my siblings, Chikodi, Nnamdi, Obinna, chinomso and my lovely son Daniel for your support.

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To my friends, Chinelo, Stella, Chinyere, Akachi and my lovely room mates who indeed contributed positively to the success of this project work. I also appreciate every other person who has contributed in one way or the other and has not been mentioned.

ABSTRACT

Exchange rate is the price of one currency in terms of another currency. Exchange rate s This exchange rate is also used to determine the level of output growth of the country. Over the years, Nigeria has adopted various exchange rate regime ranging research work is centered on the impact of exchange rate on the Nigeria economic growth with special emphasis on the purchasing power of the average Nigeria and the level of international trade transaction. To do this, the classical linear regression model is applied and the ordinary least square econometric technique is also used to estimate the impact of exchange rate on economic growth. The variables used are GDP and non-oil export as the dependent variables, real exchange rates interest rates, inflation rate and degree of trade openness as the independent variables. Economic test shows the a priori criteria of the parameters used to determine if it conforms to the economic theory. The statistical criteria employed are the F test, T-test and R^2 which test the significance of the parameters. The econometric (second order test) used are the Durbin Watson test, which test for autocorrelation and the randomness of the residuals. The Jarque-Bera criteria is used to test for normality of the residuals .the multicollinearity test which is used to test for a perfect linear relationship among the explanatory variables. From the analysis of the result, it shows that there is a relationship between GDP, EXPT and real exchange rate in Nigeria. Exchange rate stability has a positive and significant affection export and growth. An increase in exchange rate stability motivate firms to invest in export based industries.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The exchange rate is perhaps one of the most widely discussed topics in Nigeria today. Macroeconomic policy formulation is a process by which the agencies responsible for the conduct of economic policies manipulate a set of instrumental variables in order to achieve some desired objectives. In Nigeria, these objectives include achievements of domestic price stability, balance of payment equilibrium, efficiency, equitable distribution of income and economic growth and development. Economic growth refers to the continuous increase in a country's national income or the total volume of goods and services, a good indicator of economic growth is the increase in Gross National Product (GNP) over a long period of time. Economic development on the other hand implies both structural and functional transformation of all the economic indexes from a low to a high state.

After several years of exchange rate floating among countries exchange rate arrangement in Nigeria have undergone significant changes over the past four decades. It shifted from a fixed regime in the 1960's to a pegged arrangement

between the 1970's and the mid 1980's and finally to the various types of the floating regime since 1936, following the adoption of the structural adjustment programme (SAP). A regime of managed float, without any strong commitment to defending any particular parity has been the predominant characteristics of the floating regime in Nigeria since 1986. The fixed exchange rate regime induced an overvaluation of the naira and was supported by exchange control regulations that engendered significant distortions in the economy. This gave rise to massive importation of finished goods with the adverse consequences for domestic production, balance of payments position and the nation's external reserves level. Moreover, the period was bedeviled by sharp practices perpetrated by dealers and end users of foreign exchange.

The floating exchange rate regime implies that the forces of demand and supply will determine the exchange rate. This regime assumes the absence of any visible hand in the foreign exchange market and that the exchange rate adjusts automatically to clear any deficit or surplus of market. Consequently, changes in the demand and supply of foreign exchange can alter exchange rates but not the country's international reserves. In this arrangement, the exchange rate serves as a "buffer" for external shocks thus, allowing the monetary authorities full discretion

in the conduct of monetary policy. The disadvantages of the freely floating regime have been documented.

It is important to know that economic objectives are usually the main consideration in determining the exchange control for instance from 1982-1983, the Nigeria currency was pegged to the British pound sterling on a 1.1 ratio. Before then, the Nigerian naira has been devalued by 10%. Apart from this policy measures discussed above, the central bank of Nigeria (CBN) applied the basket of currencies approach from 1979 as the guide in determination of the exchange rate which was determined by the relative strength of the currencies approach from 1979 as the guide in determination of the exchange rate which was determined by the relative strength of the currencies of the country's trading partner and the volume of trade with such countries. Specifically weights were attached to these with such countries with the American dollars and British pound sterling on the exchange rate mechanism (CBN, 1994). One of the objective of the various macro-economic policies adopted under the structural adjustment programme (SAP) in July, 1986, was to establish a realistic and sustainable exchange rate for the naira, this policy was recommended in 1986 by the international monetary fund (IMF). One exchange rate mechanism was adopted in 1986. the key element of structural

adjustment programme (SAP) was the freely market determination of the naira exchange rate through an auction system.

This was the beginning of the unstable exchange rate; the government had to establish the foreign exchange market (FEM) to stabilize the exchange rate depending on the state of balance of payments, the rate of inflation, domestic liquidity and employment. Between 1986 and 2003, the federal government experimented with different exchange rate policies without allowing any of them make remarkable impact in the economy before it was changed. This consistency in policies and lack of continuity in ex-change rate policies aggravated the instability nature of the naira exchange rate (Gbosi, 1994).

1.2 STATEMENT OF THE PROBLEM

The exchange rate of the naira was relatively stable between 1973 and 1979 during the oil boom era (regulating require). This was also the situation prior to 1990 when agricultural products accounted for more than 70% of the nations gross domestic products (GDP) (Ewa, 2011). However, as a result of the development in the petroleum oil sector in 1970's, the share of agriculture in total exports declined

significantly while that of oil increased. However, from 1981, the world oil market started to deteriorate and with its economic crises emerged in Nigeria because of the country's dependence on oil sales for her export earnings. To underline the importance of oil export to Nigerian economy, the gross national product (GNP) fell from \$76 billion in 1930 to \$40 billion in 1996, a number of policy measures to revive and strengthen the economy. The real rate of economic growth became negative as a result of the adoption of structural adjustment programme (SAP).

(Hinkle, 1999) stated that “while some economist dispute the ability to change in the real exchange rate to improve the trade balance of developing countries because of elasticity of their low export, others believe that structural policies could however, change the long –term trends in the trade and prospects for exported growth. Instabilities of the foreign exchange rate is also a problem to the economy.

1.3 OBJECTIVES OF THE STUDY

The objectives of the study is to show the impact of exchange rate on gross domestic product and hence how this affect the growth of the country.

The sub-objectives are

1. To determine the impact of exchange rate fluctuations on Nigeria's growth
2. To ascertain the effect of exchange rate on Nigerian export.

1.4 RESEARCH QUESTIONS

1. To what extent does exchange rate fluctuation impacts on the volume of Nigeria's economic growth?
2. What is the effect of exchange rate on Nigeria's export?

1.5 RESEARCH HYPOTHESIS

Base on the objectives of the study, the following hypothesis were formulated.

1. H_0 : exchange rate has no significant impact on Nigeria's economic growth
2. H_0 : exchange rate has no significant impact on export in Nigeria.

1.6 SCOPE OF THE STUDY

This research work is designed to cover the period 1980-2010, a period of thirty one years. The general overview of the profile of Nigerians exchange rate over the years shall be discussed. The scope consist of the regulatory and

deregulatory exchange rate period that is the fixed exchange rate and the floating exchange rate period. The study is based on core macro-economic performance of Nigeria between 1980-2010.

1.7 SIGNIFICANCE OF THE STUDY

The significance of this research work lies in the fact that if the causes of the unstable exchange rate of the naira is identified and corrected, the economy will rapidly grow and develop into an advanced one. This is so because if the unstable exchange rate of the naira is proved to be affecting badly the macro-economic major variables, including real exchange rate, real interest rate, inflation rate, gross domestic product and trade openness of the country, attempts should be made to stabilize the exchange rate. This is because these variables are gauge for the importantly measurement of growth and development of any economy. Importantly, this study would help the government and the central bank of Nigeria (CBN) to identify the strength and weakness of each foreign exchange system and hence adopts the policy that suits the economy best this will definitely enhance growth and development of the economy, the study will also serve as a guide to future researchers on this subject.

1.8 LIMITATIONS OF THE STUDY

The study is structured to evaluate the Nigeria exchange rate as the pilot of economic growth and development. The study is therefore limited to the core economic growth in Nigeria and not the socio- political factors of the foreign exchange rate.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 DETERMINANTS OF NIGERIA'S EXCHANGE RATE

VOLATILITY

Exchange rate movements is an important determinant of international transactions. In Nigeria, the fluctuation according to Omojimite and Akpokodje (2010) have been influenced by changing pattern of international trade, institutional change in the economy and structural shifts in production. Furthering, Ogunleye (2010) noted that the real exchange rate in Nigeria has been principally influenced by external shocks resulting from the vagaries of world price of agricultural commodities and oil prices, both major sources of Nigeria export and foreign exchange earnings; contending that when the economy depended on agricultural exports, real exchange rate volatility was less pronounced given the fact that these products were subjects to less volatility and that there were more trading partners involved in the calculation of the country's real exchange rate. This is minimally affected by the real exchange rate fluctuating by only 0.14% between 1970 and 1977. the increased dependence of the country on oil, resulted in

several trade shocks from global oil price shock fluctuating the naira exchange rate by 10% between 1970 – 1985 (Ogunleye 2010).

To Iyoha and Oriakhi (2002), movements in real exchange rate during this period were nominal shocks resulting from fiscal expenditure in ambitious development projects; and when the windfall ended, the government resorted to financing its expenditures through money creation. Thus expansionary monetary fiscal policy according to him, exerted upwards pressure on inflation, aggravating sharp movements in real exchange rate. From 1986, the adoption of the structural adjustment programme (SAP) became a contributory factor in shaping the dynamics of real exchange rate in Nigeria. One of the cardinal points of this policy was floating nominal exchange rate policy. As the naira was allowed to float the nominal exchange rate movement became more pronounced.

Contributing to stronger movements in exchange rate during this period. Between 1986 and 1992, Ogunleye (2010) observed that the mean annual change in real exchange rate in the country increased to 25% reducing to 4.5% between 2000 and 2006. favourable terms of trade, less fiscal dominance, effective monetary policy induced by more independent and foreign exchange rate volatility.

2.1.1 FOREIGN EXCHANGE RATE VOLATILITY, EXPORT PERFORMANCE AND ECONOMIC GROWTH

Fluctuations, positive or negative, are not desirable to producers of export products as it has been found to increase risk and uncertainty, international transactions. Findings by the International Monetary Fund (IMF) (1984) revealed that these fluctuations include undesirable macro-economic phenomena inflations though observed positive effect of exchange rate fluctuations on export trade in European Union countries (Caballew and Carba, 1979).

Walsh and Yu (2010) viewed the effect of these fluctuations from first its impact on foreign direct investment where they noted that low exchange rate favour the importation of production, machinery and production export in periods of high foreign exchange rate. Furthering, ford and stein (1991) found a strong evidence of a weak host country increase inward model as depreciation (down change in exchange rate) make a host country less expensive.

Blongein (1997) argued that exchange rate depression in host countries tend to increase foreign direct investment inflows adding that a strong real exchange rate strengthens the incentives of foreign companies to produce at home for export instead of investing in a host country for export. Different open economies

experience different episodes of exchange rate appreciation. Exchange rate induces a contraction of the exporting manufacturing sector. Maintenance of export performance to them require the depreciation of the real exchange rate of a country's currency, the achievable through monetary injections noting that a policy of exchange rate depreciation can successfully prevent a contraction of export output, having an allocative effect in the economy (Lama and medina, 2010).

Adubi and Okunmadewa (1999) posited that Nigeria as a developing nation is expected to gain from export conversion price increases as a result of currency devaluation findings by Obadan (1994) and Osuntogun et al (1993) on the effect of stable exchange rate on export performance showed that exchange rate affect a country's export rate with its attendant risk affect export earnings, performance and growth positive to exporters when devaluated poor result from the floating exchange rate regimes of the 1970's necessitated a change in foreign exchange rate management. The structural adjustment programme was introduced in 1986, with the cardinal objective of restructuring the production base of the economy with a positive bias for agricultural export production. This reform facitated the continued devaluation of the Nigerian naira with the expected increase in domestic prices of agricultural export boasting domestic production.

To Srour (2006), diversification of countries export base is one reason given by developing nations for changing foreign exchange rates and regimes which in turn according to the world trade Organization (2010) increases local production, employment, income and economic growth concluding foreign exchange rate is a determinant of export trade and economic growth in Nigeria. Churwu (2007) and Adubi and Okunmadewa (1999).

2.1.2 THE PURCHASING POWER PARITY THEORY

The purchasing power parity (PPP) is one of the earliest and perhaps most popular theory of exchange rate. This posits that the exchange rate between two currencies would be equal to the relevant national price levels. It assumes the absence of trade barriers and transactions cost and existence of the purchasing power parity (PPP) (Obioma, 2000). In this version, the purchasing power parity (PPP) doctrine equates the equilibrium exchange rate of the ratio of domestic to foreign price level (Lyon, 1992).

E-Pd

PE

Where; E is the nominal exchange rate defined in terms of domestic currency per unit of foreign currency. P_d is the foreign price, PE level with perfect efficiency and absence of trade barriers transaction cost and the purchasing power parity (PPP) doctrine would be tantamount to the applications of the law of one price if all the countries produced explicitly the same tradable goods. It is important to know that the PPP is a major component of the monetary approach the PPO between the two currencies are provided by (Gustaar Cassel 1998) is the amount of the determination of equilibrium exchange rate. It is often applied as a proxy for the monetary model in exchange rate analysis (CBN, 1998).

The relevant version of PPP doctrine relates the equilibrium exchange rate to the product of the exchange rate in a base period and the ratio of the countries price indices (Argh, 1994). By definition, we have the relative purchasing power parity (PPP) as

$$E = \frac{P_d}{P_e} R_0$$

PE

Where

R_0 is the actual exchange rate at the base period (the number of units of domestic currency per unit of foreign currency). The purchasing power parity theory defines

two equilibrium exchange rate system. The first is the short run equilibrium exchange rate which is defined, in this context as the rate that would exist under a purely freely floating exchange rate system. Second is the long-run equilibrium that would yield balance of payment equilibrium over a time period in incorporating and cyclical fluctuations in the balance of payment (including those that relate to business cycle at home and abroad). Deviation of prevailing exchange rate from the relative purchasing power in a currency are generally attributed to problem of arbitrage and expectations in the goods market. Some of the assumptions of PPP theory however are quite unrealistic. Efficiency level for example vary from country to country and as such, there are deferring cost functions.

To align international comparisons on the assumption of some technological efficiency in all countries could be deceptive. Again the choice of the base year for the relative purchasing power parity (PPP) is often arbitrary. Finally, PPP is often presented as if causality runs from price level to exchange rate. Actual experiences are often more complicated when monetary/fiscal policies move, both causality could be quite exogenous or bi-directional (Argy and Frenkele, 1998).

2.1.3 THEORETICAL ISSUES

There is consensus in the literature on the impact of exchange rate stability neither on economic growth nor on the mechanism through which oil price fluctuations affect growth from the macro-economic perspective, theoretically, flexible exchange rate allow an easier adjustment in response to asymmetric country specific real shocks. (Schnabel, 2007). The macro-economic effect if low exchange rate volatility under the fixed exchange rate system are associated with low transactions costs for international trade and capital flow thereby contributing to higher growth. Indirectly, fixed exchange rate enhances international price transparency as consumers can compare prices indifferent countries more easily. If exchange rate volatility is eliminated international arbitrage enhances efficiency, productivity and welfare. Earlier, Mundell (1973a, 1993b) opined that monetary and exchange rate polices are the chief source of uncertainty and volatility in small open economics and economic growth is enhanced when exchange rate fluctuations are smoothed.

The transmission mechanism according to Scbnabel (2008) through which oil prices affect real economic activity include both supply and demand channels. The supply side effects are related to the fact that crude oil is a basic input to

production, and an increase in oil price leads to rise in production cost that induces firms to lower output, the demand side effect is derived from the fact that oil prices changes affect both consumption and investment decisions. Consumption is adversely affected because increase in oil price affect disposable income and the domestic price of tradable good. Investment is adversely affected because such increase in oil price also affects firms' input prices and thereby increasing their costs.

2.1.4 THE TRADITIONAL FLOW MODEL

The traditional flow model, views exchange rate as the product of the interaction between the demand for and supply of foreign exchange (Augutus, 2003). In this model, the exchange rate (sin equilibrium when supply equals demands demand for foreign exchange, (Olisadebe, 1991). The exchange rate adjusts to balance the demand by the domestic resident for foreign exchange. The demand for foreign exchange depends on domestic resident's demand for domestic goods and assets. On the assumption that the foreign demand for domestic goods is determined essentially by domestic income, the relative income plays a major roe in determined exchange rate under the flow model. Since assets demand can be

said to demand on difference between domestic and foreign, interest rate differentials is other major determinants of the exchange rate in this frame work.

Under the traditional flow model that is the balance of payments model, the exchange rate is assumed to equilibrate the flow supply of and the flow demand for foreign currency. The balance of payment deficits (surplus) in current account is offset by surplus in (deficits) in the capital account. The major limitations of the traditional model or the portfolio balance model include the overshooting of the exchange rate target and the fact that substitutability between money and financial asset may not be automatic, this led or led to the development of the monetary approach.

2.1.5 THE ELASTICITY APPROACH

This approach merely restricts to trade invisible goods. According to this approach, the success of devaluation in improving the balance of trade and through it, the balance of payment depends upon the demand elasticity of imports and exports developing country (Dewett, 1982). In other words an improvement in the balance of trade will depend upon whether the demand for import and export is elastic devaluation makes which makes import of the devaluating country costlier

than before and in case her demand for import is elastic, a higher amount will be spent by the foreigners thereby affecting adversely the balance of payment of the devaluing country. However, if her demand for exports as a result of devaluation in her balance of payments, will purchase more, like wise, if her demand for imports is elastic, then the imports of the country will be significantly reduced by developing country.

However, some rules are needed to related the required degree of elasticities for the success of devaluation in improving balance of trade. In this context, we have what is called “marshall learner conditions”. According to these condition, devaluation will improve the balance of trade of a country if the sum of the elasticity of demand for assuming both elasticities are infinite.

Let Ex^d , Em^d = price elasticity of demand for exports, and imports respectively. Ex^s , Em^s = price elasticity of supply for exports and imports respectively. Then according to learner’s condition, devaluation will increase a country’s balance of trade, Ex^d , $Em^d > 1$, given infinite Ex^s , Em^s . It should be emphasized that the marshall learners condition related only to demand for commodity exports and imports. The response of capital should be taken into consideration before it can be determined whether devaluation will improve the

balance of payment or not. This is because, if sufficient amounts of autonomous capital flows into the devaluing country, it would be possible to have the sum of elasticity of demand less than one and yet devaluation may lead to improvement in the balance of payment of the devaluing country. This is reduced as a result of devaluation, the with the sum of elasticity greater than one, would aggravate the deficit. This would occur if capital was discouraged by devaluation and investors fear further devaluation. Moreover, if the trading partners retaliate, devaluation will not make any impact on the import and export of the devaluing county, even though her demand for imports and exports may be elastic.

2.1.6 THE MONETARY APPROACH

The monetary approach is predicted on the importance of money. It identifies exchange rate as a function of relative shift in money shift in money stock, inflation rate as a proxy and domestic output between an economy and a trading partner economy. It is important to know that the purchasing power parity (PP) is a major component of the monetary approach. The monetary approach is a recent development in the theory of exchange rate determination. It view as the exchange rate as being the relative price of two assets (natural monies) is determined

primarily by the relative supplies of demand and for those monies, the equilibrium exchange rate is attained when the existing stocks of the two monies are willingly held (Gbosi, 2003).

It is therefore argued that a theory of exchange rate deterioration should be stated contently in terms of the supplies and demand for those monies. In this model, exchange rate adjusts to allocate the total stocks of foreign exchange in question in the asset market. This new theory of exchange rate determination according to (Guarter and Hottman, 1985), can be presented in one or two terms the monetary approach or the asset market approach of exchange rate determination. These approaches emphasizes on the roles of money and assets in determining the exchange rate, when it is flexible. The asset market approach or monetary approach, attributes variation in exchange rare essentially to income and expected rates of return as well as the other factors that influence the supplies of demand for the various nation monies over the relative supplies of money and the fact that the demand for money is viewed to depend on the level of real income and the interest. The monetary approach postulated that the exchange rate is determined primarily by two key factors, namely, relation several versions of the monetary approach to exchange rate determination. The early flexible price

monetary model which is based on the assumptions of continuous purchasing power parity (PPP) and the existence of stable money demand functions for the domestic and foreign economics. The strictly price monetary model is an extension of the flexible price model except that, it allows for accommodation of short term deviation from the PPP. In other words, the strictly price monetary theory takes the fact that there may be deviations from PPP in the short-run and in the long-run, the deviation will tend to disappear.

The strictly-price monetary theory takes interest rate differentials as captured by exchange rate deviation. Price exchange is an automatic and in response to changes, inflation, therefore depresses the exchange rate unlike the balance of payment model where the effect of Y on exchange rate is positive. It is negative in the strictly price monetary theory.

2.1.7 THE PORTFOLIO BALANCE MODEL

The portfolio balance model views exchange rate as the result of the substitution between money-and financial assets (Gbosi 2003). In the monetary approach, there is no room for current movement to play a role in the determined exchange rate. Thus, the monetary approach cannot explain the observed tendency

of the currency of a country, with a current account surplus (deficit) to depreciate. This apparent shortcomings of the monetary approach as said to be related to its narrow view of an exchange rates as the relevant prices of money in addressing this shortcomings, the portfolio balance approach posits that an exchange rate is determined at least in short-run by the supply and demand in the markets for a wide range of financial assets.

The model assumes that individuals allocate their wealth (w) which is fixed at a point in time, among alternative assets. Domestically, domestic money (m), domestic issued bonds (b) and foreign bonds denominated in foreign currency (f) in a simple one country model. Theories of economic growth provide the empirical framework for this study. The classical theory of economic growth assumed the existence of a perfectly competitive economy where invisible hands allocate resources efficiently. Though Adam Smith, recognized the start of the development process when argued that division of labour increases productivity which raised relatively output, the classicists regard capital accumulation as a key of economic development. The Harrod's – defect in that on the other hand, it constitutes a demand for output and on the other hand, it increases the total productivity capital of the economy. The mechanism through which economic development is

accomplished is net investment. Both Harrods as well as Domar assumes fixed capital output that is, a rigid relationship between capital stock and output (Domar 1957).

The neoclassical growth theory on the other hand stresses efficiency in the allocation of resources and largely ignores social and political factors in economic growth. In spite of growth in national output, relative deprivation, poverty and imbalance among sector continued to increase. The structural change theories of which Aurthr Lewis, two sector surplus labour theory is a well known representative, addressed these structural distortions. The expected growth of output and employment in the modern sector may not be realized. This is so when capital stock embodying labour savings, technical progress is sued in the modern sector in such a situation that the expected transfer of the assumed surplus labour from the traditional to the modern sector has often failed to nationalize structural change theory, therefore, emphasize the degradation of the economy to facilitate grater understanding of he development process. Capital formation has been emphasized as it rates to the production of capital goods, like machines, plants and equipment. To measure economic growth, economist use data on gross Domestic Product (GDP) which measures the total income of everyone in the economy. The

real GDP per person also observe large differences in the standard of living among countries (Mankiw and Gregory, 1994).

The Solow growth model shows how growth in the labour force and advances in technology interact and how they affect output. The first step in building the model, we examine how the supply and demand for goods determine the accumulation of capital. To do thus, we hold the labour force and technology fixed, later, we relax these assumptions fixed by introducing changes in technology. The Solow growth model enables us to describe the production distribution and allocation of the economy's output data print in time. Moreover, the Solow growth model shows how savings, population growth and technological process affect the growth of output over the time. The supply of goods in the Solow growth model is based on the low familiar production function $Y = f(k, L)$. Output depends on the capital stock and the labour force. The Solow growth model, assumes that production function has constant returns to scale.

However, the new endogenous growth model propounded that technological changes is endogenous to growth because it is responsible for the signal as price and profits in the economic system. The endogenous growth theorist introduced the concept of human capital as a factor for growth. These new growth theorists

include Mankiw, Romar and Weil, Arrow, Villanueva Rebelos A. K. model. The increasing returns theorist opposed the one classical growth theory that are subject to decreasing returns and said that the investment in some new area product, power source or production technology proceeds through time that each new increment of investment is more productive than the previous increment. The source of these increasing returns can be seen through cost and idea. Investment in the early stages of development may create new skills and attitudes in the work force whose cost may be lower than the previous investment at the initial stage. Also each investor may find investment because of the infrastructure that has been created by those who came before.

Finally, the new growth do not predict convergence and hence, countries with abundant physical and human capital will grow permanently faster than countries with small capital in contrast to the Solow model, the new growth model predicts divergence as implied in (Romer, 1996) and (A.O. Jenur, 2008).

2.2 EMPIRICAL LITERATURE

Empirical evidences have shown strong effect of short-run and long-run adverse effect of exchange rate swings on economic growth performance through

the trade channel. The nature of the effect however, runs in either position or negative direction. According to IMF (1994), and European commission (1990), empirical evidence in favour of a systematic positive (or negative) effect of exchange rate stability on trade (and thereby growth) in small open economics has remained mixed. Gravity models have been used as framework to quantify the impact of exchange rate stability on trade and growth. Schnabel (2003) found evidence that exchange rates ability is associated with more growth in the EMU periphery. The evidence, according to him, is strong for emerging Europe which has moved from an environment of high macro-economic instability to macro-economic stability during the observation period. Other empirical studies examine the role of capital market in ensuring exchange stability and economic growth..

VAMVAKIDIS (1998), Study undertook an investigation, aimed at finding any relationship before regional trade agreement (RTA) and growth. He focused on whether openness size of he population and the gross domestic product (GDP) affected growth of countries that have entered into RTA. The results shows that economy's with open economics grow faster. He also provided evidence that he level of development in neighbouring open economics have some spill over effect. By contrast, the lead level of development in open economics have no little on

domestic growth. Similar studies were done by Langhamer and Hienmenz (1990). Their empirical work found out that regional agreement made up of developing nations has had no significant contribution to trade expansion.

Arron and Sala-Martins (1995), estimated the impact of trade protection on growth. Using tariff on capital goods and intermediate goods as a measure to protect their result, indicated negative impact between trade, liberalization and growth countries with low results according to them grow faster than those with high tariffs. This confirms the earlier theoretical literature in favour of trade liberalization the forgoing literatures examined have know all positive relationship between trade and growth. In the words of Onah (2002), trade liberalization policy in Nigeria, was accompanied in 1987 budget and the result has been encouraging. In his own view, the rate of inflation has been reasonably controlled though not reduced thoroughly. In spite of their effort to reduce prices, the local industries are collapsing because of inadequate demand for their products.

However, Boardiary and Trenderick (1987), using static applied general equilibrium (first generation) found that removal of tariffs in Canada would cause welfare to decline by about trade deterioration, resulting from an import tariff reduction as implied by national product differentiation. Assumption has led

Broom (1987) to conclude rather critically that unilateral trade liberalization is E (>0) and (<0) minus (-) the income elasticity of demand for export and imports respectively.

Moreley (1992), analyzed the effect of real exchange rates on output for twenty-eight (28) devaluation experiences in developing countries using a regression framework. It was explicitly concluded that the exchange rate devaluation is a major factor for the upsurge of inflation. Kamin (1996) showed that the level of the real exchange rate was a primary determinant of the rate of inflation in Mexico during the 1980's and 1990's. (anetic and Green (1991), Falokun (1994), reached similar conclusions for some selected African countries including Nigeria.

Dell Africa (1999), examined the effect of exchange rate fluctuation on the bilateral trade of European Union members plus Switzerland over the period of 1975-1994, using several definitions of volatility. In the basic OLS regression, exchange rate fluctuation had a small but significant negative impact on trade; reducing volatility to zero in 1994 would have increased trade by an amount ranging from 10 to 13%, depending on the measures of fluctuation used. Usually both fixed and random effects, the impact of fluctuation was still negative and

significant but smaller in magnitude. The author found that elimination of exchange rate fluctuation would have increased trade by about 36 in 1994.

Mauna and Reza (2001), studies the effect of trade liberalization, real exchange rate and trade diversification on selected north American countries like Morocco, Algeria and Tunisia. By decomposing changes in real exchange rate into fundamental and monetary determinations, and by using both standard statistical measures of exchange rate fluctuation and the measures of exchange rate risk developed by puree and Steiner (1989). They reached the conclusion that exchange rate depreciation has a positive effect on the quantity of manufactured exports while exchange rate misalignment, volatility has a negative effect. According to them, the motivating result is that all manufacturing sub-sectors are responsive to exchange rate changes but the degree of responsiveness differs across sectors.

In their study, Broda and Romatis (2003) they found that real exchange rate volatility depresses trade in differentiated goods. The study used bilateral trade made where the OLS (ordinary least square) and GMM (Generalized method of moment) methods were used after taken into account the direction of causality, they ascertained that a 10% increase in volatility depresses differentiated product trade by 0.7%, while a 10% increase in trade reduces exchange rate volatility by

0.3%. The OLS estimated results showed that the effect of volatility on trade is reduced by 70%. They justified the result by arguing that much of the correlation between trade and change in the exchange rate is due to the effect that trade has on exchange rate fluctuations. Their study further revealed that a 10% increase in the intensity of bilateral trading relationship reduces the volatility of the associated exchange rate by 0.3%. Moving to the studies of exchange rate volatility on trade in less developed countries (LDC's) Carter (1981), who used a log-level model specification to examine Brazilian exports, used annual data for 1965-1979 to arrive at the conclusion that a significant reduction in exchange rate uncertainty in Brazil's economy during the crawling era was adopted in 1963.

Philips (1986), Granger and Newbold (1974) found that export and exchange rate risks are related, however, they criticized the use of a log-level model when the data is non stationary.

Osuntogen et al (1993), in their analysis of strategic issues in promoting Nigeria's non-oil exports, determined the effects of exchange rate uncertainty on Nigeria's non export performance as a side analysis. This is the pioneering effort in Nigeria to determine the effect of exchange rate risk on export. However, their model did not take into consideration the cross price effect. Exchange rate acts as

shock absorber if rigidly fixed, the shock of inflation and deflation from abroad are transmitted to internal economy system. But variations in the exchange rate can wind off the invasion of the inflationary and deflation any forces. If demand and supply could work excellently in economic sense, it would be better to allow exchange rate to be freely determined by both demand and supply.

In conclusion, most of the econometric analysis indicated that devaluations (either increases in the level of real exchange rate or in the rate of depreciation) were associated with a reduction in output and increase in inflation.

Nigeria is regarded as the largest oil producing nation in Africa and the tenth largest in the world in terms of oil reserves with a production level of close to 2 million barrels per day, though this level has been seriously affected due to crises in the oil production region. Nigeria benefited handsomely from likes in the oil, since the beginning of second world war. The balance of payment portion of the country remains highly favourable with over 20 month of imports, which translates tower 55 billion of reserves. Exchange rate was moderately stable between 2000 and 2008, while GDP growth averaged 5.01% within the same period.

However, oil consumption in the country heavily relies on the import of refined petroleum and products since the collapse of local refineries in the late

1980's. Thus over 90% of the country domestic requirements of oil are sourced from imports. The near collapse of the power generation and distribution industry in the country further accentuates the acute shortage of energy. The burden on the government to unwisely and between 1999 and 2000, the federal government of Nigeria has reduced its subsidizing approximately 9 times. This seriously affects production, consumption and instruments in the country between 1986 and 2007, while figures 23 and 4, all in the appendix, represent the trends in the various in natural log.

2.3 LIMITATIONS OF THE PREVIOUS STUDIES

The impact of unstable exchange rate and devaluation on the economy have been a matter of concern to many scholars, researchers and business entrepreneurs. Another major problem is the issue of appropriate definition of the concept of equilibrium. This portion of this project reviews the studies of different people on aspects of exchange rate devaluation and lack of appropriate definition of the concept of equilibrium in the measurement and analysis of the real exchange rate. Egon (1963), examined the effects of exchange rate on price level balance of

payment and economic interaction. He rightly pointed out how these economic variables are affected by variations in exchange rate of the currency.

Aluko (1988) in his own view on the appreciation and depreciation of the naira since 1970 with regards to its effect on balance of payments and external reserve of the Nigeria, concluded depreciation of the naira which he said was overvalued was necessary for the implementation of SAP. He did not, however consider the developing nature of the Nigerian economy. And as a developing country or economy, Nigeria mainly produces primary product and imports machinery and some (major) raw materials for its industries. He did not consider the attendant high cost of imports with depreciation, devaluation would impose on such imports which would in turn, lead to high inflation rate. Kanyo (1988) in his work on inflation blames competitive price linking on free floating exchange market. This, he said is necessary due to the developing nature of the Nigerian economy.

Eze (1988), in his appraisal of foreign exchange rate fluctuation on the Nigerian economy recommended that the central bank of Nigeria should stabilize the value of naira exchange at efficiently approved rate to the public. The action of the black market in which foreign exchange is sourced faster than at the banks. He

however suggested what the government should influence in the foreign exchange rate positive economy reforms that will reduce the adverse effects on unstable foreign exchange rate on the Nigeria economy.

The big push strategy the proponent of the big push strategy are of the view that the economics of developing countries like Nigeria cannot only be described as being stagnant but also lack the enthusiasm and courage to take the great leaper to the exponents of this theory, the less developed countries needs to get out of its underdevelopment and the only way is to out of its is to use a huge amount of resources in order to start the process of development. The less developed economics need to use more than half of the national income of the economy for all out investment. According to the proponent of this strategy, the idea of bit progress or step by step is not possible to help development countries to achieve their goal of self sustaining growth. The advocate of the strategy stress that as a car needs a big push therefore, will come from is it public sector on private sector.

The contribution of these authors is still in order to study the economic implication of exchange rate instability and how a less developed countries can achieve economic growth.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

The methodology is the background against which the reader evaluates the findings and conclusions (Osuala: 1992). The choice of the appropriate technique to be used in a research work depends on the research problem as well as the objectives of the study (Koutsoyiannis: 1997). Econometric method of regression analysis was employed in this study.

3.1 MODEL SPECIFICATION

We shall employ the single equation technique of econometric simulation for this study. The model specification involves the determinant of the dependent and independent variables were include in the model the priory expectation of the signs and sizes of the parameters of the functions, the functional form of the model, the mathematical form of the equation.

The model that will be adopted is the classical least regression model that will be used (OLS). The choice of this method is predicted on the basic features of OLS (BLUE).

MODEL 1

The model will be used to capture these objectives.

Objective 1: The econometric model is stated as;

$$GDP = b_0 + b_1 RER + b_2 INT + b_3 DOP + e_i$$

Where: RER = Real exchange rate

INT = Interest rate

DOP = Degree of trade openness = $\left(\frac{EXP - IMP}{GDP} \right)$

GDP = Gross domestic product

E_i = The stochastic error term.

RER = is the real exchange rate, INT = interest rate, DOP = degree of trade openness which are the independent variables causing variations on the dependent variables.

GDP = Gross domestic product is the dependent variable,

b_0 is the intercept parameter and b_1, b_2, b_3 , are coefficient of the variables. E_i = stochastic error term.

MODEL II

The model will be used to capture objectives

Objective 2: The functional form is stated as

$$\text{EXP} = f(\text{RER}, \text{INT}, \text{INF}) \text{ ----- (2)}$$

In order to estimate the above equation, we put equation 2 into econometric form as;

$$\text{EXPT} = \alpha_0 + \alpha_1 \text{RER} + \alpha_2 \text{INT} + \alpha_3 \text{INF} + e_i$$

Where $\text{EXP} = \text{Export}$

$\text{RER} = \text{Real exchange rate}$

$\text{INT} = \text{Interest rate}$

$\text{INF} = \text{Inflation rate}$

$e_i = \text{Error term}$

The apriori: $\alpha_1 > 0, \alpha_2 < 0, \alpha_3 > 0$

3.2 METHOD OF DATA ANALYSIS

The result of this work shall be evaluated in three ways namely economic, statistical and econometry criteria.

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3.3.1 ECONOMIC CRITERIA

The economic criteria test shall be conducted to enable us examine the magnitude and size of the parameter estimate. This evaluation is guided by economic theory to ascertain if the parameter estimate conforms to expectation.

The variable for real interest rate represents the user cost of capital. There exists a negative relationship between interest rate and investment on economic growth. The variables for political risk are expected to exhibit a positive impact on free flow of export. This is informed by the fact that trade will move freely into areas of the economy with stable political system. The variable for trade openness which represents the measure of trade in the economy, is measured as trade to output ratio. Countries with high trade potentials will attract inflow of capital into the country. So there exist a positive relationship between trade openness and economic growth. Real exchange rate is expected to be positive because depreciation of the currency which is increase in exchange rate boost export and this brings about economic growth.

Variables	Expected Signs
Real exchange rate (RER)	Positive (+)
Real interest rate (INT)	Negative (-)
Degree of trade openness (DOP)	Positive (+)

3.3.2 STATISTICAL TEST (first – order)

Under the statistical test (first –order), we will test for the goodness of fit, the individual significance of each regression using the f- test and finally, significance of the regression model using the f-test.

- (a) Goodness of fit test: We shall make of the coefficient of multiple determination R^2 to find how well the sample regression line fits the data. R^2 measure how the variations in the explanatory variable effect the dependent variable.
- (b) Student t-test: It is used for testing the significance. We shall make use of 5% level of significance with n-k degree of freedom and where necessary, the probability value will be used as a rule of thumb. Where $\alpha = 0.05$ (n-k), n = number of observation (sample size), k = total number of estimated parameter.

(c) The f-test: This will be used for testing the overall significance of the regression model. In other words, it will be used for testing joint impact of the independent variables on the dependent variable. The regression might not have influence on the dependent variable except in conjunction with other regression. We shall make use of 5% level of significance with $(k-1)$ $(n-k)$ degree of freedom where $v_1 = k-1, v_2 = n-k$

3.3.3 ECONOMETRIC (SECOND ORDER TEST)

Econometric test will be used for empirical verification of the model. This will range from test including autocorrelation normality, heteroscedasticity and multicollinearity test.

(1) Autocorrelation: The classical linear regression model assumes that autocorrelation does not exist among the disturbance terms. In order to find out where the error terms are correlated in the regression, we will use the Brush – Godfrey serial correlation test. Brush-Godfrey test is the test for detecting autocorrelation. It allows for autoregressive (AR) and moving average (MA) error structure. It was jointly developed by Breusch Godfrey (Gujarati, 2004).

- (2) Normality test: This test will be conducted to find out if the error term was normally distributed with zero mean and constant variance ie it $e_i \sim N(0, \sigma^2)$. This is one of the assumptions of the classical linear regression model. The Jarque Bera test will be used to test for normality in the time series variables used. This test will be conducted by augmenting the equation by adding lagged values of the dependent variables.
- (3) Heteroscedasticity test: Heteroscedasticity occurs when the variance of the error term additional of the chosen values of the explanatory variables is not constant. In order to capture heteroscedasticity and specification bias, the cross-product term will be introduced among auxiliary regressions.
- (4) Multicollinearity test: This test is used to detect linear relationship among the variables. This is a situation where the explanatory variables are highly interconnected when they are highly correlated, it becomes difficult to separate the effect of each of them on the dependent variable.

3.4 NATURE AND SOURCE OF DATA

The data used for this study are annual. Time series from 1980-2010. They are sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2010).

CHAPTER FOUR

4.0 PRESENTATION AND ANALYSIS OF RESULTS

4.1 PRESENTATION OF RESULTS

Two models were estimated in this research work based on the topic the researcher is discussing. The models were estimated using the ordinary least square (OLS) method. The result of the models are presented below as thus:

Model I

Table 4.1.1 Result presentation

Dependent variable: GDP

METHOD: Least square

Sample: 1980-2010

Included observation 31

Variable	Coefficient	Std. Erro	T. Statistics	Prob
Constant	12.082283	0.320608	37.68720	0.0000
RER	1.193588	0.051041	23.38486	0.0000
INT	-0.077045	0.015944	-4.832137	0.0000
DOP	0.159790	0.174463	0.915901	0.3678

R-squared = 0.959414

F- statistics = 23.51945 (3,27)

Durbin – Watson stat. = 0.313026 (0.0000)

Number of observations = 31

Number of variables = 4

MODEL II

Table 4.1.2 Modeling Export by OLS

Variable	Coefficient	Std. Error	T. Statistics	Prob
Constant	1061715.0	1032320.0	1.028475	0.3129
RER	53054.61	6713.643	7.902506	0.0000
INT	-109590.0	63684.49	-1.720827	0.0967
INF	16729.48	22193.04	0.753816	0.4575

R- Squared = 0.731110

F-statistics = 24.47091 (3,27)

Durbin – Watson = 1.490571

Number of observations = 31

Number of variables = 4

4.2 RESULT INTERPRETATION

4.2.1 ANALYSIS OF RESULTS BASED ON ECONOMIC CRITERIA

Model I

The above result in terms of coefficients of the regression can be interpreted as follows:

The intercept is 12.08283. This shows that if all the explanatory variables are held constant, GDP will be 12.08283 ceterus paribus.

Real Exchange Rate (RER)

The coefficient is 1.193583. This indicates a positive relationship between real exchange rate and GDP, showing that a unit increase in real exchange rate (RER) will increase GDP by 1.19588.

Interest Rate (INT)

Interest rate has a negative coefficient of -0.077045. This indicates that interest rate has a negative relationship with GDP, showing that a unit increase in interest rate (INT) will reduce GDP by 0.077045.

Degree of Trade Openness (DOP)

The coefficient is 0.159790. This shows that the degree of trade openness has a positive relationship with GDP, showing that a unit increase in the degree of trade openness (DOP) will increase GDP by 0.159790.

Model II

The intercept is 1061715. This shows that if all the explanatory variables are held constant, GDP will be 1061715 ceteris paribus.

Real Exchange Rate (RER)

This coefficient is 53054.61. This indicates a positive relationship between real exchange rate (RER) and EXPT, showing that a unit increase in real exchange rate will increase EXPT by 53059.61.

Interest Rate (INT)

Interest rate has a negative coefficient of -109590.0. This shows that interest rate has a negative relationship with EXPT, showing that a unit increase in real interest rate (INT) will reduce non oil export by 109590.0

Inflation rate (INF)

The coefficient is 16729.48. This shows that inflation rate has a positive relationship with EXPOT, showing that a unit increase in inflation rate (INT) will increase non oil export by 16729.48.

4.2.1.2 ANALYSIS BASED ON THE A PRIORI CRITERIA

This test is carried out to ascertain if the parameter estimates conform with what economic theory postulates in terms of sign and magnitude. The test is summarized below:

Table 4.2.1.2 Model I

Variable	Expected sign	Obtained sign	Conclusion
RER	Positive (+)	Positive (+)	Conforms
INT	Negative (-)	Negative (-)	Conforms
DOP	Positive (+)	Positive (-)	Conforms

Table 4.2.1.2 Model II

Variable	Expected sign	Obtained sign	Conclusion
RER	Positive (+)	Positive (+)	Conforms
INT	Negative (-)	Negative (-)	Conforms
INF	Negative (-)	Positive (+)	Does not conform

4.2.2 ANALYSIS BASED ON STATISTICAL CRITERIA

4.2.2.1 THE COEFFICIENT OF MULTIPLE DETERMINATION (R^2)

In our model, mode I has R^2 of 0.959414, which implied that about 95% of the variation in real GDP is explained by the independent variable (real exchange rate, interest rate and degree of trade openness).

In model II, R^2 is 0.731110, which implies that 73% of the variations in export (EXPT) is explained by the independent variables (real exchange rate, interest rate and inflation rate).

4.2.2.2 The T-test statistics

The T-test is used to determine the significance of the individual parameter estimates and to achieve this, we have to compare the calculated t-value in the

regression result with the t-tabulated at n-k degree of freedom, at 5% significance level.

Test Hypothesis

$H_0: B_1 = 0$ (The parameters are statistically insignificant)

$H_1: B_1 \neq 0$ (The parameters are statistically significant).

Decision Rule

Reject H_0 if $t\text{-cal} > t\text{-tab}$

Accept H_0 if otherwise

From our data $n = 31$ and $k = 4$

Therefore $d.f = n - k = 31 - 4 = 27$

Critical t-tabulated at 0.05 significance level is equal to 2.052

MODEL I

Variable	T-calculated	T-tabulated	Decision rule	Conclusion
RER	23.38486	2.052	Reject Ho	Significant
INT	-4.832139	2.052	Reject Ho	Significant
DOP	0.915901	2.052	Accept Ho	Significant

MODEL 11

Variable	T-calculated	T-tabulated	Decision rule	Conclusion
RER	7.902506	2.052	Reject Ho	Significant
INT	-1.720827	2.052	Accept Ho	Not significant
INT	0.753816	2.052	Accept Ho	Not Significant

4.2.2.3 The F-statistics Test

The test is carried out to determine if the independent variables in the model are simultaneously significant or not. It has k-1 degree of freedom in the numerator and n-k degree of freedom in the denominator. Hence, the analysis shall be carried out under the hypothesis below:

Ho: $X_1 = X_2 = X_3 = 0$ (The model is insignificant)

H₁: $X_1 \neq X_2 \neq X_3 \neq 0$ (The model is significant)

Decision Rule

Reject H_0 if $f\text{-cal} > f\text{-tab}$ otherwise accept H_0 .

$$V_1 = K-1 = 4-1 = 3 \text{ (numerator)}$$

$$V_2 = n-k = 31-4 = 27 \text{ (denominator)}$$

MODEL I below analysis the result

F-calculated	T-tabulated	Decision rule
212.7502	2.9604	Reject H_0

From the result, since $f\text{-cal} > f\text{-tab}$ (i.e. $212.7502 > 2.9604$), we therefore reject the null hypothesis H_0 and accept the alternative hypothesis H_1 and conclude that at 5% level of significance the overall regression is statistically significant.

MODEL II below analysis the result

F-calculated	T-tabulated	Decision rule
24.47091	2.9604	Reject H_0

From the above results, since $f\text{-cal} > f\text{-tab}$, we reject the null hypothesis H_0 and accept the alternative hypothesis H_1 and conclude that at 5% level of significance, the overall regression is statistically significant.

4.2.3 ANALYSIS BASED ON ECONOMETRIC CRITERIA

(2nd order Test)

4.2.1.1 TEST FOR AUTO CORRELATION

This test is aimed at ascertaining if autocorrelation occurred in the model. To achieve this, we assume that the values of the random variables are temporarily independent by employing the technique of Durbin-Watson (d) statistics

Decision Rule

Null Hypothesis (Ho)	Decision	If
No positive autocorrelation	Reject	$0 < d < d_u$
No positive autocorrelation	No decision	$D_L \leq d \leq d_u$
No negative autocorrelation	Reject	$4 - d_L < d \leq 4$
No negative autocorrelation	No decision	$4 - d_u \leq d \leq 4 - d_L$
No autocorrelation (positive or negative)	Do not reject	$D_u < d < 4 \leq d_L$

Where d_L = lower unit

d_u = upper unit

d = durbin Watson calculated

From the Durbin Watson table.

Model I

$$dL = 1.160$$

$$d_u = 1.735$$

$$d^* = 1.108538$$

Model II

$$dL = 1.160$$

$$d_u = 1.735$$

$$d^* = 1.490571$$

Decision rule

Model I: $0 < d < dL$

$$0 < 1.108538 < 1.160$$

Model II: $0 < d < dL$

$$0 < 1.490571 < 1.160$$

Conclusion

The Durbin Watson shows that there is no positive autocorrelation in the two models. Therefore, we reject the null hypothesis for both models.

4.2.3.2 NORMALITY TEST

This test is carried out to test if the error term follows normal distribution. It is done using the Jarque-Bera statistic which follows chi-square distribution with 2 degrees of freedom at 5% level of significance.

Test Hypothesis

$H_0: e_i = 0$ (The error term is normally distributed)

$H_1: e_i \neq 0$ (The error term is not normally distributed).

$\alpha = 5\%$ (0.05 significant level)

Decision Rule

Reject H_0 if $X^2 \text{ cal} > X^2 \text{ tab}$ otherwise accept H_0

From the result, obtained from Jarque-Bera test of normality, $(JB) = 0.289133$.

That is $X^2 \text{ cal} = 0.239133$

$$X^2 \text{ tab} = 5.99147$$

Conclusion:

We accept and conclude that the error term is normally distributed since

$X^2 \text{ cal} < X^2 \text{ tab}$ i.e. $(0.289133 < 5.99147)$.

4.2.3.3 HETEROSCEDASTICITY TEST

This test is carried out to test if the error term have a constant variance. The test follows chi-square distribution with degrees of freedom equal to the number of regression in the auxiliary heteroscedasticity regression, excluding the error term.

Test Hypothesis

H_0 : Homoscedasticity (The variance is constant)

H_1 : Heteroscedasticity (the variance is not constant)

Decision rule

Reject H_0 if $X^2 \text{ cal} > X^2 \text{ tab}$ otherwise accept H_0 .

From the heteroscedasticity test result $X^2 \text{ cal} = 450.776$ and $X^2 \text{ tab} = 16.919$

From the result, $X^2 \text{ cal} > X^2 \text{ tab}$ (i.e. $450.776 > 16.919$) therefore reject the null hypothesis of homoscedasticity and accept the alternative hypothesis of heteroscedasticity showing that error term have a constant variance.

4.2.3.4 MULTI-COLLINEARITY TEST

Multicollinearity means the existence of a perfect linear relationship among the explanatory variable of a regression model.

Using the correlation Matrix

	GDP	RER	INF	EXPT	DOP	INT
GDP	1.0000	0.837062	-0.308417	0.991147	0.185848	-0.003738
RER	0.837062	1.00000	-0.342273	0.837436	0.232210	0.167966
INF	-0.308417	-0.342273	1.00000	-0.303448	0.170291	0.430320
EXPT	0.991147	0.837436	-0.303448	1.0000	0.216589	-0.012541
DOP	0.185848	0.2322210	0.170291	0.216589	1.00000	0.307901
INT	-0.003738	0.167966	0.430320	-0.012541	0.307901	1.0000

Decision Rule

From the rule of thumb, if correlation coefficient is greater than 0.8, we conclude that there is multicollinearity but if the correlation coefficient is less than 0.8, there is no multicollinearity

Conclusion: Multicollinearity only exist between

RER and GDP

EXPT and GDP

EXPT and RER

4.3 EVALUATION OF RESEARCH HYPOTHESIS

The research hypothesis was stated in chapter one as

Ho: Exchange rate has no significant impact on Nigeria's economic growth

H₁: Exchange rate has a significant impact on Nigerian's economic growth.

CONCLUSION

From the result and the analysis so far, we see that exchange rate has a positive significant impact on GDP and EXPT. The t-test showed that the impact of real exchange rate is significant on both models and the f-test also showed that the model is significant on both models is explaining the variations in GDP and non-oil export. We therefore reject Ho and conclude that exchange rate has a significant impact on Nigeria's economic growth.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND POLICY RECOMMENDATION

5.1 SUMMARY OF FINDINGS

This research work is meant to emphasize on the issue of exchange rate and its impact on international trade, purchasing power of average Nigerian and output growth level of Nigeria. This study investigated empirically on two models. The first model investigated empirically, the impact of variables such as real exchange rate (RER), real interest rate (INT) and degree of trade openness (DOP) on the GDP on the economy.

The second model investigated empirically the impact of variables such as real exchange rate (RER), real interest rate (INT), and inflation rate (INF) on export rate of the economy. All data used are secondary data obtained from the statistical bulletin of CBN.

From model I, real exchange rate has a positive impact on GDP, the interest rate has a negative impact on GDP and degree of trade openness has a positive impact on GDP.

From model II, inflation rate has a positive impact on export (EXPT), real exchange rate RER has a positive impact on EXPT and INT have a negative impact on EXPT.

In the autocorrelation, we reject the null hypothesis for both models. The estimator have constant variance and are well specified Multicollinearity only exist between Real exchange rate and GDP, EXPT and GDP, EXPT and Real exchange rate.

From the empirical reviewed work, some authors argued that exchange rate is positively related to output growth, while some authors argued that it is negatively related. However from empirical analysis of the study, it was found out that exchange rate is positively related to output growth.

5.2. CONCLUSION

Having conducted this research in the study of exchange rate stability on economic growth, thus there is need to maintain a stable exchange rate. Using time, series data from 1980-2010, I estimated the effect of exchange rate on export performance in Nigeria, our result showed that export trade performance are influenced by exchange rate stability. The study showed that Nigeria exchange rate

stability has a positive and significant effect on export and GDP, which is, if exports are sufficiently risk averse, and increase in exchange rate raises the marginal utility of export revenue and therefore induces them to increase exports. A stable exchange rate will curtail inflation, increase export, maintain a favourable balance of trade, and help to solve the problem of deficits and increase the external reserve of the economy.

5.3 POLICY RECOMMENDATIONS

Sequel to the findings of this study, I specifically made the following policy recommendations to the maintenance of stable exchange rate. To control exchange rate, these policies have to be adopted.

1. The government should create incentive such as loan subsidy etc, to small scale industries, thereby encouraging them to process on domestic goods into processed goods that will help boost our export.
2. The government should encourage the export promotion strategies in order to maintain a surplus balance of trade.
3. An effective policy should be made based on the fiscal and monetary policies which should be aimed at achieving a realistic exchange rate for naira.

4. An appropriate environment and infrastructural facilities should be provided so that foreign investors will be attracted to invest in Nigeria. This will provide employment opportunities, increase the level of income and the standard of living of the people.
5. Strict foreign exchange control polices should be adopted in order to help in determination of appropriate exchange rate value. This will go a long way to strengthen the naira.
6. In the case of imports, tariffs can be placed to be very high on imported goods, thereby discouraging imports.
7. Exchange rate liberalization is also critical in facilitating trade in any economy, we therefore advice the policy makers to ensure that exchange rate should be determined by the forces of demand and supply.
8. Interest rate should be at minimum, in order for the purchasing power of an average Nigeria to increase.
9. Finally, the government should influence the foreign exchange rate, by positive economic reforms that will reduce the adverse effect of unstable exchange rate on the Nigerian economy with respect to trade flow and export.

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