

Vol 3 (3) pp. 98-111 March, 2017
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ISSN: 2550-7877
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Full Length Research Paper

Impact of Interest Rate on Economic Growth in Nigeria

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Accepted 22nd February, 2017

Abstract

The Nigerian economy faced numerous challenges which impacted the overall economic activity and has witnessed crises with devastating consequences on the world commodity prices as a result of global economics. This subsequently created structural imbalances occasioned by the collapse of oil prices, which adversely affected the Nation's revenue. The Study examined the impact of interest rate of economic growth in Nigeria from 1990 to 2013. The result found that the interest rate has a slight impact on growth; however the growth can be improved by lower the interest rate which will increase the investment. As a result of the study was found out that Nigerian authorities should set interest rate policies that will boost the economic growth. Therefore, proper measure should be taken in order to have a more rapid economic growth.

Keywords: Economic Growth, Interest Rate, Nigeria, Financial System.

INTRODUCTION

Background to the Study

The Nigerian economy faced numerous challenges which impacted the overall economic activity and has witnessed crises with devastating consequences on the world commodity prices as a result of global economic recession (Obansa *et al.*, 2010). This subsequently created structural imbalances occasioned by the collapse of oil prices, which adversely affected the Nation's revenue (Obansa *et al.*, 2010). Even recently, the global economic and financial meltdown that started from USA and spread to other parts of the world is already catching up with the Nigerian economy and particularly her financial system (Obansa *et al.*, 2010).

The response of policy makers in Nigeria in an attempt to contain these spates of external shocks has always been occasioned by the introduction of one economic reform or the other. By the mid 1986, Nigerian authorities launched policy programmers' contained in the Structural Adjustment Program (SAP). The SAP aimed at sorting

out the crises with the ultimate intention of setting the economy on the path of growth. Several forms of corrective measures were undertaken, including financial sector reform policies. Other policy response applied within the last decade with a similar purpose is the National Economic Empowerment and Development Strategy (NEEDS) introduced in 2004 (Millicent, 2013). The general purpose of this all encompassing policy is to stem the tide of unemployment, especially amongst the youth and ever rising price level in the economy. At the moment, the economic development blueprint slogan is the vision 20:2020 (Eze, 2013).

The macroeconomic policy and the economic growth with regard to interest rate, exchange rate, and inflation rates have been the central attention of the policy makers' and that of the development partners. Although the economic reforms of the 1980s witnessed some significant level of development, especially in the financial system, there were still so many unresolved economic problems; in particular, interest rate has remained

extremely high with devastating impacts on the cost of borrowing and investment in Nigeria, which has been the bane of discouragement for the foreign investment (Hakkio, 2000). Interest rates are crucial elements in the transmission of monetary policy actions to economic activities (Craig, 2000). The interest rate policy in Nigeria for example, has changed within the time frame of regulated and deregulated regimes. However, the impacts of this variable in the economic growth of Nigeria have remained controversial (Acha *et al.*, 2011). In 1993, a new framework focused on the deregulation of interest rate; interest rate was very high and volatile. In 1994, due to the high volatility of interest rates, government decided to fix the MPR at 13.5% (CBN, 1994).

The cap on interest rate adopted in 1994 was lifted in October 1996 and a flexible interest rate regime largely determined by the forces of supply and demand for funds was put in place and this has remained so, since late 1990s to date (CBN, 2007). However, the problem has been that the market-based approach to interest rate management in Nigeria has always been associated with substantial interest rate volatility (CBN, 2006). In 1986, Nigeria interest rate was as low as at 2.5%, it rose to 8.9% (CBN, 1990). Auction markets for government securities were introduced; capital adequacy standards were reviewed upward and the extension of credit based on foreign exchange deposits was banned (Hussainatu; 2008). Nigeria's interest rate fluctuates over time as the Central Bank was to regulate and supervise all interest rate re-administered. The monetary authority introduced the indirect monetary instruments in order to control the interest rate and the rate of inflation. The interest rate has doubled through the period of 1997 and 2007 attaining a peak of 24.62 (CBN, 2002).

The indirect monetary instruments aimed at the economic growth of Nigeria. According to the Central Bank of Nigeria's Annual Report and Statement of Accounts for the year ended 31st December, 2007, monetary policy alone did not automatically result in the development. The Nigerian economy appeared to improve in 2000 as the real GDP growth rate rose to 3.8 per cent compared with 2.8 per cent in 1999 and 1.8 percent in 1998 (Charles, 2010). The improved growth performance in 2000 was largely due to the positive terms of trade shock, following an oil price increase from \$18 per barrel in 1999 to \$28 per barrel in 2000 (Abwaku, 2010).

Furthermore, the economy is still and essentially bedeviled by large size and inefficient public sector, low rates of savings and investment, persistent large budget deficits, and inconsistent macroeconomic environment (Eze, 2010). All these have hampered the growth of the economy (Sanni, 2006); and Nigerians still remain expectant for brighter days ahead that improvements in the exchange rate and interest rate management could make a difference to the economic growth efforts (Jelilov,

Gylych; Kachallah Ibrahim, Fatima; Onder, Evren, 2016). However, the observed facts of exchange rate and interest rate management on macroeconomic variables that would culminate into economic growth are sluggish and not impressive let alone being sustainable (Obansa *et al.*, 2010).

What Nigeria gains from International trade and domestic investment is not consistent with the reform put in place expected to attain robust results. Accessing of funds for investment is still a challenge with lending rate being very high compared to the deposit rate in the economy (Oweoye, 2007). The end result is that almost four decades of policy somersault especially at an interest rate and exchange rate management, the Nigerian economy has not benefited immensely from the processes (Onagowora, 2007).

Interest rates play a crucial role in the efficient allocation of resources aimed at facilitating the growth and development of an economy and as a demand management technique for achieving both internal and external balance with specific attention for deposit mobilization and credit creation for enhanced economic development (Ebirigan, 2012). Even though many expansionary monetary policies have been implemented, the inflationary pressure increased and forced the CBN to raise interest rate (CBN, 2013). As a result, the interest rate raised became controversial; in this study, we will try to figure the effects of the raised interest rate on the economic growth in Nigeria. The study will examine the impact of interest rate as one of the main variables that affects economic growth in Nigeria (Jelilov, Gylych; Onder, Evren, b 2016).

Statement of the Problem

The main purpose of this study is to try to identify the impact of interest rate of economic growth. The economy continued to deal with issues as interest rates and import substitution, interest rates might considerably move downwards with the price stability at the forefront of the new leadership at the CBN, it meant that exchange rate stability was an initiative that would be sustained (Agbaje; 2014).

The interest rate is expected to have either a positive or negative impact on the economic growth. Thus decreasing the interest rate due to expansionary monetary policy may stimulate the economy because of increased economic activities (Jelilov, Gylych; Chidigo, Mary; Onder, Evren, 2016). On the other hand, slow economic growth which may be due to a tight monetary policy via a relatively high interest rate regime can lead to a fall in the economic growth (Foo-zor; 2009). We will look at the macroeconomic variable such as investment whereby the study aims to look at the impact due to the interest rate fluctuates over a period of time in relation to the macroeconomic variable mentioned above.

Research Questions

Measuring the economic growth of a country aims to assess whether the growth can cope with the growing demands of the society. This study is designed to examine the impact of interest rate on Nigeria's economic growth by answering the following questions:

- i). Is the effect of interest rate of economic growth rate significantly?
- ii). How investment is related to the interest rate?
- iii). Is the effect of investment on economic growth significant?

Objectives of the Study

The broad objective of this study is to examine the impact of interest rate on the economic growth in Nigeria. The specific objectives of this study are:

- i). To determine how investment effects of economic growth
- ii). To examine how investment is related to the interest rate
- iii). To examine the relationship between the interest rate and the economic growth.

Statement of Hypotheses

In order to achieve the research objectives, the study would make certain assumptions as follows:

Ho: Interest rate has no significant impact on the economic growth in Nigeria

Ho: Interest rate has no significant impact on investment.

Significance of the Study

This study is a source of information and will also clear some existing controversies on the impact of interest rate on the economic growth in Nigeria. This research can also be a point of reference for undergraduate students. It can also be a guide to other researchers. It shall provide solutions for a sustainable economic growth.

Limitations of the Study

The study focuses on the impact of interest rate on the economic growth in Nigeria from 1990 to 2013 using annual series data. We will get an overview of how the economic activities have performed over two decades. While writing on this work, the study was limited due to financial constraints which led to insufficient materials (i.e. Books, articles, etc).

Also getting all the necessary data was a bit challenging due to the certain conditions.

Outline of the Study

Chapter One: Introduction

- i). This gives us an overview of the background of the Nigerian economic growth and the statement of the problem. Nigeria has been faced with high interest rate, which slows down the economic growth.
- ii). The purpose of this research is to provide solutions for a sustainable economic growth
- iii). The Objectives of the study is to check whether the independent and dependent variables are related.

Chapter Two: Literature Review and Theoretical Framework

- i). This chapter is divided into four sections. In the first section, we discuss about the concepts of interest rate and growth. Then we discuss in empirical facts related to the topic in the second section. The third section focuses on the theoretical review and the last section covers the framework.

Chapter Three: Methodology

Here, the ordinary least squared regression method is used to determine whether the variables are correlated. Secondary data from 1990 to 2013 is used to perform this statistical analysis.

Chapter Four: Data analysis and interpretation of the result

In this chapter, we interpret the result of the statistical analysis, undertake using the secondary data, and their policy implications.

Chapter Five: summary, conclusion and recommendation

In this chapter, we will summarize the major findings of the study and state some recommendations for future studies.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Conceptual Issues

According to Keynes, the interest rate is the reward for not hoarding, but for parting with liquidity for a specific period of time. Keynes' definition of interest rate focuses more on the lending rate. Adebisi (2002) will define interest rate as the return or yield on equity or the opportunity cost of deferring current consumption in the

future. Some examples of interest rate include the saving rate, lending rate, and the discount rate. Professor Lerner, in Jhingan (2003), defines interest as the price which equates the supply of 'Credit' or savings plus the net increase in the amount of money in the period, to the demand for credit or investment plus net 'hoarding' in the period. This definition implies that an interest rate is the price of credit, which like other price is determined by the forces of demand and supply; in this case, the demand and supply of loanable funds (Jelilov, Gylych; Muhammad Yakubu, Maimuna;, 2015).

Ibimodo (2005) defined interest rates, as the rental payment for the use of credit by borrowers and return for parting with liquidity by lenders. Like other prices, interest rates perform a rationing function by allocating limited supply of credit among the many competing demands. Bernhardsen (2008) defines the interest rate as the real interest rate, at which inflation is stable and the production gap equals zero. That interest rate very often appears in monetary policy deliberations.

However, Irving Fisher (1936) states that interest rates are charged for a number of reasons, but one is to ensure that the creditor lowers his or her exposure to inflation. Inflation will cause a nominal amount of money in the present to have less purchasing power in the future. Expected inflation rates are an integral part of determining whether or not an interest rate is high enough for the creditor (Jelilov, Gylych; Onder, Evren;, a 2016). The real interest rate represents a fundamental valuation of temporary provision of capital (money) corresponding to a price level constant in time. It is also obvious from the above relation that if inflationary expectations change, nominal interest rates have to change aliquot at a constant real interest rate (Cottrell; 2005).

The real interest rate concept is irreplaceable in the research into the mutual relations of inflation, because assuming that the creditors are rational, inflation and nominal interest rates influence each other. For similar reasons, the real interest rate is used in broader economic analyses. Expected inflation is an unobservable quantity. In an expose analysis, it can be replaced by the actual rate of inflation in the following period, which is equivalent to assuming rational expectations (Bencik; 2009).

Theoretically less satisfactory, but easier to apply, is the assumption of adaptive expectations; this replaces expected inflation in the future by actual inflation in the present. Inflation is very important, because when there is increased inflation over a long period of time, economic agents recognize the actual value of money, stop suffering from money illusion and accept increased nominal rates. Therefore, investment as the main link between the interest rates and the real economy is considered a function of the real interest rates, as standard (Bencik; 2009).

On the other hand, Economic growth is the process by which national income or output is increased. An economy is said to be growing if there is a sustained increase in the actual output of goods and services per head. The rate of economic growth, therefore measures the percentage increase in real national output, during a given period of time, usually a year, over the preceding year's level Anyanwoncha (1993). Jhingan (2003) defines economic growth as a process whereby the real per capita income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services. A nation's economic growth can be measured in terms of its national income and the real per capital income. Economic growth is a very important goal of macro-economic policy because of the role it plays in economic development (Jelilov, 2016).

Management of Interest rate in Nigeria

The interest rate was first used as an instrument of Monetary Policy in Nigeria in 1962 following the introduction of money market instruments. The interest rate then was made competitive to ensure repatriation-of funds kept aboard. During the period of high government borrowing for example interest rate was reduced to minimize cost of servicing public debt, as was the case in the 1960's. Interest rate in Nigeria over the years has therefore played a dominant role as one of the instruments used by the Federal Government in Managing Monetary Policy. The Structural Adjustment Program (SAP), which was introduced by the Federal Government of Nigeria in 1986, was a comprehensive economic restructuring program as it emphasized increased reliance on market forces. The SAP initiated some reforms, which focused on structural changes, monetary policy, interest rate administration and foreign exchange management; etc encompasses both financial market liberalization and institutional building in the financial sector (Akingunla; 2012)

Interest rate in Nigeria over the years has played an important role as one of the instruments used by the Central Bank in Managing Monetary Policy. The use of interest rate as an instrument of monetary policy was based on two main assumptions interest rate regulation; more so that, interest rate has since remained one of the instruments of managing the Monetary Policy of the Federal Government of Nigeria. Interest rate regulations have always been contained either in the Federal Government Annual Budget document or the Monetary/Credit Policy Circulars of the Central Bank of Nigeria (CBN) from time to time(Jelilov, Gylych; Musa, Muhammad;, 2016).

In August 1987, the Central Bank of Nigeria (CBN) liberalized the interest rate regime and adopted the policy of fixing only its Minimum Rediscount Rate (MRR). This was however modified in 1989, when the Central Bank of Nigeria (CBN) issued further directives on the required spreads between deposit and lending rates (Ojodu H; 2012). Partial deregulation was restored in 1992 when financial institutions were required to only maintain a specified spread between their average cost of funds and maximum lending rates. The removal of the maximum lending rate ceiling in 1993 by the Central Bank of Nigeria (CBN) saw interest rates rising to unprecedented levels in sympathy with rising inflation rate which rendered banks' high lending rates negative in real terms. Interest rates in 1993 were volatile and rose to unprecedented levels. The behavior of interest rates was traceable to a number of factors including:

- i). The high rate of domestic inflation arising from the huge fiscal deficit of Federal Government which was financed mainly by Central Bank;
- ii). The undue discretion which the deregulation of interest rates conferred on key market players in pricing their funds as well as the arbitraging activities of market speculators; and
- iii). The use of stabilization securities and the system of allocation of foreign exchange both induced the sterilization of large funds at the CBN.

There was major objective to keep the supply of money just within the required level needed for the target economic growth rate in a particular year. The policy of interest rate deregulation was retained in 1997, and developments since the beginning of the year show relative stability in the rates. Indeed, contrary to expectations, interest rates had fallen. Deposit rates on savings account at commercial banks declined from an average of 10.1 percent in December 1996 to 7.5 percent in March and further to 5.9 percent at the end of April 1997. Similarly, 3-month deposit rates declined from 12.3 percent in December 1996 to 7.3 percent in April 1997.

During the fiscal year 2000, monetary, and other financial sector policies were also designed to maintain internal and external balance. The primary objective was to maintain the inflation rate at single digit. In order to achieve this objective, the monetary program focused on curtailing excess liquidity in the banking system and enhancing the viability of the external sector as well as the stability of the financial system. Other important objectives included enhanced growth of the economy and reduction in unemployment. The performance of the financial sector in 2000 indicated that deposit and lending rates fluctuated downwards due to liquidity overhang in the banking system and the reduction in MRR from 18.0 to 14.0, cash reserve ratio, from 12.0 to 10.0 percent, and liquidity ratio from 40.0 to 35.0 percent.

The Monetary Policy Committee (MPC) of the Central Bank of Nigeria (CBN) on 5th June 2007 reviewed the major macroeconomic development and the implementation of fiscal, monetary and exchange rate policies in the first five months of 2007, as well as the challenges for the rest of the year. The MPC noted with satisfaction the macroeconomic performances (CBN; 2009).

Theoretical Review

The Classical Theory of Interest

This theory according to Vanish (2000) cannot be ascribed to any one single writer belonging to the classical school. Following Adam Smith, the classical writers being interested in those fundamental forces which determined the long-term interest rate, disregarded those factors of temporary and secondary nature which characterized the short-run disequilibrium situations. However it is widely accepted that the theory was propounded by Marshall (1920) and Pigou (1932) and this theory is known as the demand and supply theory of saving. The theory states that the rate of interest is determined by the supply and demand of capital. The supply of capital is governed by time preference and the demand for capital is determined by the expected productivity of capital. The time and preference are dependent on savings (Jelilov, Gylych; Abdulrahman, Samira; Isik, Abdulrahman,; 2015). According to Vanish (2000) the demand for capital consists of the demand for productive and consumptive purpose. Capital is demanded by the investors because it is productive. But the productivity of capital is subject to the law of variable proportions (additional units of capital are not productive as their earlier units).

However, the supply of capital according to Jhingan (2001) depends upon savings rather upon the will to save and the power to save of the community. Some people save irrespective of the rate. They would continue to save even if the rate of interest were zero. There are others who save because the current rate of interest induces them to save and reduce when the rates are low. The higher the rate of interest, the larger the community savings and more will be the supply of funds. The supply curve of capital or the savings curve moves upward to the right.

Theory of Interest, and the Role of Interest Rates in the Economy

The interest rate determination in the economy was intensively studied by many economists. Two of the most influential theories are Irving Fisher's classical approach, extended to loanable funds theory, and liquidity preference theory, developed by John M. Keynes.

Interest rate is determined as the price paid by borrower (debtor) to a lender (creditor) for the use of resources during some interval (Fabozzi et al., 1998). There is no single measure of interest rate in the economy and yield to maturity on an asset is accepted by most economists as a measure of interest rate (Mishkin, 2001).

According to Fisher, individuals may either consume or save their incomes. Individuals save when they consider future consumption as preferable to current consumption, they consume less now to be able to consume more later. The factors that influence saving decisions differ between individuals. First affecting factor is income. With higher income individual may save more, though the decision to save is determined not only by the level of income, but also by expectations about future income, marginal propensities to consume and save preferences to interchange consumption and saving between time periods (Jelilov, Gylych; Kalyoncu, Huseyin; Isik, Abdurahman, 2015).

Moreover, these preferences may change after change in the level of income. Another factor affecting the level of savings is compensation obtained by individual for lending his saving to another individual, who needs additional funds and ready to pay for their use. This compensation or payment for use of funds is interest rate. The more the interest rate, the more individual's opportunity costs of consumption, and the more he will save. The total savings in the economy is a sum of all individuals' savings. Interest rate is positive if there is demand for the savings from the side of borrowers. Borrowers are willing to pay for saving if there are profitable opportunities to invest. The cost of funds for borrowers is interest rate. The more interest rate, the fewer borrowers will invest, so investments are a negative function of interest rate. Borrowers will be willing to invest as long as marginal benefit from investments equals marginal cost, or interest rate. Total demand for investment in the economy is determined as the sum of individual demands. Interest rate is cost of borrowing for one individual and payment for lending for others. The equilibrium interest rate equates total amounts of savings demanded and supplied (Jelilov, Gylych; Waziri, Fadimatu; Isik, Abdurahman, 2016).

There is a distinction between nominal and real interest rates. Fabozzi, (1998) determine nominal interest rate as the number of monetary units to be paid per unit borrowed and real interest rate as the growth in the power to consume over the life of a loan. If there is no inflation in the economy, there would be no difference to individuals whether interest rate is nominal or real. Fisher was one of the first developers of the theory of interest rates and he was one of the first who introduced this distinction. During inflation nominal rate exceeds real and during deflation real rate exceeds nominal. Fisher suggests that in the long-run real interest rate is constant and expectations about inflation affect only nominal

interest rate. Fisher's theory is very general and does not take into account many factors influencing the level of interest rates. The Loanable Funds Theory extends Fisher's approach and incorporates into the analysis government actions, banks, bonds and cash investments. The results are similar to classical approach interaction of total demand for funds, negatively related to interest rate, and total supply of funds, positively related to interest rate, determines the equilibrium interest rate and amount of savings or investments. On the other hand, the Liquidity Preference Model, introduced by John Maynard Keynes, is an alternative approach to the determination of interest rate in the economy.

This model analyses the behavior of interest rates as a reaction to changes in money supply and money demand, rather than changes in supply and demand for savings. The model assumes only two assets: money and bonds. The logic of the model is following: individuals hold money for current transactions and hold bonds that earn interest. Interest rate in this case is an opportunity cost of holding money, since individual may convert money into bonds and earn more. If the interest rate for bonds is low, opportunity costs are not high and individual more freely hold cash balances. If the rate is high, opportunity costs increase and people are less willing to hold money instead of profitable bonds.

Thus, there is a negative relationship between money demand and interest rate in this theory. Keynes assumes that money supply is not affected by the level of interest rate and government and central bank control money supply. The change in the equilibrium interest rate may happen due to either supply or demand side changes. Main factors that affect the demand for money in the Liquidity Preference Theory are level of income and price level in the economy. Increase in income, increases the demand for money due to higher liquidity of money. The same effect has an increase in price level. People want to hold real money balances to be able to buy the same goods as before inflation, and thus increase their demand for money holding (Jelilov, 2015).

Operations of central bank and commercial banks affect money supply. Sachs and Larrain (1999), Mishkin (2001) state that Central bank controls monetary base (MB), which is currency in circulation and reserves, through several tools, such as open market operations - purchase and sale of bonds, discount lending to banking system, reserve requirements on deposits in the banking system and foreign currency market operations. Discount rate is especially important tool of influence on interest rates in the economy, since it not only influences the price of credit resources for the banks, but also contains information on level of interest rates in the economy, so may be followed by commercial rates. The extent to which increase in monetary base may increase money supply is affected by the level of required reservation, currency/deposit and reserves/deposit ratios, or money

multiplier. Sachs and Larrain (1999) determine the money multiplier as follows:

$$D = C_d + 1 / C_d + R_d$$

Where:

C_d and R_d are currency/deposit and reserve/deposit ratio respectively.

Money supply increase is thus money multiplier time's increase in monetary base. The result of money supply increase on interest rate is ambiguous, since, according to Mishkin (2001), this contains different effects on the interest rate; namely liquidity effect, income effect, price level effect and expected inflation effect. Liquidity effect theoretically reduces interest rate by shifting money supply curve to the right, and new equilibrium is with lower interest and larger money supply. This effect, though, may be followed by other effects, which would reverse the fall in interest. Income effect through influence of the expansion on aggregate demand will tend to increase demand for money and the effect is clear: it will increase interest rate.

Price level effect of the increase in money supply also increases demand for money and, consequently, interest rate. This effect works in similar fashion as income effect. If economy produces at full employment, increase in money supply most likely will lead to increase in inflation, and this, recalling Fisher's Law, will increase nominal interest rate. In practice, it is impossible to predict which effect is prevalent after money supply increase. These effects will differ in different economies or even in one economy during different stages.

Interest rate and factors affecting Liquidity-Money model

Interaction of interest rates and other macroeconomic indicators can be studied using liquidity-money model, developed by John Hicks on the basis Keynes's work (Mishkin, 2001). Interest rate in liquidity-money model is a linking chain between monetary and real sectors of economy. This model is very useful for policy evaluation purposes, since it allows forecasting effects of monetary policy under different exchange rate policies on economy. Liquidity-money shows relationship between interest rate and aggregate output, for which quantity of money demanded, equals quantity of money supplied. Normal liquidity-money has a higher output level demand for money increases, causing rise in interest rate.

The effects of different policies in liquidity-money model depend on variety of factors, such as regime of exchange rate, openness to foreign trade and capitals, etc. Such variety of possible outcomes makes the liquidity-money model even more useful policy model. Interest rate will be

permanently higher in the economy if its currency depreciates. Fall in interest rate in given period causes depreciation of the currency in present period to compensate for future appreciation and improves current account through effect on terms of trade. This effect of fall in interest rate will increase in real GDP through effect on exchange rate contributes to direct effect on domestic consumption and investment. The theoretical effect of fall in interest rate is to increase aggregate output.

Empirical Review

Many studies have highlighted the relationship between interest rate and economic growth. For instance, Obamuyi (2009) investigated the relationship between interest rate and economic growth in Nigeria using time series data covering 1970-2006. He applied co-integration and error correction model to capture both the long run and short run dynamics of variables in the model. The result indicated that real lending rates have significant effect on economic growth.

According to D'Adda and Scorcu (2001) studied relationship between economic growth and actual interest rate in 1960-1994 with use of panel database. His results after study indicate that there is negative correlation between growth and actual interest rate and decrease of economic growth in recent decade's results from execution of limiting monetary policies. Other studies based on the impact of foreign interest rate on the economy show that many economies are affected by conditions in foreign countries. Obanuyi (2009) studies the relationship between interest rate and economic growth in Nigeria. The study employed co integration and error correction modeling techniques and revealed that lending rate has significant effect on economic growth, the study then postulated that investment friendly interest rate policies necessary for promoting economic growth needs to be formulated and properly implemented.

Brzoza-Brzezina and Cuaresma (2008) use a dynamic factor model to investigate the relative importance of domestic and international factors as determinants of short-term real interest rates in 22 countries over the period of 1985-2005. They find that the common world factor accounts for about half of the variance of real rates and that its role was growing up to about the mid-1990s, after which it leveled out and remained relatively constant. Individual country factors are also more important in countries with floating exchange rates.

Onwiodiokit's (2005), study on fiscal deficits, inflation and output growth in Nigeria, adopted a vector error correction model approach. The result showed monotonically decreasing relationship with prices some lags. The result is at variance with the popular view in the literature that seems to suggest that fiscal deficit is necessarily inflationary. Oosterbaan *et al.*, (2000) estimated the relationship between the annual rate of

economic growth and the real rate of interest. The study shows the effect of a rising real interest rate on growth and claimed that growth is maximized when the real rate of interest lies within the normal range of say, -5 to +15%. Later on, De Gregorio and Guidotti (2009) cited in Oosterbaan *et al.*, (2000) suggest that the relationship between real interest rates and economic growth might resemble an inverted U-curve: Very low (and negative) real interest rates tend to cause financial disintermediation and hence reduce growth.

In India, Malick and Agarwal (2007) found that none of the three measures of real interest rate seemed to exert any direct influence on growth of real output. This unusual result they ascribed to the possibility that investment, which is an important determinant of growth, is conditioned by several factors other than real interest rate alone. On the other hand, Mohanty, Chakraborty and Gangadaran (2012) highlighted the presence of inverse relationship between growth and real lending rates in India, with empirical evidence on real lending rates Granger causing both overall GDP and non-agricultural GDP growth.

Ke Zhang and Bing Liang (2007) used a multivariate Generalized Autoregressive Conditionally Heteroscedastic (GARCH) model with Error Corrections Terms (ECM) to investigate the determinants of swap spreads in the U.S. interest rate market. They used monthly data for a total of 106 observations to empirically investigate the importance of the determinants of interest rate swap spread in U.S. derivative market. They also found out that changes in the interest rate swap spread would be related positively to changes in the implied Stock market volatility; but they disproved their hypothesis that the changes in the swap spread would be related positively to changes in the default premium in corporate bond market. They however, found that swap spreads in the U.S. market showed negatively strong correlation with default premium with z-statistics of 2.01 or better. They also concluded that changes in the interest rate swap spread would be related negatively to the changes in the business cycle.

Rogoffs and Reinhartl (2004) opined that developing countries are relatively better off in the choice of flexible exchange rate regimes. While Oyejide and Udun (2010) added that countries at a relatively early stage of financial development and integration are better-off choosing fixed or relatively rigid regimes. Furthermore, David *et al.*, (2010) submitted that for developing and emerging market countries a non-linear relationship exists between growth and regimes choice, with fixed and managed float regimes associated with the highest rate of growth. They further pointed out that regimes choice does not affect the rate of economic growth for the Advanced European countries. They conclude that more flexible regimes are rather associated with slightly higher growth rates over there.

Hasanov (2010) examined possibility of threshold effect of inflation on economic growth in Azerbaijani economy over the period of 2000-2009. Estimated threshold model indicated that there is a non-linear relationship between economic growth and inflation in the Azerbaijani economy and threshold level of inflation for GDP growth is 13 percent. Below threshold level inflation has statistically significant positive effect on GDP growth, but this positive relationship becomes negative one when inflation exceeds 13 percent. Nisha and Nishat (2011) found that economic activities can be created by flow of reserves to the most productive investments, as investors usually decide to invest in certain selected companies. Shahmoradi and Baghbanyan (2011) concentrated on the determining factors of foreign direct investment inflows in developing countries; study was conducted for the period 1990-2007. Obamuyi and Olorunfemi (2011) examined the implications of financial reform and interest rate behavior on the economic growth in Nigeria. Study results revealed that financial reform and interest rates have significant impact on economic growth in Nigeria; also, results implied that the interest rate behavior is important for economic growth.

Khalid (2007) used four separate equations to measure the relationship between interest rate deregulation and economic growth in Pakistan between 1981 and 2002. His conclusion was that interest rate liberalization has not impacted positively on economic growth in Pakistan as most of the indicators of the financial liberalization do not show any significant impact on saving, investment or growth. A study by Omar *et al.*, (2007) on the impact of interest rate liberalization on the economy of Bangladesh revealed that long-run economic growth in Bangladesh is largely explained by physical capital and real interest rate. They went on to state that financial liberalization has had significant negative impacts on economic growth implying that financial reforms failed to attract new investment. This they believe is due to the adverse investment climate existing in that country.

Oforegbunam (2012) investigated the effect of interest rate indices on money supply from 1990 to 2007. His study carries out an autoregressive analysis on the variable as well as an assessment of the effects on interest rate indices on money supply. The results among others show that minimum rediscount rate and savings rate have made significant positive impact on money supply. On the other hand, lending rate has made insignificant negative impact on money supply. Based on his findings, he conclude that the inability of the monetary authority to narrow the gap between saving and lending rate remains a key to the problem of instability in money supply, hence concerted effort must be made to strengthen the capacity of regulatory authorities to use market based options monitor and control periodic volatility in money supply through an effective interest

rate regimes. Chete (2006) also investigated the relationship between real interest rate and economic growth in Nigeria. The result showed that there was a unique long run relationship between interest rate and economic growth. He summed thus: that interest rate is an important determinant of economic growth in Nigeria. However, the deregulation of interest rate in Nigeria may not optimally achieve its goal if those other factors that affect investment negatively are not sorted out and tackled, he concluded.

Adekunla and Akungba (2009) investigated the relationship between interest rates and economic growth in Nigeria, using time series analysis and annual data from 1970 - 2006. The co-integration and error correction model were used to capture both the long-run and short-run dynamics of the variables in the model. The empirical results indicate that real lending rates have significant effect on economic growth. There also exists a unique long-run relationship between economic growth and its determinants, including interest rate. The results imply that the behavior of interest rate is important for economic growth in view of the relationships between interest rates and inflation and growth. Thus, the formulation and implementation of financial policies that enhance investment-friendly rate of interest is necessary for promoting economic growth in Nigeria.

Nicholas (2010) also examined the dynamic relationship between interest rate reforms; bank based financial development and economic growth in South Africa using co-integration and Error correction models, the study finds a strong support for the positive impacts of interest rate reforms on financial development. The study also discovered that interest rate reforms do not Granger cause investment and economic growth.

Theoretical Framework

In order to determine the relationship between interest rate and economic growth in Nigeria, we assume that there exists a considerable level of relationship among macroeconomic variables. The Keynesian model allows this study to trace out the effects of interest rate on the economic growth which is referred to as the GDP. Consider that the growth responds to a change in the interest rate; if the interest rate declines and the investment will increase which will lead to growth. Thus to Keynes, an economy is said to be efficient when all the resources are being fully employed which will lead to an effective demand of its output. The Keynesian recognize the possibilities of government crowding-out investment through increasing cost of borrowing, that is, interest rate (Okpanachi; 2007). Let's assume that equation is given as:

$$Y = C + I \tag{1}$$

Where Y is the gross domestic product, C is the consumption/Savings, I is the investment. In accordance to the Keynesian model, we can incorporate other macroeconomic variables in order to run up the statistical analysis. Therefore, the equation will be:

$$Y = C + I + IR \tag{2}$$

In summary, the interest rate is influenced by many economic variables and it itself influences most macroeconomic indicators. Fortunately, according to liquidity-money model, government has under control most macroeconomic indicators, and varying its policy and policy features, may affect economy, and interest rate in particular.

METHODOLOGY

In any research, the method that has to be adopted is determined by the nature of the study that is being investigated. Here, the ordinary least square regression method will be used.

Nature and Source of Data

In this study, we used secondary data that covers the period of 1990 to 2013 which is obtained from the Central Bank of Nigeria statistical bulletin and journals. It should be noted that the data used in this research are time series data covering the period from 1990 to 2013. The details of the data collected will be presented in Chapter Four.

Technique of Data Analysis

The technique used in this research is the ordinary least square regression method. It is a method for estimating the unknown parameters in a linear regression model, with the goal of minimizing the differences between the observed responses in some arbitrary dataset and the responses predicted by the linear approximation of the data. The regression analysis is a statistical process for estimating the relationships among variables. This includes many techniques for modeling and analyzed several variables when the focus is on the relationship between a dependent variable and one or more independent variables.

Model Specification

The econometric modeling procedure adopted for this research is the ordinary least square (OLS) of the classical linear regression model (Gujarati 2007). We would extend the Keynes model specification to

incorporate some other determinants of interest rate in Nigeria. Therefore, the model will be specified as:

$$\text{INT} = \beta_0 + \beta_1 \text{INV} + u \quad \text{f(3.1)}$$

$$\text{investment).....3.1}$$

$$\text{INT} = \beta_0 + \beta_1 \text{INV} + u \quad \text{3.2}$$

Where

INT = Interest rate
 INV = Investment

Most econometric models link an observable dependent variable Y to observable explanatory variables X_1, \dots, X_n an unobservable variable U (the error term if the model is a linear regression), and parameters β_1, \dots, β_n . U is the error term introduced to our variables, β_0 is the intercept which explains the interest rate when the explanatory variables are equal to zero; and β_1, β_2 are coefficients attached to the explanatory variables explaining their affects on the dependent variable. To specify the model, we will use the GRETl software in order to evaluate the impact of interest rate on the economic growth in Nigeria.

DATA ANALYSIS AND INTERPRETATION OF RESULTS

This chapter presents the data used to perform the statistical analysis and the results obtained from the OLS method. The results will be presented below.

Presentation of Results

INT = 16.1796 + 1.5529INV
 S.E = (1.10136) (0.0409435)
 $R^2 = 0.098788$
 Adjusted $R^2 = 0.057824$
 Mean of dependent variable = 19.08083
 Durbin Watson = 1.801118

Interpretation of the Results

The statistical evidence emanating from the study shows that the adjusted R^2 is 0.057824, which means that the regressed model explains 5% of the total variation occurring on the dependent variable proxy by interest rate. This means that at least one of the investments explains about 5% the impact of interest rate on the economic growth within the period review. The results further shows that investment is statistically significant at 0.05 interval level under the period review. Therefore, a percent change in the investment would lead to 0.057 percent change in growth. Thus, interest rate is statistically significant.

Policy Implication of Findings

The results found that the investment has significant effect on the economic growth in Nigeria. The interest rate should be properly monitored. The Nigerian authorities should formulate and implement policies that would lead to economic growth.

The Nigerian authorities should lower the interest rate so that the investment will increase which in turn will lead to economic growth. Finally, the investment influences growth. Therefore, proper attention otherwise policy should be entrenched on interest rate to adequately enhance economic growth.

SUMMARY OF MAJOR FINDINGS

This study examined the impact of interest rate on economic growth in Nigeria from 1990 to 2013. The result found that the interest rate has a slight impact on growth; however the growth can be improved by lower the interest rate which will increase the investment. The Nigerian authorities should set interest rate policies that will boost the economic growth. Therefore, proper measure should be taken in order to have a more rapid economic growth.

CONCLUSION

From the findings, the study concludes that in Nigeria the interest rate has significant impact on the economic growth. The statistical analysis result reveals that a unit change in the investment will lead to growth. This study came out with empirical evidence that will help in understanding the relationship between variables used in the model drawing from the Nigerian economy from 1990 to 2013.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are hereby made:

- i). The Nigerian authorities should carry out reforms that would enhance the role of interest rate in order to mobilize funds for investment purpose. This may be done by a complete regulation of the interest rate. This is for a long-term economic performance.
- ii). In order to have a more rapid economic growth, the Nigerian authorities should lower the interest rate so that the investment will increase.
- iii). The policy direction of interest rate, investment must be seen, not only in the context of price and financial stability but also in improving development in Nigeria.

DATA PRESENTATION

Macroeconomic Indicators

Year	GDP (million N)	INTR (%)	INV (%)
1990	472648.8	25.50	7.5
1991	545672.4	20.01	13.0
1992	875342.5	29.80	44.8
1993	1089680	18.32	57.2
1994	1399703	21.00	57.0
1995	2907358	20.18	72.8
1996	4032300	19.74	29.3
1997	4189250	13.54	8.5
1998	3989450	18.29	10.0
1999	4679212	21.32	6.6
2000	6713575	17.98	6.9
2001	6895198	18.29	18.9
2002	7795758	24.85	12.9
2003	9913518	20.71	14.0
2004	11411067	19.18	15.0
2005	14610881	17.95	17.8
2006	18564595	17.26	8.2
2007	20657318	16.94	5.4
2008	24296329	15.14	11.6
2009	24794239	18.99	12.4
2010	33984754	17.59	13.7
2011	37409861	16.69	10.8
2012	40544100	16.51	12.1
2013	45408317	12.16	9.7

Source: CBN Statistical Bulletin; 2013 Edition

Model 1: OLS, using observations 1990-2013 (T = 24)					
Dependent variable: INTR					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	17.8195	1.10136	16.1796	<0.00001	***
INV	0.0635822	0.0409435	1.5529	0.13471	
Mean dependent var	19.08083	S.D. dependent var		3.754189	
Sum squared resid	292.1373	S.E. of regression		3.644032	
R-squared	0.098788	Adjusted R-squared		0.057824	
F(1, 22)	2.411579	P-value(F)		0.134709	
Log-likelihood	-64.04457	Akaike criterion		132.0891	
Schwarz criterion	134.4452	Hannan-Quinn		132.7142	
rho	0.107734	Durbin-Watson		1.801118	

Source: Computed by GRETL (2013)

Limitations and Suggestion for future studies

This study was faced with some limitations that should be addressed:

Limited access to materials such as journals, books, articles, etc which was due to lack of funds. Researchers should be able to have enough funds to invest in materials in order to have the best outcome of the study. The time management, with an overloaded schedule, time was limited. Therefore, future researchers should properly manage their time in order to do the research efficiently. Further research should be carried out on interest rate and economic growth in Nigeria.

REFERENCES

- A. Koutsoyiannis "Theory Of Econometrics (second edition)"
- Abayomi Toyin Onanuga¹ and Adebayo M. Shittu (2010) "the Determinants Of Interest -Rates In Nigeria: An Errorcorrection Model"
- Abdul Aziz Farid Saymeh and Marwan Mohammad Abu Orabi (2013) The Effect Of Interest Rate, Inflation Rate, Gdp, On Real Economic Growth Rate In Jordan.
- Abdul Aziz Farid Saymeh and Marwan Mohammad Abu Orabi (2013) " The Effect of Interest Rate, Inflation Rate, GDP, on Real Economic Growth Rate in Jordan".
- Acha Ikechukwu A and Acha Chigozie K (2011) "Interest Rates In Nigeria: An Analytical Perspective" Chizea, B. (2008) Interest Rates, Exchange Rates and Inflation. The Nigerian Banker Oct-Dec. 6-11.
- Adaeze Glory Chike-Okoli (2004) "Research Methodology"
- Aghion, P. and P. Howitt, 2009. The Economics of Growth. (The MIT Press, Cambridge, Massachusetts)
- Alan Griffiths and Stuart Wall "Applied Economic 11th Edition" Abu (2006). Trends In The Interest Rate-Investment-GDP Growth Relationship. Romanian Journal Of Economics. 1(3), 27-73
- Awakamma C (2014). Influence of Interest Rates Regimes on Deposit Money Banks Credit In Nigeria: An Econometric Assessment. The Clue Institute International Academic Conference Orlamdo, Florida, 1(3):1-12
- Central Bank Of Nigeria (2013) Statement Of Accounts And Annual Reports. Abuja: Central Bank Of Nigeria.
- Charles N.O. Mordi, Abwaku Englama and Banji S. Adebusi (2010) "The Changing Structure Of The Nigerian Economy"
- Chete L.N. (2006). The Determinants Of Interest Rate In Nigeria; A Monograph Publication Of Nigerian Institute Of Social And Economic Research (NISER), Ibadan, Nigeria.
- David, O. J; Umeh, C & Abu, A. A (2010). The Effect Of Exchange Rate Fluctuations On The Nigerian Manufacturing Sector, *African Journal of Business Management*, 4(10), 2994-2998
- Essia, U. (2005) Macroeconomic Theory. Calabar:Saesprint (Nig) Co.
- For Zor Thang (2009) Impact Of Interest Rate And Exchange Rate On The Stock Market Index In Malaysia: A Cointegration Analysis
- Fourie, L.J., and H. B. Falkena and W. J. Kok (1999), Student Guide To The South African Financial System, Second Edition, Cape Town.
- Giovanni, J. and J. Shambaugh, 2007. "The Impact Of Foreign Interest Rate On The Economy. The Role Of Exchange Regime".
- H.L. Bhatia (2006) "History of Economic Thought"
- Jelilov, G. (2015). An Outlook of The Recent Entrepreneurship and Economic Problems in Nigeria: An Expatriate Perspective. BRITISH JOURNAL OF ADVANCE ACADEMIC RESEARCH , 78-85.
- Jelilov, G. (2015). An Outlook of The Recent Entrepreneurship and Economic Problems in Nigeria: An Expatriate Perspective. BRITISH JOURNAL OF ADVANCE ACADEMIC RESEARCH , 78-85.
- Jelilov, G. (2016). THE IMPACT OF INTEREST RATE ON ECONOMIC GROWTH EXAMPLE OF NIGERIA. African Journal of Social Sciences , 51-64.
- Jelilov, G., Kalyoncu, H., & Isik, A. (2015). Currency Substitution: Evidence from Nigeria. The Empirical Economics Letters , 737-744.
- Jelilov, Gylych; Abdulrahman, Samira; Isik, Abdurahman;. (2015). The Impact of Tax Reforms and Economic Growth in Nigeria. The Empirical Economics Letters , 1100-1115.
- Jelilov, Gylych; Chidigo, Mary; Onder, Evren. (2016). Firm Size And Firm Growth: Testing Gibrat's Law On 17 Nigeria Manufacturing Industry (2000-2011). The International Journal of Social Sciences and Humanities Invention , 1869-1879.
- Jelilov, Gylych; Kachallah Ibrahim, Fatima; Onder, Evren. (2016). An Appraisal of the Impact of the Dearth of Pre-Hospital Emergency Medical Services to Road Traffic Accident Victims in Nigeria. International Journal of Humanities and Social Science Invention , 34-40.
- Jelilov, Gylych; Muhammad Yakubu, Maimuna;. (2015). Economic Growth and Energy Consumption in Nigeria. The Empirical Economics Letters , 1187-1196.
- Jelilov, Gylych; Musa, Muhammad;. (2016). THE IMPACT OF GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA. SACHA JOURNAL OF POLICY AND STRATEGIC STUDIES , 15 - 23.
- Jelilov, Gylych; Onder, Evren. (2016). Entrepreneurship: Issues and Solutions Evidence From Nigeria. Pyrex Journal of Business and Finance Management Research , 10-013.
- Jelilov, Gylych; Onder, Evren;. (2016). Entrepreneurship in Nigeria Realities on Ground. Pyrex Journal of Business and Finance Management Research , 006-009.
- Jelilov, Gylych; Waziri, Fadimatu; Isik, Abdurahman;. (2016). Interest Rate Behaviour and its Relationship with Economic Growth in Nigeria: An Error Correction Model Approach. The Empirical Economics Letters , 245-255.
- Jhingan M.L. (2001). "Monetary Economics" 5th Edition, Vrinda Publications (P) Ltd. Delhi.
- M. L. Jhingan (2009) "Advance Economic Theory 13th Edition"
- McKinnon, R. and Shaw, (1973). Money And Capital In International Development. The Brokenness Institution, Washington.
- Mehdi Basirat and Arezoo Nasirpour (2014) "The Effect Of Exchange Rate Fluctuations On Economic Growth Considering The Level Of Development Of Financial Markets In Selected Developing Countries".
- Nicholas, M.O (2010). Interest Rate Deregulation, Bank Development And Economic Growth In South Africa: An Empirical Investigation. *International Business And Economic Journal*, 9(11), 131-142.
- Obansa, S. A. J., Okoroafor, O. K. D., Aluko, O. O., and Millicent Eze (2013) Percieved Relationship Between Exchange Rate, Interest Rate And Economic Growth In Nigeria: 1970-2010".
- Oosterbaan et al. (2000): Determinants Of Growth: retrieved from <http://books.google.co.uk/books>
- Saharan Africa. In: Iqbal, Z. And K. Ravi (Eds), External Finance For Low Income Countries. IMF Institute, Washington DC.
- Soyibo&Olayiwola (2000). Interest Rate Policy And The Promotion Of Savings Investment And Resource Mobilization In Nigeria. Development Policy Centre, Ibadan.
- Todaro Smith, S.C. (2006) Economic Development, 9th Edn;

Harlow: Pearson, Addison Wesley
 Were, M. (2001) The Impact Of External Debt On Economic Growth
 In Kenya: An Empirical Assessment, Discussion Paper No
 2001/116

Yahya Zakaria Abdullahi (2013) Analysis Of The Relationship
 Between Interest Rate And Economic Growth In Nigeria.

APPENDICES

Macroeconomic indicators (1990-2013)

Year	GDP	INTR	INV
1990	472648.8	25.50	7.5
1991	545672.4	20.01	13.0
1992	875342.5	29.80	44.8
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1994	1399703	21.00	57.0
1995	2907358	20.18	72.8
1996	4032300	19.74	29.3
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1998	3989450	18.29	10.0
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2006	18564595	17.26	8.2
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2009	24794239	18.99	12.4
2010	33984754	17.59	13.7
2011	37409861	16.69	10.8
2012	40544100	16.51	12.1
2013	45408317	12.16	9.7

Source: Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics (2013)

Descriptive Summary of Data

Summary Statistics, using the observations 1990-2013

Variable	Mean	Median	Minimum	Maximum
INTR	19.0808	18.3050	12.1600	29.8000
INV	19.8375	12.6500	5.40000	72.8000
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
INTR	3.75419	0.196752	0.920281	1.48833
INV	18.5581	0.935505	1.74184	1.71467
Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
INTR	12.5050	28.7250	3.55750	0
INV	5.70000	68.9000	9.82500	0

Source: Computed by GRETL (2013)**Ordinary Least Square Regression**

Model 1: OLS, using observations 1990-2013 (T = 24)

Dependent variable: INTR

	Coefficient	Std. Error	t-ratio	p-value
const	17.8195	1.10136	16.1796	<0.00001 ***
INV	0.0635822	0.0409435	1.5529	0.13471
Mean dependent var	19.08083	S.D. dependent var		3.754189
Sum squared resid	292.1373	S.E. of regression		3.644032
R-squared	0.098788	Adjusted R-squared		0.057824
F(1, 22)	2.411579	P-value(F)		0.134709
Log-likelihood	-64.04457	Akaike criterion		132.0891
Schwarz criterion	134.4452	Hannan-Quinn		132.7142
rho	0.107734	Durbin-Watson		1.801118

Source: Computed By GRETL (2013)