ANALYSIS OF INTEREST RATE ON SAVINGS AND DOMESTIC INVESTMENT IN NIGERIA

IKHUMETSE PHILIP OSHIORENOYA

MATRIC NO: SBS/2282070373

BEING A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF BANKING AND FINANCE, SCHOOL OF BUSINESS STUDIES AUCHI POLYTECHNIC, AUCHI

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF HIGHER NATIONAL DIPLOMA (HND) IN BANKING AND FINANCE

DECEMBER, 2022

CERTIFICATION

We the undersigned hereby certify that this project titled "Analysis of Interest Rate on Savings and Domestic Investment in Nigeria", was carried out by **IKHUMETSE PHILIP OSHIORENOYA** with Matric No. **SBS/2282070373**, under our supervision in the Department of Banking and Finance, Auchi Polytechnic, Auchi, Edo State.

We also certify that the project is adequate both in scope and quality and submitted to the Department of Banking and Finance in requirements of the award of Higher National Diploma (HND) in Banking and Finance.

_____ _____

Mr. Olakunle Adeniji **Date**

Project Supervisor

_____ _____

Mr. Musa A. Abdullai **Date**

(A.G) Head of Department

DEDICATION

I dedicate this project to God Almighty who has been there from the beginning to this very point.

ACKNOWLEDGEMENTS

I wish to express my profound gratitude to God Almighty, the giver of life and wisdom for his infinite mercies, love towards me and making this program a success.

My sincere appreciation goes to my project supervisor, Mr. Olakunle Adeniyi, for taking his time to monitor and read through the manuscript of this work despite his tight schedule.

My special acknowledgement and sincere gratitude also goes to my mother Mrs. Edna Ikhumetse, I really want to say thank you very much for not giving up on me and making my dream come through as a graduate toady.

Finally my special appreciation goes to my siblings, Mirable, Divine, Prosper and my friends, Abraham, Cordillia, Odigie Gabriel, and my boss Mr. Jonah and all those who supported my in their own little way.

ABSTACT

This study examines analysis of interest rate on savings and domestic investment in Nigeria fro 2010 - 2020. The objective of the study is to determine the effect of total savings on capital market growth in Nigeria and also to establish the impact of total savings on economic growth of Nigeria. The study relied on the secondary data which the sourced from Central bank of Nigeria (CBN) statistical bulletin 2009 to 2020 versions. This study employed the ordinary least square regression method to analyse the data gathered. It was established that total savings has positive and significant effect on capital market growth in Nigeria. It was also discovered that total savings has a positive and significant impact on economic growth of Nigeria. It was recommended that savings behavior should be encouraged in the country through appropriate savings policy from the government. This can be achieved by enforcing policy for adequate disbursement of national providence Fund for retirees and improvement of voluntary savings channel. The institutional and regulatory frame work in the market should be strengthened while increased awareness that will enhance investor's participation and confidence and ultimately lead to high performance of capital market in Nigeria be encouraged.

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Interest rate policy in Nigeria is a major instrument of monetary policy with regards to the role it play in the mobilization of financial resources aimed at promoting economic growth and development. Interest rate is the price paid for the use of money. It is the opportunity cost of borrowing money from a lender. It can also be seen as the

return being paid to the provider of financial resources. It is an important economic price. This is because whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, interest rate has fundamental implications for the economy either impacting on the cost of capital or influencing the availability of credit, by increasing savings (Acha&Acha 2011). Since the time of Adam Smith and Karl Marx, investment has been deemed to be both the engine of economic activity and the primary cause of economic malaise. Investment is the change in capital stock during a period.

It is the accumulation of newly produced physical entities, such as factories, machinery, houses and goods inventories. Consequently, unlike capital, investment is a flow term and not a stock term. This means that investment is measured over a period of time. Investment plays a very important role in economic growth in a country. Countries rely on investment to solve economic problems such as poverty, unemployment etc. (Muhammad 2004). As such determinants of level of investment become paramount in an economy. An understanding of the nature of interest rate behaviour is critical and crucial in designing policies to promote economic growth.

Its importance is hinged on its equilibrating influence on supply and demand in the financial sector. Banks as intermediaries move fund from surplus units of the economy to deficit units by accepting deposits and channelling them into ending activities. The extent to which this could be done depend upon the rate of interest and level of development of financial sector as well as the saving and investment habit of the people. Hence, the availability of investible fund is therefore necessary for all investment in the economy

which eventually translates to economic growth and development (Uremadu,2006). The behaviour of interest rates, to a large extent, determines the investment activities and hence economic growth of a country. Investment depends upon the rate of interest involved in getting funds from the market by investors, while economic growth to a large extent depends on the level of investment. If interest rate is high, investment is at low level and when interest rate falls, investment will rise. The effect of real interest rates on investment spending was posited in an investment equation by Jorgenson (1963) in his paper capital theory and investment behaviour. He derived the desired stock of capital as a function of real output and the opportunity cost of capital. In this approach, a representative firm maximizes the present value of its future cash flows. The desired capital stock is directly related to output and inversely related to the cost of capital a decrease in the real interest rate lowers the opportunity cost of capital and, therefore, raises the desired capital stock and investment spending.

According to Fuller (1990), interest rate is the factor reward or earning of capital. Interest rate is also seen as the payment for the use of money. Speaking in second sense, fuller opined that "this source of finance will only be available if other people are willing to forgo current consumption and provide a pool of financial resources from which loans can be advanced. This supply of fund will only be forthcoming if those supplying it receive some reward for sacrificing their current consumption…" to sacrifice current consumption implies a form of savings. Saving in its simplest connotation is the portion of disposable income not spent. It comprises of time deposits in bank and the various forms of equities. The relationship between interest rate and saving is well established in

economic theory. Keynes (1936) highlighted this relationship in his liquidity preference theory "…. The quantity of money which people desire to hold for speculative purpose is a function (dependent on) of interest rate. At higher rate of interest, people prefer to hold their wealth in one form of interest bearing asset or another. This theory implies that higher interest rate induces people to save. Lower interest rate however produces the opposite effect. Studies carried out on the subject corroborate this theory. A well known study is the Mickinon Shaw financial intermediation hypothesis due to Mchinon (1973) and Shaw (1973). They found a positive relationship between interest rate and saving. Interest rate is an important economic price, this is because it's diverse role in the economy, whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, and it has a fundamental implication for the economy.

Interest rate increase savings when cost of capital and availability of credit are influenced if interest rate is administratively determined, it is known as fixed interest rate and floating if determined by market forces. Prior to 1986, interest rates were fixed by the central bank of Nigeria (CBN) on the basis of policy decisions. The major objectives during this period were: to obtain socially optimum resources allocation to promote orderly growth in the financial market and facilitate flow of credit to the preferred sectors-agriculture, manufacturing etc, (Soludo, 2008). During the era of fixed interest rates, real interest rates were generally negative. The negative real interest rate had catastrophic consequences on the economy. It led to financial disintermediation, leading to low level of saving. Also leads to Low level of investment and low level of growth

(Nwachukwu and Odigie, 2009). This research intends to examine the analysis of interest rate on savings and domestic investment in Nigeria.

1.2 Statement of the Problem

The major function of interest rate in Nigeria and indeed other countries of the world is to ensure a rate of interest capable of inducing savings mobilization in the economy. The use of interest rates as stimulants in savings mobilization has not been very effective in Nigeria. The argument put forwards as the cause is that financial sector is weak. For this reason, people prefer their money outside the banking system, which many believe is shallow and prone to distress. The reason why saving is not responsive to interest rates as highlighted by Acha (2011) are; lack of confidence in the banking system; low income and preference for cash. In the same vein, Ostry and Reinhart (1995) identified the reason to; lack of sophistication in domestic financial market; proportion of the population living or near subsistence income level and liquidity constraints. The situation in Nigeria mirrors the reasons given above. There are few banks and are mostly located in urban areas and there is little scope for true market determination of interest rate. Available data has it that about 61 percent of Nigeria lives below poverty line, earning less than 1 dollar per day. Interest rate is of no consequences to this category of people as they can barely subsist let alone save.

Despite the policy measures put in place recapitalization of commercial banks, the various poverty eradication programmes and policies, etc. a robust financial system is still not in sight as most people still do not have confidence in the banks. Besides, even those who seem to fully utilize the services of the financial sector are not finding it so

easy this is because of the tedious nature of the banking process and inefficiency in the banking system coupled with inept corruption which has continued to mar success that may have been recorded. Nigeria banks have continued to toll towards distress to extent that some banks had to be rescued even.

However the Nigeria economy has at different times witnessed enormous interest rate swings in different sectors of the economy since mid 1980's under the regulated regime hence, these changes have affected savings. The preferential interest rates were based on the premise that the market if freely applied would exclude some priority sectors. Thus interest rates were adjusted through the invisible hand in order to promote increased level of savings which will in return increase investment in the various preferred sector of the economy. Besides, closely followed by the regulated interest rate regime was the interest rate reform; a policy evolved under the financial sector. The role and effect of interest rate is possible due to the link between the financial sector and real sector of the economy, for instance the lending rate which translates into cost of capital has direct implications for investment. High lending rate discourages borrowing for investment. Also, high saving rate encourages savings which means more lendable funds for investments. As such the directional flow of interest rate has a linkage to the investment in an economy. This relationship calls for the need to examine the impact of interest rate on savings and domestic investment in Nigeria, hence the need for this research work.

1.3 Objectives of the Study

The general objective of this research is the analysis of interest rate on savings and domestic investment in Nigeria. The specific objectives are:

1. To establish the effect of interest rates on domestic investment in Nigeria
2. To find out the effect of interest rates on total savings in Nigeria
3. To find out the relationship between inflation rates and domestic investment in Nigeria

1.4 Research Questions

In line with the research objectives, the following are the research questions;

1. What is the effect of interest rate on domestic investment in Nigeria?

2. What is the effect of interest rates on total savings in Nigeria?

3. What is the relationship between inflation rates and domestic investment in Nigeria?

1.5 Statement of the Hypothesis

The hypothesis of this study is stated in the null form

Hypothesis I

Ho: Interest rate has no effect on domestic investment in Nigeria

Hypothesis II

Ho: Interest rate has no effect on total savings in Nigeria

Hypothesis III

Ho: There is no relationship between inflation rates and domestic investment in Nigeria.

1.6 Scope of the Study

The scope of this research is limited to the analysis of interest rate on savings and domestic investment in Nigeria within the period 2010 – 2021.

1.7 Significance of the Study

The deterioration of the Nigeria economy calls for a scrutinization of the economic policies. This Nigeria like all other developing countries is faced with the problem of choosing the most appropriate policies, which will be employed to attain economic growth. An identification of the factors, which influence the economy, becomes necessary, the level of investment being a major influence of economic growth lead us to the study of interest rate which is one of the factors influencing investment as well as savings (which provides funds for savings and investment). In order to avoid decisional myopia there is a need for efficient and proper economic planning. The need for undertaking this study stems from the important role the rate of interest plays in determining the growth of savings and investment. This shall be of immense benefit to deposit moey banks in general, the CBN, the general economy and to future researchers in the field of interest rate.

1.8 Limitations of the Study

The study focuses on the impact of interest rate on savings and domestic investment decision in Nigeria starting from 2010 -2021 using annual time series data. Upon the assertion that every pros have some cons, this study cannot be exception. Some hitches and setback were encountered in the process.

First among the list is data unavailability. For this reason, investment variable would be provided by Gross Fixed Capital Formation (AFCF). Secondly, time and

financial construct cannot be left out in the list setback and hitches. The cost of sourcing materials from the internet is exorbitant because of epileptic and erratic power supply. Thus, the cyber café power their systems with power generating sets which increases their cost of production which they eventually pass to us (the consumers of their services). Despite all these hitches and setbacks mentioned above, this research work would have been a perfect work.

1.9 Operational Definition of Terms

Interest Rate: is the amount a lender charges a borrower and is a percentage of the principal—the amount loaned. The interest rate on a loan is typically noted on an annual basis known as the annual percentage rate (APR).

Domestic Investments: is the measure of physical investment used in computing GDP in the measurement of nations' economic activity. This is an important component of GDP because it provides an indicator of the future productive capacity of the economy

Gross Domestic Product: is the monetary value of all finished goods and services made within a country during a specific period. GDP provides an economic snapshot of a country, used to estimate the size of an economy and growth rate. GDP can be calculated in three ways, using expenditures, production, or incomes.

Capital Formation: the net accumulation of capital goods, such as equipment, tools, transportation assets, and electricity, during an accounting period for a particular country. Generally, the higher the capital formation of an economy, the faster an economy can grow its aggregate income.

Fixed capital formation: also called "investment", is defined as the acquisition of produced assets (including purchases of second-hand assets), including the production of such assets by producers for their own use, minus disposals.

Inflation: typically a broad measure, such as the overall increase in prices or the increase in the cost of living in a country. But it can also be more narrowly calculated—for certain goods, such as food, or for services, such as a haircut, for example.

Money Supply: refers to the total volume of currency held by the public at a particular point in time. There are several ways to define "money", but standard measures usually include currency in circulation and demand deposits.

Financial Institution: is a company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Interest Rate

Interest rates rank among the most important variables in macroeconomics and in the functioning of financial markets. It plays a crucial role in the determination of the

value of financial instruments, and generally affects economic agents‟ decision or behaviour on whether to consume, save and invest. It also affects the way wealth is distributed between borrowers and lenders. Interest rates influence the prices of key financial assets such as stocks, bonds, and foreign currencies. For individuals, interest rates are of interest as it determines monthly payments on car loans and home mortgages. It also determines the income earned on savings account, term deposits and other forms of market instruments. Ajilore (2014), in his work distinguished between the nominal and real interest rates at the outset, as well as identify the variants of rates of interest in its deposit and lending rates forms:

2.1.1.1 Nominal Interest Rate

It is defined as the rate paid for the use of money or credit before taking into consideration the inflation rate over the rental period. In other words it embeds both the effects of inflation and uncertainty. That is, the interest rates were not adjusted for changes in purchasing power caused by changes in the price level. In fact, inflation can reduce the purchasing power of returns on any investment. In addition, inflation causes the purchasing power of the principal to decline. For example, if inflation is 5.0 per cent per year, the purchasing power of the N1, 000 principal falls by N50 each year. Black (2002) defined interest rate as the price that a borrower has to pay in order to have access to the use of cash, which he or she does not own, and the return that a lender enjoys for foregoing consumption or liquidity in the current period. This definition connotes interest rate as both a cost and a reward. Interest rate is a cost of capital, which influences the demand for loanable funds by borrowers in need of such. When conceived in this way,

interest rates are seen as lending rates on different forms of loans and advances in the financial market.

2.1.1.2 Real Interest Rate

This is the nominal interest rate adjusted for expected inflation. To encourage savings, real interest rate is expected to be positive. Lenders and borrowers know that inflation reduces the purchasing power of interest income, so they base their investment decisions on interest rates adjusted for changes in purchasing power. Such adjusted interest rates are called real interest rates. Lending and borrowing parties are actually not sure of what the real interest rate will be over the tenor of the loan, they have to base their decisions concerning savings and investments on their expectations about the real interest rate. Savers and borrowers must decide what they expect the inflation rate to be in order to estimate the expected real interest rate. It is possible to generalise by noting that the actual real interest rate equals the nominal interest rate minus the actual inflation rate. If the actual inflation rate is greater than the expected inflation rate, the actual real interest rate will be less than the expected real interest rate; in this case, borrowers will gain and lenders will lose. If the actual inflation rate is less than the expected inflation rate, the actual real interest rate will be greater than the expected real interest rate; in this case, borrowers will lose and lenders will gain.

2.1.1.3 Savings Deposit Rate

The savings deposit rate is the interest rates paid by banks and other deposit taking institutions for cash deposited by savings deposit account holders. The payment of interest on the account is subject to the restriction that funds could only be withdrawn

from the account after seven days‟ notice. This restriction is however, seldom applied by banks nowadays, probably to gain competitive advantage in deposits mobilisation.

2.1.1.4 Fixed Deposit Rate

Fixed deposit account is an investment account with a specified amount invested at an agreed and specified interest rate and term to maturity. In Nigeria, fixed deposits have tenor of 30, 90 or 180 days. The interest rates paid on this form of account are called fixed deposit rates. They normally attract higher interest rates than the savings deposit rates.

2.1.2 Investment

Investment can be broadly defined as the acquisitions of an asset with the aim of receiving a return (Odoko, 2002). It could also mean the production of capital goods; goods which are not consumed but instead used in future production. Examples include building a rail road, or a factory, clearing land, or putting oneself through college. There are several motives for investment. The basic motive is profit/return. According to Keynes' theory, this motive depends on the under-utilisation of capital. In addition, Soludo, (2001) described investment as generally conceptualised in terms of "physical" capital formation. The explanation derives from the neoclassical production function with separable input factors – mainly capital and labour, and with investment adding to the stock of capital.

2.1.3 Economic Growth

Economic growth refers to the increase in the value of goods and services produced by an economy. It is conventionally measured as the rate of increase in Gross

Domestic Product (GDP). Growth is usually calculated in real terms (netting out the effect of inflation on the price of goods and services produced). It can be studied in two time paths: short-run and long-run paths. The short-run variation of economic growth is known as business cycle, and all economies experience periodic recessions. The long-run path of economic growth is one of the central questions of economics: over long periods of time, even seemingly small rates of growth, through compounding, can have large effects, (Odoko, Okafor and Kama, 2008).

Growth in output can be divided into two major categories: growth through increased input and that through improvements in productivity. Given that labour and capital inputs cannot be increased indefinitely without encountering diminishing marginal returns, technological progress is needed to increase the standard of living in the long-run, (Odoko, Okafor and Kama, 2008).

2.1.5 Determinants of Investment

According to Keynes, employment depends on investment. Employment fluctuates on account of fluctuations in investment. He therefore posits that investment is determined by two factors: expectations of future profitability or business confidence; and rate of interest. Chete (2006) noted that firms either invest from their own profits or by borrowing. Households having savings, have to decide whether to invest the money for profit or lend/deposit for interest. If the expected profit is higher than the rate of interest, then the household will invest. Otherwise, they will lend or deposit their own money for interest. Firms who invest their own profit will also decide in same manner.

Suppose the firms borrow for investment, then they have to pay interest for that. Hence, firms will invest borrowed money only when the expected profit is high enough to pay the interest and the cost of initial capital. Thus, in all of the above, the decision to invest will be based on the rate of interest and business confidence. Of these two, business confidence or expectations about future profitability have greater significance than the rate of interest. This is because rate of interest is stable in the short-run. The expectation about profitability involves several considerations of the future about which there cannot be any certainty. Bleak prospects will lead to a reduction of investment and it will affect employment and vice versa, (Chete, 2006).

2.1.6 Savings and Investment

Savings is directly connected with investment. Saving and investment are the basic economic activities of an economy, Sleka (2004). Saving is inevitably for capital formation and economic growth. Saving itself has nothing to do with economic growth unless savings are properly mobilised and effectively channel and invested to enhance capital stock to increase production and wealth of the economy. Thus aggregate saving and investment are equal. But they may not always be in equilibrium. The classical economist believed that savings were automatically invested. They thought the decision to save and the decision to invest were made by the same person. But Keynes argued that savings and investment were made by different persons for different reasons and were influenced by different factors. Thus, sometimes savings might exceed investment. When this happens, there would be deficiency of aggregate demand and general unemployment. Keynes thought the gap between savings and investment can be filled by government

intervention either directly by increasing government expenditure or indirectly by actions influencing the supply of money.

2.1.7 Factors Influencing Savings and Investment

In a capitalist society, investment is undertaken mainly by firms whose objectives are to make a profit as well as by government whose own objective is not necessarily to make a profit but also for the welfare of its citizens. Although government investment accounts for a lesser percentage of the total fixed investment which includes the construction of roads, hospital, schools, etc. government however, take decision to invest or not in the height of economic, political and social requirement. Therefore, these are not particularly influenced by the profit motive. A business firm is likely to invest in new capital expenditure only if the net return it expects to gain is at least sufficient to cover the following: the cost of capital and the rate of interest on the money involved.

Net return refers to the increase in the revenue of the firm after allowance has been made for the maintenance and operating cost. The outstanding characteristic of investment is its volatility as it rises sharply in boom periods and drops in depressions. Investment depends on the expected rate of profit to be obtained from additions to physical capital. In a nutshell investment depends on either major factors; the level of national income, the level of the rate of interest, technological advances and innovations, changes in size and distribution of population of expected volume of sales, changes in government expenditure or taxes, prospects for demand and future levels of cost and the state f business confidence and influence by other government policies, international affairs, stock market or tangible elements in the business environment(Adekanye, 1993)..

Savings in the complement of consumption factors which affects consumption and savings also change with it (Osofisan, 1993). Thus, existence of a propensity to consume implies a propensity to save. The propensity to save is the relationship between savings and income. Income is the principal determinant of savings thus when income rises, both savings and consumption rise vice versa. There are two main reasons why people save in an economy, these are; for specific purpose and for unspecific purpose. People may save for a specific reason or purpose. These purposes include payment such as to pay for motor vehicle. Saving for unspecific purpose includes savings for the rainy day or to have something to fall back on in the event of some unexpected occurrence in the future.

2.1.8 Interest Rate Level of Savings and Investment

The analysis of savings and investment in any economy cannot be derived from an understanding of the nature, meaning and role of interest rate in economy (Fry, 1978). Having defined the rate of interest and extensively reviewed its theories as well as the factors that cause variations in its structure, it is pertinent to analyze critically the nature of interest rate and how it determines the level of savings and investment. There are basically two forms of interest rate (Luckett, 1984), which can be allowed to depositors or charges to borrowers, they are; the fixed interest rate and the fluctuating interest rate. When the interest rate is fixed it means that the depositor knows in advance the amount of interest that will be allowed or charged on his/her deposits and the borrower also know how much to be charge on his/her loan in advance. Fluctuating rates are those that allow alternation or are liable to alteration either upwards or downwards or with little or no

notice. There are four theories that discuss fluctuation in interest rates, these are (Osofisan, 1993);

1. The abstaince theory or classical theory of interest rate.

2. The loanable funds or neo-classical theory of interest rate.

3. The liquidity preference of Keynesian theory of interest rate.

4. The modern theory of the neo-Keynesian theory of interest rate.

It has been proved beyond doubts that interest rate at least has an influence on savings and investment (Ritter and Siber, 1986). Conventional wisdom informs us that when the interest rate is high, the level of savings will rise because depositors will profit, as he will have more returns on his deposits. In the same view, if the interest rate falls, the level of savings will drop, as people will not be motivated to save. On the contrary, if the level of interest rate rises, the level of investment falls because the cost of acquiring funds becomes expensive and when the level of interest drops, the level of investment rises as the cost of acquiring funds for investment purposes is reduced. In order to understand how the interest rate influences savings and investment we shall review the following; investment demand for output, he supply of savings, the marginal responsiveness of investment demand to interest rate and the investment demand and the supply of savings (Luckett, 1984),.

2.1.9 Government Spending

Government spending is public expenditure made by government. It is made to produce public goods like literacy, public health, defence, child nutrition, social welfare, infrastructure and many more for the collective well-being of the society. The classical

economist held the view that government was unproductive. Keynes rejected their idea and argued that government activities (taxing and spending) strongly influence the level of economy. According to Keynes, taxation and public spending can be used to achieve macroeconomic goals like growth and economic stability. In this sense, fiscal policy is being described. Keynes proved that fiscal policy is more effective in recovering economies from depression. Public expenditure can be used to increase effective demand during depression. The injection of money in the economy will generate higher demand and this will increase investment and employment. Thus, public expenditure will put back the economy again on its growth path. Many countries have adopted his suggestions and recovered from Great Depression of the 1930s. Since then, the role of government and fiscal policy became important in macroeconomic management.

2.1.10 Relationship between Interest Rate and Economic Growth

Several researchers have investigated the relationship between interest rate and economic growth in both developed and emerging economies. Hence, there exist several literatures on this subject. Some of the studies are reviewed below: Oosterbanan (2009) examined the relationship between the annual economic growth rate and the real rate of Interest. The study employed the ordinary least squares method of econometric analysis. The study revealed that the relationship between the real rate of interest and economic growth might be an inverted U-curve. Owosu and Odhiambo (2001) investigated the relationship between interest rate liberalisation and economic growth in Nigeria using autoregressive distributed lag bounds testing approach. The conclusion from the study was that, interest rate liberalization policies have positive effect on economic growth in

Nigeria. Therefore, interest rate liberalisation policies together with increase in the productivity of labour, increase in capital stock and increase foreign direct investments determines economic growth in Nigeria.

Chete (2006) in his own study investigated the relationship between real interest rate and economic growth in Nigeria using error correction model estimation technique. The result showed that there was a unique long-run relationship between interest rate and economic growth and that interest rate is an important determinant of economic growth in Nigeria. Furthermore, he however concluded that the deregulation of interest rate in Nigeria may not optimally achieve its goal if those other factors that affect investment negatively are not addressed out and tackled.

Obamuyi (2009) studied the relationship between interest rates and economic growth in Nigeria using time series data. He employed the co-integration and error correction model techniques of analysis to capture both the long-run and short-run dynamics of the variables in the model. Results revealed that real lending rates have significant positive effect on economic growth and that; there also exists a unique long-run relationship between economic growth and its determinants including interest rate.

This study recommended that the formulation and implementation of financial policies that enhance investment friendly rate of interest as a necessity for promoting economic growth in Nigeria because of the relationship that exist between interest rate and investment growth in the country's development process.

Furthermore, Oosterbanan (2009) examined the relationship between the annual economic growth rate and real rate of interest. The study employed the ordinary least

square method of econometric analysis. The study revealed that the relationship between the real rate of interest and economic growth might be an inverted u-curve.

Bruce, Ananth and Hansen (2013) examined the relationship between Real Interest rates and Economic Growth. They employed sensitivity analysis and VAR estimate in their analysis and found that there exist a moderately negative correlation between real interest rate and productivity that measures economic growth. This negative correlation implies that long-run costs due to a period of low interest rates will tend to be slightly offset by a period of high productivity growth. Conversely, long-run benefits during a period of high interest rates will be offset by low productivity growth. Bruce et. al., (2013) examined the implications for the variability of long-term projections of trust fund accumulation and found that a negative correlation reduces the variability in the stochastic intervals.

Obansa, Okoroafor, and Millicent (2013) established empirically the relationship existing among exchange rate, interest rate and economic growth in the Nigerian economy using time series which was separated into two economic regimes - the regulation and the deregulation regimes. Obansa et. al., (2013) utilised vector autoregression (VAR) technique and it was revealed that exchange rate had a stronger impact on economic growth than interest rate, particularly, interest rate impact was found to be positive but declined as the time horizon increased.

2.1.11 Relationship between Interest Rate and Investment

Banks have the primary responsibility of financial intermediation to make funds available for economic agents. Banks as financial intermediaries move surplus funds

from sector/units of the economy to deficit sector/units by accepting deposits and channeling them to lending activities. The extent to which this could be done depend upon the rate of interest and level of development of financial sector as well as the savings habit of the people in the country. Hence, the availability of investible funds is therefore regarded as a necessary starting point for all investment in the economy which will eventually translate to economic growth and development (Uremadu, 2008). Adebiyi (2001) explained that the investment demand curve is always a backward bending function of the interest rate in a model with non-convex adjustment costs and the potential to learn.

At low interest rates, an increase in the rate of return raises the cost of learning and increases aggregate investment by enlarging the set of firms for when the interest rate exceeds the rate of return to delay. An increase in interest rate is more likely to stimulate investment when the potential to learn is larger and in the short run rather than the long run. Uchendu (2013), studied interest rate policy, savings and investment in Nigeria using time series data spanning from 1976 - 2006. He found out that the behaviour of interest rate and inflation rate have significant influence on investment.

Albu (2006) studied the trends in the interest rate, investment, GDP growth relationship. The study used two partial models to examine the impact of investment on GDP growth and the relationship between interest rate and investment in the case of the Romanian economy. The study found that the behaviour of the national economy system and interest rate-investment relationship tend to converge to those demonstrated in the normal market economy. Akintoye and Olowolaju (2008) examined optimising

macroeconomic investment decision in Nigeria. The study employed both the ordinary least square and vector auto regression frame works to stimulate and project inter-temporal private response to its principal shocks namely: public investment, domestic credit and output shocks. The study found low interest rate to have constrained investment growth. The study resolved that only government policies produce sustainable output, steady public investment and encourage domestic credit to the private sector will promote private investment.

Mahmudul and Gazi (2009) in their study in Jordan on stock investment (based on the monthly data from January 1988 to March 2003) found that interest rate exerts significant negative relationship with share price for markets of Australia, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, South Africa, Spain, and Venezuela. For six countries from this sample, they argued on the availability of significant negative relationship between changes of interest rate and changes of share price. Olubanjo et al. (2010) simulated the inter-relationships among interest rates, savings and investment in Nigeria between 1993 and 2010 using two stages least square method. The result from their study suggested that a marked decrease in the real lending rate would not result automatically into increased domestic investment.

Eregha (2010) examined variations in interest rate and investment determination in Nigeria. The study employed dynamic model of two equations using instrumental variable technique of estimation. The study revealed that variations in interest rate posits negative but highly significant role in investment decision in Nigeria and demand for credit had a negative significant influence on interest rate variations in both the short-run

and the long-run. Ojima and Emerenini (2015) in their study of interest rate and investment in Nigeria applied the ordinary least square method (OLS). Their study revealed that high interest rate affect investment negatively. The study therefore suggested that the monetary authority should evolve policies that will encourage savings and reduce prime lending rate to genuine investors and others. They further recommended that since there is a between income and savings, relevant authorities should consider economic policies that will increase income level of the people in order to mobilize investments.

2.2 Theoretical Review

Theories of interest rates try to explain variables which determined interest rates. These theories differ because of differences of opinion as to whether rates are monetary or real phenomenon. Theories of interest rates try to explain variables which determined interest rates. These theories differ because of differences of opinion as to whether rates are monetary or real phenomenon.

2.2.1. Theories of Interest Rate

(a) The classical theory of interest rate

The rate of interest according to the classical is determined by the supply and demand for capital. The supply of capital is governed by the time preference while the demand for capital is determined by the expected productivity of capital (Chioma 2017). Time preference and productivity of capital depend upon waiting or saving. The demand for capital is determined by the investors because it is productive. While the productivity

of capital is subject to the law of variable proportions. Additional units of capital are not as productive as the earlier units. That is, the rate of interest is just equal to the marginal productivity of capital and it means that at a higher rate of interest, the demand for capital is low and it is high at a lower rate of interest. Thus, the demand for capital is inversely related to the rate of interest and the demand schedule for capital or investment curve slope downward from left to right.

(b) The loanable funds theory of interest rate

The neo-classical or the loanable fund theory examines interest rate in terms of demand and supply of loanable funds or credit. According to this theory, the rate of interest is the price of credit which is determined by the demand and supply for loanable funds. In the words of Jhingan (2010); it is the price which equates the supply of credit, or saving plus the net increase in the amount of money in a period, to the demand for credit, or investment plus net hoarding in the period. The demand for loanable fund has primarily three source; government, businessmen and consumers who need them for purpose of investment, hoarding and consumption. The tendency to borrow is more at a lower rate of interest at a higher rate.

(c) Keynes liquidity preference theory of interest rate

Keynes defines the rate of interest as the reward of not hoarding but the reward for parting with liquidity further specified period. It is not the price which brings into equilibrium the demand for resources to invest with the readiness to abstain from consumption. It is the price which equilibrates the desire to hold wealth in the form of

cash with the available quantity of cash. In other words, the rate of interest in the Keynesian sense is determined by the demand for and the supply of money.

The liquidity preference is the desire to hold cash. The rate of interest in Keynes word is the premium which has to be offered to induce people to hold the wealth in some form other than hoarded money. The higher the liquidity preference, the higher will be rate of interest that will have to be paid to the holders of cash to induce them to part with their liquid assets. The lower the liquidity preference, the lower will be the rate of interest that will be paid to cash-holders.

Keynes gives three reasons why individuals and businessmen hold money, which are the transactions, precautionary and speculative motive. He holds that the transactions and precautionary motive of holding money has nothing to do with the rate of interest. But the speculative motive of holding money is to make gain by investing in bonds. Money held for speculative purposes is a liquid store of value which can be invested at an opportune moment in interest-bearing bonds or securities. Bonds and the rate of interest are inversely related to each other low bond price are indicative of high interest rates, and high bond price reflect low interest rates.

(d) The Wicksell theory of interest rate

He examines the relation between the natural interest rate and market interest rate. The natural interest rate is rate of interest at which the demand for loan capital and supply of savings exactly agree, and which more or less corresponds to the expected yield on the newly created capital, will then be the normal or natural real rate. It is the rate consistent with a stable money supply and stable prices. On the other hand, the market rate of

interest is the money prevailing in the loan market. It is the rate of interest charged by banks or lenders. It depends upon the demand and supply of money. According to Wicksell, the natural rate of interest is essentially variable. It is partly determined by the demand for loans which, in turn, depends on the expected profitability of new investment. All factors which affect the expected profitability of investment bring changes in the natural rate of interest. He pointed out that, the natural rate is not the same as the market rate. There are disparities between the two rates during the short run which produce changes in the price level. The market rate of interest tends to be sticky and responds slowly to changes in the demand for loanable funds. In the long-run, disparities between the two rates automatically generate forces which bring their equality.(Jhingan, 2010)

2.2.2 Theories of Investment

(a) The Accelerator Theory of Investment

The accelerator theory states that an increase in the rate of output of a firm will require a proportionate increase in the capital stock which refers to the desired or optimum capital stocks, K*. Assuring that capital-output ratio is some fixed constant, V, the optimum capital stock is a constant proportion of output so that in any period t,

$$K_t = \Delta Y_t$$

Where K_t is the optimal capital stock in period t, v (the accelerator) is a positive constant, and Y_t is the output in period t.

Any change in output will lead to a change in the capital stock, thus;

$$K_t - K_{t-1} = \Delta(Y_t - Y_{t-1})$$

$$I_{nt} = \Delta(Y_t - Y_{t-1}) \qquad [I_{nt} = K_t - K_{t-1}]$$

$$= \Delta Y_t$$

Where $\Delta Y_t = Y_t - Y_{t-1}$ and I_{nt} is net investment. This equation represents the naïve accelerator.

In the above equation, the level of net-investment is proportional to change in output. If the level of output remains constants (Y = 0), net investment would be zero. For net investment to be a positive constant, output must increase. When output starts declining, net investment becomes negative. This based on the assumption that, there is symmetrical reaction for increase and decrease of output.

(b) The financial theory of investment

The theory was developed by James Duesenbery. It is known as the cost of capital theory of investment. The accelerator theories ignore the role of cost of capital in investment decision by the firm. They assume that the market rate of interest represents the cost of capital to the firm which does not change with the amount of investment it makes. It means that unlimited funds are available to the firm at the market rate of interest. In other words, the supply of funds to the firm is very elastic. In reality, an unlimited supply of funds is not available to the firm in any time period at the market rate of interest. As more and more funds are required by it for investment spending, the cost of funds (rate of interest) rises. To finance investment spending, the firm may borrow in the market at whatever interest rate funds are available.

(C) Tobin's Q Theory

James Tobin (1909) has proposed the q theory of investment which links a firm's investment decision to fluctuation in the stock market. Tobin's Q-Ratio Theory of Investment.

In the Tobin's Q-ratio theory of Investment behaviour where Q represents, the ratio of the market value of a firms existing shares (share capital) to the replacement cost of the firm's physical assets (the replacement cost of the share capital). The firm needs money for investment. The money can be raised either by borrowing or by selling shares, equity etc. When the firm sells the share, the buyer buys the share to earn a capital gain from the increase in the market value of shares. The purchaser of share purchases shares when he expects a high capital gain. When stock markets are high, firms are willing to sell equity to finance investment than when the stock market is low. James Tobin was the first to explain this relation between the stock market and investment and that is why is also referred as "Tobin's q" theory.

$$Q = \frac{\text{Market Value of ordinary share}}{\text{Cost of Asset – Replacement base value}}$$

(d) Neo-Classical Theory of Investment

This theory is developed by Jorgenson (1963) and followed by its 1967 and 1971 versions, combines the users cost of capital and the accelerator effect to explain investment behaviour. In this model, the firm is assumed to own most of the capital stock and it can either sell the stock or make use of it. But if the firm uses its stock, some costs are inevitable to be incurrent. The cost includes the forgone interest income

that the firm generates had it sold the stock, the depreciation cost that comes with time, and the charges in the market value (price) of capital overtime (this take negative if the value of capital appreciates and positive otherwise). In such model, investment tax credit.

(e) Classical theory of investment

They regard the rate of invest as the factor which bring the demand for investment and the willingness to save into equilibrium with one another. Investment represents the demand for investable resources and saving represents the supply, whilst the rate of interest is the price of investable resources at which the two equate (investment and saving). Just as the price of a commodity is necessarily fixed at that point when the demand for it is equal the supply, so the rate of interest necessarily comes to rest under the amount of investment at that rate of interest.

(f) Keynesian theory of investment

The theory emphasized the importance of interest rate in investment decision. But other factors also enter into the model not least the expected profitability of an investment project. Changes in interest rate should have an effect on the level of planned investment undertaken by private sector businesses in the economy. A fall in interest rate should decrease the cost of investment relative to the potential yield and as result planned capital investment projects on the margin may become worthwhile. A firm will only invest if the discounted yield exceeds the cost as the project. The inverse relationship between investment and the rate of interest is represented by using the marginal efficiency of capital investment (MEC). A fall in the rate of interest causes an expansion of planned

investment. Planned investment can change at each rate of interest. The MEC is the expected rate of return over cost of new capital goods. In order to find whether it is worthwhile to purchase capital goods, it is essential to compare the present value of the capital asset with its cost or supply price (interest rate). If the present value of a capital project exceeds it cost of buying, it pays to buy it. On the contrary, if it's present value is less than it cost, it is not worthwhile in investing in the capital project.

2.3 Empirical Review

Economists generally believe that interest rates play an important role in decision making regarding investment and economic growth. Consequently, economic policy makers in some developing countries have historically emphasized the need to keep interest rates low to promote private sector investment. This has contributed to interest rate liberalization by most developing economies, Nigeria of which is not exempted. The resulting effect of such policy shift which should lead to capital market development as well as attract portfolio investment, and thus lead to economic growth and development; has attracted the interest of various researchers. Below are some of their findings.

Zordan (2005) in his study entitled "Stock Prices, Interest Rates, and Investment Survival" noted that stock prices and interest rates are inversely correlated, with the trend observed well into the 1880s; more applicable to the post-World War II era. From the late 1940's to the mid 1960's, inflation was low, and interest rates were both low and stable. During this time stocks were doing well, both in nominal terms and in real terms. Historically has been recognized for the inverse relationship between interest-sensitive asset classes such as securities, bonds, and real estate and commodity prices. This

connection can be seen in the period from 1877 to 1906, the 1906 cycle 1920 cycle, the 1920 to 1929 cycle, the 1929 to 1949 cycle, and the 1949 to 1966 cycle.

Hamrita and Abdelkader (2011) In their work entitled' The Interest Rate Relationship, Exchange Rate and Stock Price: A Wavelet Analysis,' they examined the multi-scale relationship between interest rate, exchange rate and stock price using a wavelet transformation in the US between January 1990 and December 2008. The returns on the exchange rate and the return on stock index were found to have a bidirectional relationship in this period at longer horizons. Findings from other research specifically point out that the interest rate changes affect the stock market in the long run and there is no significant influence in the short run.

Mahmudul and Gazi-Salah (2009) in their research in Jordan entitled "Interest rate Relationship with Stock Price: Empirical Evidence from Developed and Developing Countries", (based on the monthly data from January 1988 to March 2003) shows that interest rates have a significant negative relationship to share prices for Australian markets, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, South Africa, Spain, and Venezuela. For six countries from this sample, they argued on the availability of significant negative relationship between changes of interest rate and changes of share price.

Hasan, Kabir, and Basher, (1999) Studied interest rate power, calculated by three maturity treasury bill rates; 3,6 and 12 months tracking projected monthly, quarterly and annual returns on the Sri Lankan stock market from 1990 to 1997. The return on stock is determined by monthly continuously compounded returns on the All Share Price Index

(ASPI) and Sensitive price index. By applying the OLS method, it was suggested that the shortterm interest rates are positively related to future returns and they can track expected return prospects reliably. The authors also concluded that the 12 Month maturity is the most powerful tool among all three maturities to track monthly and quarterly expected returns.

Hsing (2004) in his work entitled “Impacts of interest rate, inflation and Exchange Rate on portfolio investment in Brazil: A VAR Model” adopted a systematic VAR model that allows for the simultaneous of several endogenous variables such as, GDP, real interest rate, exchange rate, inflation, the stock market index and found that interest rate impacted on portfolio investment in the short term, while inflation and exchange rate has a positive effect on portfolio investment in both the short run and long run. Roux and Ismail (2004) studied the effect of interest rate on portfolio investment in Australia, from 1980 to 2003. The study employed ARDL dynamic regression techniques. From an Austrian school perspective on interest rates, empirical evidence indicated that changes in interest rate have a positive significant effect on portfolio investment in the short run but no impact on the long run.

Yinghan (2015) in his research entitled “the relationship between interest rate and stock prices in China”, investigated the relationship between interest rate and stock price in China's stock markets-Shanghai Stock Exchange and Shenzhen Stock Exchange for the duration of 2009-2014, by using high frequency daily data. The empirical study includes event analysis and econometric data. The aim of the event analysis was to determine how the stock price responds to the interest rate changes of 8 times. The econometric evidence

was based on the VAR and VECM model; the unit root test, the Johansen co-integration test, and the Granger causality test and the impulse response functions were used in addition. The results indicated that the interest rate and the stock price affect each other greatly, and there exists a negative and long-term equilibrium relationship. In short term, there is little effect relation between interest rate and stock price.

Abramov and Radygin (2015) Studied interest rate and long term portfolio investment in Russia: Effect of the extension of the investment horizon on the comparative advantages of the basic asset classes and on the principles of investment strategy growth. This shows that the traditional approach of the theory of portfolio management, which notes that stock investments are superior to bonds in terms of long-term risk-return trading, is by no means always compatible. Econometric proof was based on the VAR and SVAR models; additionally, unit root test, Johansen co-integration test, and Granger causality test and impulse response functions are used. The result shows that the interest rate has a significant positive effect on long-term stock investments, arguing in favor of pension fund strategies and other institutional structural bonds. Emphasis is placed on the need for regular adjustments to long-term investors' portfolios.

Ogujiuba and Obiechina (2012) examined the relationship between interest rate, inflation and portfolio investment, interest rate and inflation rate as well as policy implications, there from, using time series data from 1986-2008. A non restrictive vector Autoregressive (VAR) model was created while restriction was imposed to identify the orthogonal (structural) components of the error terms – structural vector Autoregressive (SVAR). The study indicates that the GDP reaction to portfolio investment shocks is not

contemporary, and that this extends to other variables. It is a bit sluggish but it returns to equilibrium faster compared to the Net Portfolio Investment response. Restructuring the recursive Cholesky structural breakdown of the impulse response function, both in the short run and long-run, the result indicates that inflation impacted positively on Net Portfolio Investment. In the short run, the interest has also been shown to impact on the Net Portfolio Investment.

Chukwuemeka, Stella, Victor and Oduh, (2012) also worked on long-term influencing factors in Nigeria's foreign portfolio investments. They discovered the appropriate policies to attract long-run investment from foreign portfolios. They used data from the quarterly time series over the 1981-2010 Period. Variables were known to be market capitalisation, real exchange rate, real interest rate, real gross domestic product and open trade. Net portfolio investment was known as variable dependent. They applied a finite distributed time series analysis model of the lag. The study found that investment flows from international portfolios into Nigeria had a favorable long-term relationship with market capitalization and degree of openness. They suggested that it was good to make Nigeria’s trade policy as investment welcoming policy for attracting portfolio investment flows.

2.4 Summary of the Literature Reviewed

From the various studies reviewed, most studies on the impact/effect of interest rate on savings and domestic investment in Nigeria are cross sectional or panel studies rather than country specific studies. The results obtained by such cross country or panel studies have been brought into serious doubt due to the implicit assumption of a common

economic structure and similar production technology across different countries, which is unlikely to be true. Also, Levine and Revelt (1992) stressed that a lot of conceptual and statistical problems plague cross-country investigations.

Study of crosscountry regression assumes results are taken from a distinct population, which undermines the basic principle that very different countries may not be comparable. So, the question can be asked whether highly heterogeneous countries should be included in the same regression. Furthermore, Levine and Revelt (1992) noted that there are conceptual difficulties in interpreting the coefficients on regressions that involve averaged data for a various country, thereby casting serious doubt on the robustness of results from cross-country regressions.

This study intends to fill the above gap in literature by carrying out a country specific analysis on the effect/impact of interest rate on savings and domestic investment in Nigeria for the period. The above issue has not been explored by previous empirical studies in Nigeria. This study commenced from 1984 rather than earlier years owing to the availability of time series data for the variable of interest indicator (portfolio investment), as well as owing to the fact that the structural adjustment program (SAP) which led to interest rate liberalization policy went into effect in the year 1986. Thus, this study will assist in improving the frontiers of knowledge as it relates to interest rate liberalization; showing if it has impacted positively on interest rate on savings and domestic investment, and then proffer the way forward.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study adopted an ex-post facto research design which is a form of descriptive research in which researcher starts with the observation of the explained variable then studies the explanatory variable in retrospect for possible relationship and effects on the dependent variable. Onwumere (2009) posits that secondary data are those data already collected and collated and often exist in a published form. Theoretical and empirical data for this study were obtained from past and relevant studies on the subject matter under study while statistical data for this study were sourced from CBN Statistical Bulletin, 2021.

3.2 Population of the Study

The population of this research is the Nigerian economy from 1960 till date with focus on interest rate, savings and domestic investment in Nigeria.

3.3 Sample and Sampling Procedure

The sample size of this research is interest rate on savings and domestic investment vis a vis economic growth in Nigeria within a period of twelve years (2010–2021).

3.4 Source of Data

This work employed secondary source of data. Secondary data were obtained from the annual statistical bulletin and other reports of Central Bank of Nigeria, and National Bureau of Statistics over the period 2010 – 2021.

3.6 Method of Data Analysis

In this study the researcher adopted the multiple regression analysis based on the classical linear regression model, otherwise known as ordinary least square (OLS) technique. The estimation covered the period between 2010 – 2021 while the secondary data obtained from the Central Bank (CBN) statistical bulletin for various years were analyzed using E – View 8 package.

3.7 Model Specification

For the purpose of the study a multivariate econometric model was specified and estimated. The model examines the relationship between the foreign portfolio investment and economic growth using selected appropriate variables such as Portfolio investment, inflation rate and interest rate. The functional specification is shown thus;

INV= f (INT, TSA, and INF,)

The multiple regression is specified as:

$INV = \beta 0 + \beta 0_1 INT + \beta 0_2 TSA + \beta 0_3 INF + e$

Where,

INV = log of Domestic Investments

INT = log of Interest Rate

TSA = log of Total Savings

INF= log of inflation rate.

β 1- β 3 – coefficient of the explanatory variables

e = error term

CHAPTER FOUR

Data Presentation, Analysis and Discussion

4.1 Presentation of Data

Table 4.1: Domestic investment (INV), Interest Rate (INT), Total Savings (TSA), and inflation rate (INF)

Year	INV (₦' B)	INT (₦' M)	TSA Mil $	INF(%)
2010	62,980.40	18.99	5,707.00	17.59
2011	62,980.40	17.59	5,941.37	16.02
2012	71,713.94	16.02	6,526.69	16.79
2013	80,092.56	16.79	8,021.19	16.72
2014	89,043.62	16.72	9,603.45	16.55
2015	94,144.96	16.55	11,451.59	16.85
2016	101,489.49	16.85	11,763.92	16.87
2017	113,711.63	16.87	14,034.23	17.55
2018	127,736.86	17.55	14,464.64	16.90

2019	144.210.49	16.90	14,559.19	15.38
2020	154,345.12	15.38	16,893.19	13.64

Source: CBN Statistical Bulletin, 2020.

4.2 Regression Result.

Dependent variable: INV
Method: least squares
Date: 08/25/22 Time: 07:04
Sample: 11

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	13.9566	0.35604	4.53856	0.0000
INT	1.49023	0.67640	2.93954	0.0845
TSA	0.98396	0.15177	3.19798	0.0031
INF	-0.38137	0.72873	2.82902	0.0023

R –squared	0.83699	mean dependent var	0.792000
Adjusted R-squared	0.813182	S.D dependent var	0.407510
S.E of regression	0.454515	Akaike info criterion	0.810675
Sum squared resid	14.95599	Schwarz criterion	0.946434
Log likelihood	-44.66718	Hannan – Quinn criter.	0.865827
F –statistic	9.787687	Durbin-Watson stat	1.220922
Prob (F-statistic)	0.00000		

Source: e-view 9, 2022.

4.3 Interpretation of Result

$INV = \beta_o + \beta_1 INT + \beta_2 TSA + \beta_3 INF + \mu t$

$INV = 13.9566 + 1.49023\ INT + 0.98396\ TSA - 0.38137 INF + \mu t$

t-stat = (4.5386) (2.9395)(3.1979) (2.82902)

R^2 = 0.83699

Adj. R^2 = 0.8132

Durbin - Watson = 1.220922

F- Statistic = 9.787

From the result above, the estimate of β_o is 13.9566. This shows that if the independent variable is zero, the dependent variable would be 13.9566. It implies that there is a direct relationship between the dependent and independent variables.

The estimate of a β_1 is 1.49023. This implies that there is a direct relationship between the Interest Rate (INT) and Domestic investment (INV). An increase in Interest rate (INT) would course 1.49023 changes in Domestic investment (INV). In other word, Interest rate (INT) and Domestic Investment (INV) moves in the same direction.

The estimate of a β_2 is 0.98396. This implies that there is a direct relationship between domestic Total Savings (TSA) and Domestic Investment (INV). A unit change in Total Savings (TSA) will bring about 0.98 unit change in gross Domestic Investment (INV). This Implies that Total Savings (TSA) and Domestic Investment (INV) moves in the same direction.

The estimate of a β_3 is - 0.38137. This implies that there is an indirect relationship between Inflation rate (INF) and Domestic Investment (INV). A unit increase in inflation rate (INF) will bring about - 0.3813 decrease in Domestic investment (INV).

The co-efficient of determination (R^2) is 0.83699. This implies that the dependent variable Domestic investment (INV) was able to explain 83.70% of the total variation while the remaining 16.3% was captured by the stochastic variable (u) showing that the variables are suitable.

The Durbin – Watson d statistic at 5% dL = 1.142, du = 1.739, D.W = 1.220922, is significant and i.e dL < d > du (1.142 < 1.2209 > 1.739) there is presence of negative autocorrelation.

4.4 Hypothesis testing

Hypothesis I

Ho: Interest rate has no effect on domestic investment in Nigeria.

Decision Rule: if the tcal > ttab reject Ho. However, the t-statistic is 2.9395. From the statistical table tc >tt. (ie 2.9395 > 2.776). Therefore, 2.9395 falls outside the H_O acceptance region hence, that the true parameter of a_1 is significant at 5% level.

INV = 13.9566 + 1.49023FPI + 0.98396INT - 0.38137INF + μt

t-stat = (4.5386) (2.9395)(3.1979) (2.82902)

Conclusion: It is therefore concluded that there is significant relationship between interest rate (INT) and Domestic Investment (INV). As such, the null hypothesis Ho which states that interest rate has no effect on domestic investment in Nigeria is rejected and concludes otherwise.

Hypothesis II

Ho: Total savings has no effect on domestic investment in Nigeria.

Decision Rule: if the tcal > ttab reject Ho and accept Hi. However, the t-statistic is 3.197. From the statistical table tc >tt. (ie 3.1979 > 2.776). Since 3.1979 falls outside of the H_o acceptance region hence, we reject H_o that the true parameter of a_1 is significant at 5% level.

Conclusion: The study therefore concludes that total savings has a significant effect on domestic investment in Nigeria. The null hypothesis Ho is rejected while the study concludes otherwise.

Hypothesis III

Ho: There is no relationship between inflation rate and domestic investment in Nigeria.

Decision Rule: if the tcal > ttab reject Ho and accept Hi. However, the t-statistic is-0.38137.

From the statistical table tc >tt. (ie -0.38137< 2.776). Therefore, -0.38137 falls inside the H_i rejection region hence, we reject H_i that the true parameter of a_1 is significant at 5% level.

Conclusion: The study therefore concludes that there is negative relationship between inflation rates and domestic investment in Nigeria.

As such, the null hypothesis Ho which states that Inflation rate has no significant effect on domestic investment in Nigeria is rejected.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study was an attempt to examine the analysis of interest rate on savings and domestic investment in Nigeria within the period 2000 – 2020. The following were the findings of the study

1. The inability of interest rates, (savings rate and lending rates) to respectively predict savings and investment was one of the major findings of the study. In the case of savings rate, it suggests that other factors such as lack of confidence in the banking system, low income and preference for cash may be of greater influence.
2. That investment is not lending rate driven is very surprising also, but in an economy where most of the lending is not for productive purposes, this can be understood. As these funds are not used for productive purposes and since their repayments sources are guaranteed (salaries in the case of civil servants) the rate of interest fizzles out into inconsequentiality. This shows that our banks concentrate in short term consumer lending without bothering to finance the productive sector.
3. Investment and savings are seen to be highly positively correlated just as lending rate and exchange rates. This implies that policies aimed at encouraging savings will rub off positively on investment. Since it has been established that interest rate through its equilibrating effect on the financial market, moderates activities including investment in the real sector, the importance role interest rate development cannot therefore be over emphasized. This is why an economy like Nigerian's in dire need of development must conscientiously implement interest rate policy that will encourage investment while not discouraging savings. The result also shows that credit, savings and investment are strong determinants of economic growth.

5.3 Conclusion

This research has provided reliable evidence of the effect of interest rate on domestic investment in Nigeria. The conclusion to be drawn from this study is that interest rate exerts significant influence on domestic investment in Nigeria in the short run, indicating that domestic investment in Nigeria is largely not based on long term expectations. This could be could be because investors takes into consideration the unstable macroeconomic environment of the Nigerian economy. In addition to Total savings, interest rates and inflation influences domestic investment in Nigeria. Therefore, an efficient and effective good international trade position and the overall state of the economy determine whether or not domestic investment will produce the desired gains in the economy.

5.4 Recommendations

The study found that interest rate, total savings and inflation rate is a significant determinant of domestic investment in Nigeria. Thus, can be established from the findings of this study that there's a negative and long run relationship between inflation rate and domestic investment.

In order to boost investment in Nigeria, certain recommendations have been made in this study which when considered hold the key to unlocking the investment potentials in the country.

To give suggestion as how to manage successfully the public sector for an optimum investment in the country. Also to proper suggestion for sound interest rate management that will make for an optimum investment climate in Nigeria. This is

because economic growth and development came from investment, in the light of the researcher's finding. The recommendations are:

1. Monetary authorities should promote policy that will improve deposits and also make available loanable funds to encourage investment.

2. Monetary authorities should make policies which would help to boost the saving culture of the people. This could be done by increasing the deposit rate which would lure the people to deposit their money in banks thereby increasing the supply of loanable funds. This would lead to a fall in interest rate and eventually rise in investment.

3. The CBN should be independent from the control of the government. In this way, the CBN can establish open market operation (omo) for government borrowing. This will not only limit government expenditure to their revenue but will help to stabilize the investment rate according to the dictate of the free market by this the traditional relationship between interest rate and public investment will be restored.

4. The policy market should embark on a policy that will reduce interest rate as will stimulate investment and increase output, proper implementation and co-ordination of policy objective should be rigorously pursed implementation of policy is usually multidimensional and hence calls for effective co-ordination among the various government department, banks and other relevant sectors.

5. Since savings encourage investment and income lead to savings, the researcher therefore recommend programme or polices by government that will facilitate increased income level under of poverty cycle citizen order to ensure sufficient serving that bring

about high rate of investment which will eventually lead to economic growth and development.

References

Abu, N.L., (2006). Cited in Adofu et al (2010) An Assessment of the Effects of Interest Rates Deregulation in Enhancing Agricultural Productivity in Nigeria. Current Research Journal of Economic Theory. PP. 82 – 86

Acha I. A and Acha C. K (2011). Interest Rates in Nigeria: An Analytical Perspective. *Research Journal of Finance and Accounting*. ISSN 2222. 2 (3) 71-82

Adekanye, J. U. J (1993), *Business and Economics Research Method*, Lagos; Don

Ajilore, M. A (2014) .The Demand for Money in Pakistan. *Pakistan Development Review* 13:140-150 springs.

Akintoye, I.R and P.S. Olowolaju, (2008). Optimizing Macroeconomic Investment Decision: Lesson from Nigeria. Eur. J. Sci. Res. 22:469– 479.

Ananth, M.A., & Hansen, Y.U., (2013). An investigation of the Relationship between Interest Rates and Economic Growth in Nigeria, (1970-2006*). Journal of Economic and International Finance* 1(4), 093-098.

Chete R.A. (2006), Unpublished Notes on Investment Analysis and Portfolio Management.

Chioma, M.O, (2017). Agricultural and Policy under Structural Adjustment Programme in Nigeria. A paper Presented at the 1988 Annual Conference of the Economic Society at ObefemiAwolowo University, Ile Ife, Nigeria.

Eregha, U.O., (2010). Interest Rate Policy, Savings and Investment in Nigeria. *CBN: Economic and Financial Review* 31(1) March Vinton Limited.

Fry M. J (1978). Money and Capital or Financial Deeping in Economic Development." *Journal of money, credit and banking.* 10(3) 24:49-62.

Fuller, M. J. (1990). *Money, Interest and Banking Development, London*: John Hopkins University press.

Hamrita S. I & Abdukader, A. A. (2011). Financial Sector Reform, Microeconomic Instability and The Order of Economic Liberalization: The Evidence From Nigeria. *African Economic Research Paper 112,* ISBN 9966, 944-52.

Hsing, I. (2004). The impact of Interest rate liberalization on investment in Nigeria. *University of Nigeria, Nsukka*.

Jhingan. M. L (2010). *Macro-Economic Theory* 12th Edition. Vrinda Publication (P) Ltd. India

Jorgenson, D. (1963). Econometric Studies of Investment Bevahiour. *Journal of Economic Literature, vol 9.*

Keynes J. M (1936). *The General Theory of Employment, Interest Rate and Money;* New York: Harcourt, Brace and Co.

Koutsoyiannis, (1997). T*heory of Econometrics:* an introductory exposition of Economic method Second edition.

Luckett, D.G., (1984), *Money and Banking*, New York; McGraw Hill

Mahmudul, A., Gazi Salah, U., (2009). "The relationship between interest rate and stock price: Empirical evidence from developed and developing countries," International journal of business and management, Vol.4, No3, pp.43-51.

Mchinon, O.J. (1973). Monetary Policy Framework in Africa: The Nigerian Experience. *Proceedings of Conference on Monetary Policy Framework in Africa, Pretoria*

Mckinnon, R. and Shaw, (1973). Money and Capital in International Development. The Brokenness Institution, Washington D.C.

Nwachukwu, A. & Odigie, G. (2009). *The impact of interest rate liberalization on the corporate financing strategies of quoted companies in Nigeria.* AERC.

Obamuyi, T.M (2009). An investigation of the Relationship between Interest Rates and Economic Growth in Nigeria, (1970-2006*). Journal of Economic and International Finance* 1(4), 093-098.

Obasan, W.O., Okoroafor, O.P., & Milicient K.L., (2013). An investigation of the Relationship between Interest Rates and Economic Growth in Nigeria, (1970-2006*). Journal of Economic and International Finance* 1(4), 093-098.

Obute, C. Adyorough, A. and Itodo, A. I (2012). An Assessment of the Impact of Interest Rate Deregulation on Economic Growth in Nigeria (1964-2009). *Journal of Business and Organisational Development.* ISSN 2277-0046. www.cenresinpub.org

Odhiambo N. M and Akinboade O. A. (2009).Interest Rate Reform and Financial Deeping in Botswana: An Empirical Investigation. *Economic note* 38(1-2)

Odoko, A., Okafor, D., & Kama, T., (2008). "Stock market capitalization and interest rate in Nigeria: A time series analysis," *International Research Journal of Finance and Economics, Issue 4, pp.154-67.*

Odoko, U. (2002). *Macro Economic Theory*.CalabarSae sprint (Nig). Co

Oduh, O.J. (2012). Monetary Policy Framework in Africa: The Nigerian Experience. *Proceedings of Conference on Monetary Policy Framework in Africa, Pretoria*

Ogunjioba, B. & Obiechie, I. M (2012). The impact of Interest Rate on Investment in Jordan: A Co-integration Analysis. *JKAU: Economic and Administration*, 24 (1), 199-209.

Ojim, T.A., & Emerenini, H.P., (2015). Interest Rate Policy, Savings and Investment in Nigeria. *CBN: Economic and Financial Review* 31(1) March Vinton Limited.

Olubanjo, B.A., (2010). Interest Rate Policy, Savings and Investment in Nigeria. *CBN: Economic and Financial Review* 31(1) March Vinton Limited.

Oosfisan., P.O., (1993), Impact of Interest rate Liberalization on economy of Bangladesh.

Ostery, M.S, &, Reinhart TRV (1999). Determinants of Growth (Ed). Available at http://book.google,co.uk/books

Owusu, M.N,. Odhiambo U.I., (2001). An investigation of the Relationship between Interest Rates and Economic Growth in Nigeria, (1970-2006*). Journal of Economic and International Finance* 1(4), 093-098.

Retler A. & Sibler, K. (1986). Interest Rate Policy and Promotion of Savings, Investment and Resource Mobilization in Nigeria. *Research paper 24, Development policy centre Ibadan.*

Shaw E. S.(1973). Financial Deeping in Economic Development. *New York, Oxford University press*

Soludo T. W. (1998) Interest Rate Liberalization, Savings, Investment and Growth: The Case of Kenya, Savings and Development, vol. 16, no.3, pp. 305-320.

Soyibo, A. and Adekanye, F. (1992). Financial System Regulation, Deregulation and Saving Mobilization in Nigeria. *AERC, Research paper 2, Nairobi Kenya.*

Uchendu A. O (1993). Interest Rate Policy, Savings and Investment in Nigeria. *CBN: Economic and Financial Review* 31(1) March Vinton Limited.

Uremadu, Y.J., (2008). Interest Rate Policy, Savings and Investment in Nigeria. *CBN: Economic and Financial Review* 31(1) March Vinton Limited.

Yinghan, G. O (2018). *Nigeria Financial System.*MacMillan publisher (Nig) Ltd.

Zorder, M.L. (2005) Macro-Economic Theory. Vrinda Publication (P) Ltd, Delhi.

Appendix

Year	INV (₦' B)	INT (₦' M)	TSA Mil $	INF(%)
2010	62,980.40	18.99	5,707.00	17.59
2011	62,980.40	17.59	5,941.37	16.02
2012	71,713.94	16.02	6,526.69	16.79
2013	80,092.56	16.79	8,021.19	16.72
2014	89,043.62	16.72	9,603.45	16.55

2015	94,144.96	16.55	11,451.59	16.85
2016	101,489.49	16.85	11,763.92	16.87
2017	113,711.63	16.87	14,034.23	17.55
2018	127,736.86	17.55	14,464.64	16.90
2019	144.210.49	16.90	14,559.19	15.38
2020	154,345.12	15.38	16,893.19	13.64

Source: CBN Statistical Bulletin, 2020.

4.2 Data Analysis

Dependent variable: INV
Method: least squares
Date: 08/25/22 Time: 07:04
Sample: 11

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	13.9566	0.35604	4.53856	0.0000
INT	1.49023	0.67640	2.93954	0.0845
TSA	0.98396	0.15177	3.19798	0.0031
INF	-0.38137	0.72873	2.82902	0.0023

R –squared	0.83699	mean dependent var	0.792000
Adjusted R-squared	0.813182	S.D dependent var	0.407510
S.E of regression	0.454515	Akaike info criterion	0.810675
Sum squared resid	14.95599	Schwarz criterion	0.946434
Log likelihood	-44.66718	Hannan – Quinn criter.	0.865827
F –statistic	9.787687	Durbin-Watson stat	1.220922
Prob (F-statistic)	0.00000		

Source: e-view 9, 2022.