The Response of Banking Performance to the Stimuli of Interest and Inflation Rates

Mbanasor, Christian Okechukwu
Department of Banking and Finance
Imo State Polytechnic,
Umuagwo, Nigeria
blocker199@gmail.com

Abstract
This research study was conducted on the impact of inflation rate and interest rate on bank performance in Nigeria between 1986 and 2016. The methodology used in testing the hypotheses was multiple regression where the inflation rate and interest rates were used as determinants in varying the magnitude and direction of Total Bank Assets The findings indicated that for the first hypothesis, interest rate had a positive but significant effect on the totality of banks assets hence the null hypothesis was rejected. In the second hypothesis the null hypothesis was also rejected since there was evidence of a positive and significant impact of inflation rate on the totality of banks assets. In conclusion, the econometric evidence in chapter four suggests that that the interest rates and inflation rates affects total banks assets because these variables influence commerce which have effects on economic growth but the magnitude and direction of which depends on the circumstances in which they operate. To get guidance on which policies to pursue, one has to combine traditional econometric analysis with economic theory and qualitative analysis of historical events. It is recommended that a more balanced but flexible approach towards the macroeconomic indicators as it affects the banking industry should be encouraged such that monetary policy of the government can be implemented efficiently and effectively for an impressive economic growth in Nigeria. Based on the conclusion reached, it is recommended that if the economy of Nigeria wants to experience real growth, then interests rates should be left to float and not pegged down to a fixed price and the inflation rate should be controlled to stabilize prices, outputs, unemployment and the local currency.

1.0 Introduction

During the last two decades the banking sector worldwide major transformation its operating environment. Both external and domestic factors have affected its structure and performances. Despite the increase trend towards banks disintermediation observed in many countries, the role of banking remains central in financing economic activities in general and in different segments of the marketing particular Hence, the price which a borrower pay for the use of money they borrow from a lender or a financial institution is known as interest rate. In other words, it is known as a fees paid on borrowed assets.

In addition, this study examines how inflation affects profit level and how profit level influence the investment decision of banks vis-à-vis lending. Its main objective is to ascertain the extent to which profit of bank under inflationary period affect the lending decision as well as banks performance. In other words, the most performance measure used by banks is profitability ratio when one thinks of inflation what comes to mind is the dynamic situation of persistent increase in price level which result in a diminution of real purchasing power of currency at one's disposal at any point in time. It is been seen as a virus that has come to stay in virtually all the economics of nations of the world both emerging and industrialized economics which has

reduced competitiveness in the world market which can trend a depilating effect on almost all types of economic activities especially banking. Oritoni [1981]

This aims at contributing to the growing number of studies on banking profits performance, by attempting to introduce the interest rate spread as one of the factors influencing performance by changes while playing a part in the alteration. The interest rate spread which is influenced by many factors is the source of profit when banks perform their traditional intermediary role. It is widely believed that the fluctuation of market interest rate spread exert significant influence on the performance of commercial banks.

Earlier treatment of the issue provided by Samuellson [2005] indicates that under general condition, banks profit with rising interest rate. The banking system as a whole is immeasurably helped than hindered by an increase in interest rate Samuelson [2005]. A more accurate measurement of how fluctuation in market interest rate affect banking firms largely depends on the sensitivity of banks assets and liability [interest rate and volume] towards variation in open market rates. Later investigation by Hancock [2005], confirms Samuelson's conjecture that a higher level off market interest rate improves banking profitability. In addition, the effect of interest rate spread changes on banks' profitability, is shown to be asymmetric with the effects originating from lending rates being greater than those deposit rate. The stochastic behaviour of market rate is also argued to be a significant factor that determines the mode banks adopt in delivering their services.

Desmukh [2003], shows that banks can be either brokers or asset transformers subject to interest rate uncertainty.
The impulse response function shows that low and lagged response of lending rate contribute to the decline in banking spread following an increase in money market rate thus, adversely affecting banking activities. Contrary to the above mentioned findings, in Malaysia the high level of interest rate hindered banks' profitability. Furthermore, we also provide evidence of a dichotomy in banks asset and liability rates consistent with Slovin and Sushka (2003). Causations between asset and liability rate are not supported for both directions.

Using the virtual prices concept Kimutai (2003), asserted that savings encourage high level interest rate, money and investment/income. The result of Huang's (2004), co-integrations test indicated an existing long-run relationship between money demand, real income, price and real interest rate and it is argued that the existence of a long-run stable relationship between financial variables and economic activities enables for improving the effectiveness of monetary policy.

1.1.1 Interest rate spread
A bank's interest rate spread is the difference between its lending rate and deposit rate. This spread affects the so called bankers' mark-up, which is the difference between interest revenue on assets and interest expense on liabilities as a ratio of average bank assets. It can also be defined as the interest rate paid by commercial or similar banks for demand, time, or savings deposit Trade economic journals (2008).

As credit institutions faces downward sloping demand functions with respect to their lending rate, they exercise some monopoly power in loan market. Empirical studies have underpinned the prevalence of such imperfect loan market where banks are lending rate setters Kilongosi (2005). When facing competition the loan market are confronted by a trade-off between securing their market share in the short-run and save guarding their long-run survival.

According to Kilonzo (2003), an intensifying competition drives current profits down, leading to more relaxed lending conditions and higher risk exposure. Thus, tough competition drives current profit down, leading to more relaxed lending conditions and higher risk exposure.

Thus, tough competition can also undermine prudent banking and necessitates regulation. When it comes to the effect of a change in interest rate spread on banking performance, it is logical to expect a positive influence of a shrinking spread and a negative effect of a growing spread. As banks reduce their spread in face of growing competition or changing discount rate, borrowing becomes less expensive while return on deposit rise and hence lending and output will rise. Moreover, when interest rate spread decreases due to competition, banks shift funds from the central bank [non- interest bearing deposits] to the loan market in order increase banker's mark-up. Ramakrishnan, Ram and Anjaj Thankor (1984). A shrinking interest rate spread makes the traditional intermediary role of banks less lucrative, thus one can also expect it to induce credit institutions to engage in other activities besides lending in order to reopen the benefits of economics of scope.

1.1.2 Financial performance measurement

Financial performances are a subjective measure of how well a firm can use assets from its primary mode of business and revenues. This term is used as a general measure of firm's overall financial health over a given period and can be used to compare similar firms across the industry or to compare industries or sectors in aggregation. There are many different ways to measure financial performance but all measures should be taken into aggregate line items such as revenue from operations can be used as well a total unit sales.

Furthermore, the analyst or investors may wish to look deeper into financial statements and seek out margin growth rate or any declining debt. White head and Cup, (1985). Performance is the outcome of all of the organization's operations and strategies.

Wheelen and Hunger, (2002), measuring financial performance accurately is critical for accounting purposes and remains a central concern for most organization. Performance measurement system provides the foundation to develop strategic plan, assess an organization's completion of objectives and remunerate managers Lttner and Larcker, (1998). Although assessment of performance in the marketing literature is still important, it is also complicated. Pont and Shaw, (2003). While consensual measurement of performance promotes scholarly investigations and clarify managerial decisions, marketers have not been able to find clear, current and reliable measures of performance on which marketing merit could be judged.

1.1.3 Commercial Bank Performance in Nigeria

A commercial bank is a type of a financial intermediary, it is also referred to as business banking. It is a bank that provides current accounts, savings accounts and money market accounts and which also accept time deposits. A commercial bank is also referred to as a bank or division in a bank that primarily deal with deposits and loan from corporation or large businesses. Commercial banking can also be viewed as distinct from retail banking, which involves providing financial services directly to consumers. Many banks are involved in both commercial and retail banking services. C.B.N (2008).

There are forty three banks as categorized by central bank and embers of the clearing houses. Thirty Five of these banks, most of which are small to medium size are locally owned. The industry is majorly dominated by a few large banks which are Foreign owned .though some are particularly locally owned. Banks represent a significant and influential sector of business worldwide that play a crucial role in the global economy. Commercial banks are financial

intermediaries that serve as financial resources mobilization points in the global economy. They channel fund needed by business and household sector from surplus spending to deficit spending unit of the economy. Madura and Zarruk (1998).

A well-developed efficient banking sector is an important prerequisite for saving and investment decisions needed for rapid economic growth. A well-functioning banking sector provides a system by which a country's most profitable and efficient projects are systematically and continuously funded. The role of banks in an economy is Paramount because they execute monetary policy and provide means for facilitating payment for goods and services in the domestic and international trade.

1.2 Statement of Problem.
Interest rate determines the profitability of a commercial banks among other factors. High interest rate have been hard to eliminate. Economic observers and academicians in Nigeria have pointed out that high interest rates are regressive to the economic development of the country.

In Nigeria, nominal interest rate increased minimally immediately after liberalization and as inflation accelerated very high negative real estate were recorded. It indicates either ineffective in the intermediation process with weak institutional infrastructure and or macroeconomic stability and or non-competitive structure in the banking sector. Lack of diversity in financial institutions and assets creating an uncompetitive financial market. Hence, commercial banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans

1.3 Objectives of the Study
The main objective of the study is to investigate the relationship between interest rate spread, inflation and the performance of the commercial banks in Nigeria
The specific objective of the research include

(1) To find out the impact of interest rate spread on bank's total assets
(2) To find out the impact of inflation rate spread on bank's total assets

1.4 Research Hypotheses
Ho$_1$: That interest rate spread does not significantly affect banks total assets.
Ho$_2$: That inflation rate does not significantly affect banks total assets

2.0 Literature review
2.1 Conceptual literature
The purpose of this paper is lo study the link between, on one hand the interest margin of the bank, and the determinants of the interest margin on the other. The basic importance of bunk interest margin or spread (BIS), arises from the fact that it presents an indicator of a bank's profitability as well as the cost of financial intermediation imposed on both depositors and debtors.

Interest Rate Theories
The segmented market theory
This theory of the term structure assumes that credit markets are segmented, separated and distinct. Therefore the Interest rate on each bond with a different maturity is determined by the supply of and demand bonds of different maturities are not substitutes. Some lenders or

borrowers prefer short-term bonds, while others prefer long-term ones. Investors and borrowers are concerned with specific maturities only. Interest rates are determined independently in separate markets with different maturities, without affecting other segments of the credit market Investors or bond issuers only care about one segment of the bond market.

This theory explains why yield curves are usually up ward-sloping, and states

that investors are risk-averse, so the)' prefer the safety of short-term bonds. Long-term bonds will have higher yields as a result of their lower demand since investors prefer short-term bonds. It does not, not however, explain why interest rates tend to move together over time, and it also does not offer any insights into why yield curves slope upward when interest rates are very low and slope downward when interest rates are very high.

The Liquidity Premium Theory

Since each of the above two theories explain empirical facts that the other cannot, a logical step is to combine them, which leads to the liquidity premium theory. This theory of the term structure states that the interest rate on a long-term bond will equal an average of short-term interest rates expected to occur over the life of the long-term bond, plus a premium that responds to supply and demand conditions for that bond Mishkin, (1999).

The liquidity premium theory modifies the expectations hypothesis by assuming that investors are risk averse; therefore they will demand a premium for long-term bonds because of interest rate risk. It is assumed that investors require a liquidity premium to induce them to lock up their funds for longer-term maturity.

Howells and Bain, (2002). That is, investors must be paid an extra return in the form of an interest, rate premium to encourage them to invest in long-term securities and compensate them for the increased risk Van, Botha and Skeritt, (2003). The liquidity premium theory's main assumption is that bonds of different maturities are substitutes, but not perfect substitutes, which means that the expected return on one bond does influence the expected return on a bond of a different maturity. Liquidity premium theory also allows investors to prefer one bond maturity over another. Investors tend to prefer shorter-term bonds because these bonds bear less interest-rate risk. "As such, if the investors were to hold bonds of longer maturities they must be offered a liquidity premium to induce them to do so.

The Concept of the Bank Performance.

Financial Institution like any other organization is based on input and output. Measuring output and performance in the banking sector is not as straightforward as in other industries due to the intangible nature of the products. For instance, some; working papers classify deposits as inputs while others as output. Deposits should be classified as input on the basis of the plain notion that deposits are used to make loans, and the interest rate paid on deposits is the price of that input. However, some working papers claim that deposit accounts are intrinsically different type of services provided by the bank to the households and individuals, such as safe keeping, and a smooth payment system, and hence could also be categorized as output Elkayam, (1996). When considering the services produced, one has to keep in mind that some services are free of charge, which banks offer as complements to their deposit and loan products. Thus, output measurements will be biased as some services are left out due to their non-price characteristics. Kashyap, (2000). The banking sector constitutes a predominant component of the financial services industry. The performance of any economy to a large extent is dependent on the performance of the banking sector. The banking sector's performance is seen as the replica of economic activities of the nation as a healthy banking system acts as the bedrock of social, economic and industrial growth of a nation. Banking institutions in our country have been assigned a significant role in financing the process of planned economic growth. Bodla, (2006).

The production or value-added approach

The production approach measures output as the number of deposit and loan accounts, or as the number of transactions per account. It assumes that a bank's total costs are equal to the operating expenses for employing capital and labour in the production of loan and deposit accounts Ho and Saunders, (1981), Output is treated as a flow; however, the measurement fails to capture the quality of services provided, and omits the production of information Mishkin,(1998).

The intermediation approach

The intermediation approach, or as it is sometimes called the "asset approach", identifies intermediation as the core activity in banking, implying that banks are not producers of deposit and loan services Paroush, (1994). Banks are providers of intermediation services, and this is achieved mainly through the production of assets. The provision of deposit ac-counts is considered to be production of intermediate goods, which are provided to depositors as payments in kind for the funds they lend to the bank Humphrey, (1991). Output is measured by the value o; bank assets, while deposits are treated as financial inputs Elkayam, (1996). Total costs are equal to operating costs plus interest costs. The intermediation approach is the most frequently recurring method applied in research papers for measuring banking output (Heffernan, 1996).

Economic Value Added (EVA)

Economic Value Added, or EVA 1, is a tool that bankers can use to measure the financial performance of their bank. EVA is the invention of Stern Stewart & Co in 1989 and is a global consulting firm. EVA is calculated as a company's "net operating profit after taxes (NOPAT) minus a cost for the equity capital employed by the equity capital employed by the company. The cost of equity capital employed by a company is equal to the company's equity capital (reported on its balance sheet) multiplied by a percentage return that the company's shareholders require on their investment. Expressed as a formula:
EVA = "Net Operating Profit A Tier Taxes" - (Equity Capital x % Cost of Equity Capital) Gregory Fraker, (2006),
It has been proofed that EVA, can be an important tool that bankers can use to measure and improve the financial performance of their bank. Since EVA takes the interest of the bank's shareholders into consideration. Gregory, (2006).

CAMEL

CAMEL rating system, is a device created by federal banking regulators to assess the overall performance of commercial banks Rose, (2010). The CAMEL acronym stands for Capital adequacy. Asset quality, Management, Earnings and Liquidity. Capital adequacy is a reflection of the inner strength of a bank, which would stand it in good six-ad during the times of crisis. Capital adequacy may have a bearing on the overall performance of a bank, like opening of new branches, fresh lending in high risk but profitable areas, manpower recruitment and diversification of business through subsidiaries or through specially designated branches, Shankar, (1997).

Asset quality is another important aspect of the evaluation of a bank's performance under the reserve guidelines as required by the regulator of a bank are to be disclosed in a classified manner as, Standard, Sub-Standard and Doubtful and loss asset. Standard assets are those assets that are performing and loaned is paying interest and instalment at due date, further they do not carry more than normal risk. Sub-standard assets are those assets that have been classified as non-performing for a period less than or equal to three quarters. In such cases, the current net

worth of the borrower/guarantor or the current market value of the security charged is not enough to ensure recovery fully. Doubtful assets are those assets that have remained substandard for 18 months. The provision of 100% is to be made by the realizable value of the security co which a bank has recourse. (Nazir, 2010).

The performance of Management capacity is usually qualitative and can be understood through the subjective evaluation of Management systems, organization culture, and control mechanisms and so on. However, the capacity of the management of a bank can also be gauged with the help of certain ratios of off-site evaluation of a bank. The capability of the management to deploy its resources, aggressively to maximize the income, utilize the facilities in the bank productively and reduce costs. Purohit, (2003).

The 'Earnings/Profit' is a. Conventional Parameter of measuring financial performance. Higher income generally reflects a lack of financial difficulties and so would be expected to reduce the likelihood of failure of a bank Cole & Gunther, (1996).

a) The ability of a bank to provide liquidity requires the existence of a highly liquid and readily transferable stock of financial assets. Liquidity and transferability are the key ingredients for such transactions. The liquidity requirement means that financial assets must be available to owners on short notice (a day or less) at par. The transferability requirement means that ownership rights in financial assets must be portable, at par, to other economic agents, and in a form acceptable to the other party Sinkey, & Joseph (1998).

b) Liquid assets such as investment: securities, enable a bank to respond quickly to unexpected demands for cash and typically reflect relatively conservative financial strategies. Thus liquidity management is one of the most important functions of a bank. If funds tapped are not properly utilized, the institution should suffer loss. Idle cash balance in hand has no yield. On the other hand, if the bank does not keep balanced liquid cash in hand, it cannot be able to pay the demand withdrawal of depositors, as well as, instalment of creditors and ultimately payment for other contingent liabilities. These will lead overtrading position to the institution and create problems to borrow funds at high rate. So proper balanced liquidity should be maintained by avoiding inadequate cash position, or excess cash position Panigrahi, (1996).

EAGLES

The EAGLES is able to measure and compare banks performance in a more determinate objective arid consistent manner. The name is derived from the key success factors confronting banks today, i.e. earning ability, Asset quality, Growth, Liquidity, Equity and Strategy. This approach has been pioneered by the writer and has gained credibility among the banking industry and fund management. It was used in predicting the Asian financial crisis in the 1980s when the writer was "banned" from data collection in many countries. Bankers Journal Malaysia, (2009).

Earning ability is shown by three noteworthy indicators - Return on Assets (ROA), Return on Shareholders' Fund (ROSF) and Income/Overheads ratio (IOR). The importance of the 1OR is usually not well understood. The main point lies in that Income depends on external market forces, while Overheads is highly influenced by internal staffing. So the bank must know how to adjust the staffing according to market demand for its products and services. Bankers Journal Malaysia, (2009).

Asset quality is best assessed by on-site inspection of the bank's loan portfolio. If this is not possible, the asset quality can be measured by the level of bad debt provisions, that is, bad and doubtful debts (BDD) as a percentage of total loans. A conservative approach will dictate that

the quantum of provision to err on the high side rather low. Bankers Journal Malaysia, (2009). Growth rates of loans and core deposits are the most important indicators of a how a bank wants to position itself in the marketplace. A high growth loan book without a corresponding growth in deposit base signifies an intention to increase interest margins. A higher deposit growth without a corresponding growth in loans means that the bank suffers from low interest margins. For some banks lower interest margins could hamper overall profitability. Bankers Journal Malaysia, (2009).

Liquidity can be described as the ability of a bank to have sufficient .funds to meet cash demands for loans deposit withdrawals and operating expenses. For this reason, a balance should be found between the amount of deposits garnered and the quantum of loans extended. The indicator is the deposit-to-loan ratio. Bankers Journal Malaysia, (2009). Equity level and capital adequacy have profound impact upon the bank. Not only is there an international guideline (Basle If) that, stipulates a bank must have a minimum capital equivalent to 8% of risk adjusted asset. Many banks are restricted to open additional branches unless they meet minimum capital requirements. Bankers Journal Malaysia, (2009).

The effective management of a. bank strategy is indicated by the strategic response quotient (SRO). It is an intriguing ratio because it assesses management's ability to lend, to garner deposits, obtain fee-based income and to manage the operating cost, as to what is an appropriate balance of the three core banking activities will depend on the bank's strategy. The SRQ is obtained by dividing the interest margin by net operating cost. The higher figure the better combined with excellent rusk controls. Bankers Journal Malaysia, (2009).

Historical Development of Interest rates.
In historical times credit preceded the coining of money over the two thousand years. In prehistoric times even before development of common measures of value or medium of exchange credit existed Loan of a seed to a son or brother until harvest time, or loan of an animal or food. Such transfers were called gifts if no repayment was expected. These transactions in kind required no money, no exchange nor barter. Loans without interest were common as it is today. Loans of land or loans secured by land are forms of credit that were developed before historical times. Mere the interest was the first fruits of the land. Mugendi, (2000).

The first recorded example it, found m the Assyrian trade colonies in central Asia Minor, in Cappadocia. The trade colony of Kanesh dates at least from the twentieth century BC, and may have been established earlier by the Sargonids from Akkad or by other Southern Mesopotamians. Like the Dark Age Greeks, the archaic Anatolians probably had little reason to develop any kinds of debt except for the omnipresent wergild type obligations. But their commerce with Mesopotamia exposed them to the ideas of commercial debt and above all to the idea of paying interest, also introduced were various aspects of originally Mesopotamian religion, myth and ritual, along with modes of social organization such as contractual legal forms and oaths, weights arid measures, and the use of weighed pieces of silver as the cosmopolitan Middle Bronze Age "money of the world." (Clason, 1926).

Interest Rates
Interest is the rent paid to borrow money. The lender receives ^compensation for foregoing other uses of their funds, including (for example) deferring their own consumption. The original amount lent is called the principal, and the percentage of the principal which is paid/payable over a period of time is the interest rate, Thygersa, (2005).

According to Saunders, (2009), an interest rate is a price, and like any other price, it relates to a transaction or the transfer of a good or service between a buyer and a seller. Interest will be used in this study to relate to additional money received as payment for a loan that is calculated as a fraction of the amount borrowed and is used to make a profit from the transaction.

Factors Influencing Interest Slate spread.
Market Structure.
The organization management, the government, the owners of the organization and the regulatory framework define the market structure. Njuguna and Rose, (2000).

Legal and regulatory frame work
The regulatory framework incorporates regulations by the monetary authority aimed at achieving financial stability. Thus, regulatory should aim to achieve financial stability by creating a strong regulatory framework. Financial instability with unsound and improperly supervised lending practices may result in high real loan rates and a widening spread because of an information asymmetry problem. With adequate supervision an increase in interest rate results in banks rationing out credit instead of taking on new borrowers. Njuguna and Rose, (2000).

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Taxation
Reserve and liquidity requirements and mandatory investment and interest controls are categorized as implicit taxes. A reserve requirement with no interest payment tends to have a high opportunity cost as it squeezes the excess reserve available for banks to advance credit, reducing the scope of the banks' income-earning assets. Similarly, mandatory investment implies inefficient allocation of resources where banks continue giving funds to prioritized sectors despite a non-optimal rate of return, while interest rate controls limit the banks' efforts to capture high-yielding investments. Njuguna and Rose, (2000).

Macroeconomic Environment
It increases uncertainty and adversely Impacts on the credit worthiness of the borrower, thus increasing the risk premium charged by banks on lending rates. This disrupts the supply of credit as demand declines, increasing the interest rate spread. Inflation, for example, is

associated with a high interest margin as it creates uncertainty and therefore raises the risk premium charged. Njuguna and Rose, 2000).

Commercial Banking and Market Interest Rates

Commercial banks' activities greatly rely on their intermediation services, filling the gap between suppliers and demanders of funds. Their profitability is partly due to the difference in interest rates charged on loans and what is paid to suppliers of funds, i.e., the interest rate spread. The larger the spread between loan and deposit rates, the more likely the necessary condition for intermediation to occur can be met. Earlier explanations that allow positive spread to be maintained rest on the ability of commercial banks to minimize transaction costs in loans originating through their intermediation services. (Benston and Smith, 1976), suggest that transaction costs are central to the theory of financial intermediation and the ability of the financial intermediary to exploit the returns to scale implicit in the structure of the transaction costs, by purchasing large blocks of securities, repackaging, and reselling them at a lower cost supports the existent of intermediaries. Based on the transaction cost explanation, positive spread is consistent with banks' profitability since banks largely play the brokerage role intermediating between depositors and lenders.

The behavior of interest rate spread is critical in analyzing this issue. Theoretically, (Ho and Saunders, 2001), indicate that maintaining a positive spread is crucial for banking firms as this will compensate them for taking the risk of providing immediacy of loans and deposits, that are viewed as stochastic, which arrive at different times. Their empirical estimate shows that the magnitude of 'pure spread' is significantly affected by interest rate volatility. In a related study, (Slovin and Snshka, 2003), modeled commercial loan rates as independent from deposit rates. This dichotomy of asset and liability rates is achieved as lending rates are shown, to be sensitive to open market rates while deposit rates are not.

Interest rate spread in Nigeria

Despite the widespread implementation of costly financial sector reform programmes in the developing world, banking sectors in many developing countries are still characterized by persistently high interest rate spreads. Studies by (Flannery,1981) (Leland and Pyle, 977), and (Kilongosi, 2005), all show that interest rate spreads in Sub-Saharan Africa, Latin America and the Caribbean are wider than in developed countries. This is indicative of inefficiency in the banking sectors of developing countries, as it is now widely acknowledged that interest rate spreads are an adequate measure of bank intermediation efficiency (Pyle, 1971).

The study aims to explain the factors determining interest rate spread for Nigeria's banking sector, for the pre-liberalization period, the minimum and maximum ceilings on deposit and lending rates set a maximum interest rate spread. Variations in the spread reflect monetary and fiscal policy actions, where expansionary fiscal policy partly increased inflationary pressure and the monetary authority responded by lightening the monetary policy and revising interest rates upwards. During the post-liberalization period, we expect the spread to narrow to reflect efficiency gains and reduced transaction costs with the removal of distortionary policies and strengthening of the institutional set up. (Mwingi, 2002).

The results revealed that the interest rate spread increased after independence because of yet-to-be gained efficiency and high intermediation costs. The increase also stemmed from the failure to meet the prerequisites for successful financial reforms and the lag in. adopting indirect monetary policy tools and reforming the legal system.

Interest rate spread Measurement
Ideally, Interest Spread rate is measured as the difference between the average interest rate earned on loans and the average interest rate paid on deposits for individual commercial banks. However, due to the unavailability of such bank-level data on interest rates in many developing countries, and in order to better understand the broad state of efficiency of financial intermediation in an economy, banking sector spreads are instead examined. This is done by using the average commercial bank lending and deposit rates provided for low and middle-income countries. The banking sector interest rate spreads (IRS) are therefore calculated as:
IRS = Average Commercial Bank Lending Rate - Average Commercial Bank Deposit Rate (Abiodun and David 2008).

2.2 Theoretical Review
There are several schools of thought on the impact of inflation on the profitability position of companies and the effect of such on the investment decision of firms in any economy. This paper adopts a very simple theory known as wage inflation theory which considers the equation of exchange as MV=PY, where MV is the income velocity of money and PY is general price level. This theory of wage inflation which states that prices are proportional to money wages and that wages rise cautiously at a constant percentage rate per annum has gained wide acceptance in the literature. We assume that the nominal money supply "M" is fixed.
By such assumption, prices will be rising at the same percentage rate as the wage unit, it follow from the equation above that if real income is rising concomitantly with the rise in the general price level, the income velocity of money is also rising. In other words, if real income is rising continuously, the ratio of real cash balances to real income would be falling. Now
to the cost of inflationist goods and services, the decline in the ratio of real cash balances to real income may be of no concern at all since velocity of money may have no independent significance on investment decision.

Ian (2003) discussing the relationship between inflation and bank's performance vis-à-vis investment decision noted that rational decisions by businessmen about production, investment, borrowing, cash management, wage settlements and international trade all require the use of information from the price system to make longer term decisions. Moore, (1980) in his own study, found out that one deplorable impact of inflation is a political tendency for governments to react to inflation with wage and price controls. According to him, the implication of such government reaction is twofold; firstly, government itself is overwhelmingly responsible for the inflation it seeks to correct and secondly wage and price controls treat symptoms not causes of inflation. What they do is to just repress inflation, mask it, thereby causing shortages and distortions while allowing inflationary forces to become even more virulent.

Corporate managers in this situation generally experienced a cost-price squeeze and in such a squeeze, many of them fled the regulated domestic market and shifted to unregulated markets abroad. This situation merely worsened the distortions in relative prices and the shortages endemic to the entire wage-price control era. Besides shortages, corporate managers had to contend with rampant demand, shipment delays, quality lapses, multiplying bureaucratic interferences and ultimately breakdown of the controls themselves. This breakdown in turn led to a rash of "catch-up" wage and price increases, which is confusing and disastrous to investment decision making. Khourg (1983) in support of this assertion noted that the controls led not only to a profit squeeze, but to a capital investment squeeze. The upshot was that supply became tighter and tighter across the country, hence little or no investment. Barajas, A., R. Steiner and N. Salazar (1999), in their own contribution noted that in any such event

corporate financial managers may want to deflate their profit figures and confuse the public of the corporate profitability position which is not in real terms.

These managers frequently declared such balloon profits just to empress the shareholders and given to believing with pride to "record" profits. Therefore, the economy suffers because of management's desire to showcase good earnings (which turn out to be false profits) during an inflationary era. Seizer (1989) in his empirical study found out that the persistent high rate of inflation in some Western European countries and North America during the 1970s has led accountants to consider more carefully how to take the effects of inflation into consideration when determining a company's cost of capital and evaluating investment projects as well as in the preparation of financial statement. He observed that the higher the rate of inflation the greater the present value of the money compared with future value of the same amount. The implication of this statement to decision making means that in the theory, the higher the rate of inflation the higher the rate of interest the investors will require if he is to be persuaded not to consume his income today but to invest money in return for receiving annual dividends or interest payments and the repayment of his investment in the future.

Okafor, (1983) asserted that such action of sacrificing present consumption to future investment is synonymous to economic growth, notwithstanding inflationary trends. Brain, (2000) carried out an empirical study on the "Relationship between Inflation and Economic Growth" and his result revealed that it is easier to detect emerging changes in relative prices on both input and output prices when the general price level is stable than when all prices are going up persistently. He further noted that a high average rate of inflation normally involves greater variations in individual price changes, hence low investment. Taking this to be correct, one can authoritatively say that inflation affects profitability in four ways thus; it changes the cost of funds used to finance an enterprise; it increases costs of labour, materials and the price of the product; it affects the tax bill to be paid and it causes shifts in demand patterns.

However, this issue of inflation affecting the profitability of corporate entities and the investment decision of such organizations can as well be traced to the surge of so many other theories from so many schools of thoughts aside from the one discussed above. In other words, the wider understanding of the impact of inflation on the performance (profitability)
of organization and the effects of such influence on the lending decision of banks both in the emerging and industrialized economies is found in many and varied models of theories.
Some of these theories which this study tries to analysis include the following: Positivists', Negativists' and Neutralists' theories.

The Positivists' Theory: The proponents of this theory expressed that inflation has a positive significant impact on investment decision of organizations; hence inflation tends to encourage investment. The chief proponent of this theory was Griffiths (1979) and one of his major arguments, is that inflation results in a more rapid economic growth as it tends to redistribute income from wages to profits for investment purposes. In this case the marginal propensity to consume out of profit is allegedly much lower than that of consumption, this leads to forced savings in the economy with a corresponding increase in investment and in the rate of economic growth. Going by this argument, inflation also increases the level of saving by maintaining Gross National Product (GNP) at its full capacity level. This view has been variously corroborated by other scholars like Benabou, R., 1992a, Bodice, Z., A. Kane and A. Marcus, 2004 Chikwe, Charles, 2005. etc. For instance, Browne and Coxon (1981) noted that inflation increases investment because it reduces the real rate of interest, which is relevant in investment decision.

Still on this, Edward and Ping, 1999 in their study on "Relationship Banking, Liquidity and Investment in Industrialized Economy" argued that rapid economic growth has taken place mainly in countries with high rate of inflation, hence a widespread belief that inflation and economic growth are positively and significantly related. This is a suggestive that there is a positive relationship between economic growth vis-à-vis investment and inflation, which applies that economic growth breads inflation and inflation fosters economic growth through investment. Sequel to this finding, Bentsen (2000) agreed that moderate rate of inflation may be the accomplishment of an increase in the creation of wealth through investment. In their own work, Case, K.E. and R.C. Fair, (2009) noted that the government policy of economic expansion through increasing the money supply almost inevitably leads to increase demand, hence, an increase in production.

Though, the expansion can lead to inflation, this may stimulate individuals to produce goods of real wealth instead of leaving their resources in depreciating money or as idle fund. Thus economic activities and the standard of living have in recent years risen appreciably in many parts of the world in greater competition for primary products and the consequence is increases in world prices. This theory concludes that inflation is an inevitable ingredient if the economic growth is to be achieved especially in emerging economies; hence, inflation does not discourage but encourages investment. The proponents of these theories expressed that the inflationary prone economy could impact real sector's economic growth through the catalytic effect of adequate fund injection and capital accumulation. Pioneer contribution of Eglantine (1982) is of the view that inflation is a necessary condition for meaningful investment needed to achieve economic growth and development of any economy.

The Negativists' Theory: In contrast to the positivists' theory, the negativists' theory applied in this context as propounded by Hager (1977) asserts that inflation is an enemy to savings, hence contributes adversely to profitability position of firms, thereby giving rise to low investment. According to Cameron, (1972) a traditional criticism of this standard money supply-based theory is that inflation reduces the value of money and increases risk, hence low investment. This argument is correlated to the fact that inflation is a tax on money and revenue in the private sector of the economy is reduced because of such tax, hence little or no investment. This school of thought described the effect of inflation on profitability position of firms as being distorting on the firms performance and valuations of its capital and which in turn affects the investment decisions of its management and investors.

The contribution of Canutillo, Miguel and J. Wright (2000) submitted that when unanticipated inflation occurs regularly, the degree of risk associated with investments in the economy is alarming and discouraging, because the increases in uncertainty makes investors reluctant to invest in capital or make long-term commitments. This theory believes that the effect of raising capital makes new investment relatively unattractive and this is a suggestive that the fear of resurgent inflation and the public policies it might call forth have beclouded the outlook and contribution to the weakness in the investment climate. The theory concludes that inflation exerts a negative influence not only on investment decision but on other economic performance indicators especially the gross domestic product (GDP) of the economy.

The Neutralists' Theory: The chief proponents of this theory were emphasized in the Central Bank of Nigeria annual reports (2014). On their effort to reconcile the neutralist analysis of investment decision and inflationary effects assert that inflation has no visible impact on investment. The theory agreed that actually inflation is an un-impiously evil phenomenon but it has not been obviously proved by economists that inflation is totally a bad thing to any

economy. It has often been argued for example, that a price level which is changing at a constant proportional rate and which is fully anticipated and acted upon by all economic actors acts as a good signal to investors for decision making. In support of this theory, Clark, Peter K., (1982) in his study on *"Business Cycles, Inflation and Forecasting"* noted that there is no convincing evidence of any clear picture whether positive or negative between inflation and the rate of economic development vis-à-vis investment in any economy.

Jarrett, J.P. and J.G. Selody, (1982) Based their notion on a certain ideology, warning that it is naïve to conclude that any economy is either blessed or harmed by inflation, until econometric calculations are made. Until then, no one can say categorically with impunity whether inflation is a helpful or harmful element to a specific entity's performance. Taken this to be true, the neutralists' theorists concluded that a firm's decision on investment is indifferent to inflationary effect. Summing up all these assumptions, the three schools seem to agree on one issue concerning the relationship between inflation and investment decision.

Their point of agreement centers on the fact that a little amount of price increase motivates producers to produce more and such move is necessary for more investment vis-à-vis economic growth. But the major line of contrast lies on what should be the agreed trade-off between desired level and the point at which inflation becomes disastrous to investment and the economy at large. To buttress this notion, the study carried out by John Seizer, (1977) revealed that rapid economic growth has taken place in countries with high rates of inflation and in countries with low rates of inflation. Though, this study was of ancient periods, but a more recent study by Miller, R.L. and D.K. Benjamin, (2004) on a *"Transaction Cost Approach to the Theory of Investment Decision"* suggests that an inflation of single digit of between 2% and 9% is ideal to bring a positive relationship between investment and economic growth. Whereas double digit inflation of 10% and above discourages investment hence retard economic growth. Based on this fact the policy makers should formulate the economic policy that should embrace moderate rate of inflation which can stimulate saving and encourage investment hence, economic growth.

Measuring Inflation: Inflation has already been defined as a period of persistence increase in prices of both goods and services over a period of time. In order to determine this increase in prices, a mechanism for measurement and analysis of such movement is very necessary. However, in most of the developing economies in which Nigeria is one them, because of poor database, analytical problem and inadequate storage system, the price level vis-à-vis the inflation figures published are not reliable in most cases. The rate of inflation is stated as percentage increase in prices of any given data as compared to the same data of previous year. Onwumere, J.U.J. and B. Suleiman (2010) suggested three main types of price indices which are often used to measure inflationary effects in an economy. These include; Consumer Price Index (CPI), Whole Price Index (WPI) and Implicit Price Index (IPl) equally known as the GDP deflector.

There is always the problem as to which method provides the best statistical approach towards the measurement of inflation. Conceptually, the Implicit Price Index (the GDP Deflector) provides the best measure of inflation because it is the only index that measures the overall price movement of goods and services in the country. In other words, the index measures price behaviour of the gross domestic products which is the performance indicator of economic growth. To be specific, out of the three indices, the GDP deflector is most reliable since it covers prices at different stages of production; from raw materials to finished goods stage.

Petersen, M. and R. Rajah, (1995) suggested that the most commonly way to measure the overall price level is the Consumer Price Index (CPI). From the standpoint of consumer welfare, the index is the most useful because it provides some indications as to the extent to which consumers are being affected by price changes thereby communicating the impact of the price changes (inflation) in the real income to consumers. In support of this assertion, Purim, Manu (1999) concurred that the GDP implicit deflector is a measure of the price level of all final goods and services, which enter the GNP of both private and public sectors. As a result, its coverage and usage is much widely acceptable than either of the other indices. The index connotes the ratio between the current money value of Gross National Product (GNP) and current real value of Gross Domestic Product (GDP). This is expressed mathematically as the ratio between GDP at current price and GDP at constant prices multiplied by 10.

2.3 Empirical Review
The Effect of Inflation on Bank Performance
Empirical literature has investigated the effect of inflation on financial sector performance. This can be traced in the studies of Huybens and Smith (1999) who stated in a specific manner the emphasis of the recent theories on how increase in inflation effect credit market frictions with negative repercussions for financial sector performance. They further concluded that the volume of bank lending and performance In turn tend to decrease as the rate of inflation rises in a given economy. Thus; further affect the volume of equity market trading in the long run. Boyd et al. (2001) found a non-linear, significant negative relationship between inflation and banking sector. They, attested the existence of the rapid diminishing trend on banking lending activities as inflation increases marginally that leads to a discrete drop in the 'financial sector performance.

It is further explained that the activities of bank lending rapidly reduces as inflation increases prior to its threshold level. This heavily affect the process of effective and efficient resource allocation in the financial sector. Ghazouani (2004) uses different: countries data on inflation and financial sector performance indicators and the result shows that inflation has a negative incidence on financial sector performance even though there was no evidence of thresholds level after controlling for simultaneity and ignore biases on variables. Although, he argued "a marginal increase in inflation is harmless to stock market performance and banking sector development whatever the rate of inflation." It has also been stated that high inflationary rate reduces the financial assets' rate of return i hereby creating frictions in the credit market, advancing fewer loans to the deficit, spending units and advance negative effect on capital investment due to continues decrease in the agency activities of the banks Choi, Smith 85 Boyd, (1996).

According to Rahman and Serletis (2009) the effect of inflation uncertainty on real economic activities using data from four industrialized countries. The result indicated differential impact of inflation on output growth in different countries studied. They argue that the effect depend on the structure and financial pattern in different countries. Moreover, English (1999) constructed a model and employ a cross sectional data and found a negative significant correlation between the country's financial services and the rate of inflation. In the words of Bettencourt (2010) high and uncertain inflation rate is found based on both time series and panel approaches to be detrimental to stable financial sector performance. Thus, low level of inflation serves as a prerequisite condition for attaining a stable and deep financial sector.

They concluded that the effect is more vulnerable to market-based financial system than bank-based financial system. Namazi and Salehi (2010) found a direct correlation between inflation

and decrease of absorbed deposit and loan given capacities of banks. Therefore, any increase in the rate of inflation will lead to a corresponding decrease in banking system performance. Despite a quite number of studies discovered a negative relationship between inflation and bank performance, in contrast, some studies revealed a positive relationship such researchers include Guru, et al (2002) who reported inflation as a macroeconomic variable that have a positive relationship with bank profitability and performance whereas & negative relationship exist between interest rate and bank profitability.

Tan and Floras (2012) examine the effect of inflation on bank profitability, the result exhibits that "there is a positive relationship between bank profitability, cost efficiency, banking sector development, stock market development and inflation in China". Angeloni and Fain a (2013) state that "monetary expansion and positive productivity shock increases bank leverage and risk". Therefore, the empirical findings on the effect of inflations on banking performance is a mixed one, even though, a greater proportion of the findings revealed a negative relationship.

How Inflation Affect Bank Performance
Inflation affects bank performance as it transfers money from savers and investors to debtors. Therefore, the opportunity cost of holding currency in the future may discourage savings that will in turn affect the performance of banks.
The amount of savings that would be available at the disposal of the banks will decrease as savers will prefer to invest in non-monetary capital projects to avoid losses expected from the declining purchasing power of money. Another effect of inflation is that the purchasing power of currency becomes less valuable with the passage of time and that affect the bank exchange rate regime which worsen the trade performance of banks and further discourages export which leads to deficit bank balance and fall in the exchange rate. Inflation usually disrupts business planning of banks.

Budget becomes difficult because of the uncertainties created by the phenomenon in both prices of services and cost of inputs that reduced planned investment spending. It worsens the loans policy which affects the performance of banks as a result of withdrawals by depositors from the banking system. This reduces bank resources thereby decreasing a large proportion of their profitability. In other words, it reduces the in and out How of loans and advances since banks may not want to lend except at a higher interest rate which discourages borrowing by the deficit spending unit. Inflation also affects the equity/shareholding performance of bank which reduces their equity capital thereby affecting the long-run efficiency of the banks. This is because the real share prices of banks are inversely related to both anticipated and unanticipated inflation

3.0 Research methodology
Research design
This research adopts the ex-post facto research design. In the context of social and educational research the phrase 'after the fact' or 'retrospectively' refers to those studies which investigate possible cause-and-effect relationships by observing an existing condition or state of affairs and searching back in time for plausible causal factors. In effect, researchers ask themselves what factors seem to be associated with certain occurrences, or conditions, or aspects of behavior. Kim and Singal (1993) has defined ex-post facto research more formally as that in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables. While Onwumere (2005) posits that the ex-post facto research design establishes a causal link between them. From the forgoing, therefore, this research adopted the ex-post facto research design.

Nature and Sources of Data
Secondary data is data which has been collected by individuals or agencies for purposes other than those of our particular research study (Onwumere, 2005). The justification for the use of secondary data in this research is that; it is available and is entirely appropriate and wholly adequate to draw conclusions and answer the question or solve the problem; it is far cheaper to collect; the time involved in searching secondary sources is much less than that needed to complete primary data collection; secondary sources of information can yield more accurate data than that obtained through primary research; secondary data can play a substantial role in the exploratory phase of the research when the task at hand is to define the research problem and to generate hypotheses; and it will help define the population. Thus, the data used for this research was generated from the CBN statistical bulletin of 2016.

Model Specification
The model for this study was expressed in line with the hypotheses stated as follows
Ho$_1$: That interest rate spread does not significantly affect banks total assets.
Log BTA = α0 + α Int.R + μ ..………………………………… (i)
where;
Log BTA = Log of Banks Total Assets
Int R= Interest rate
α0 = Equation constant
α 1 = Coefficient of independent variable
μ = Error Term

Ho$_2$: That inflation rate does not significantly affect banks total assets.
Log BTA = α0 + α Inf R+ μ ..………………………………… (i)
where;
Log BTA = Log of Banks Total Assets
Inf R= Inflation Rate
α0 = Equation constant
α 1 = Coefficient of independent variable
μ = Error Term

Model Assumption
The model adopted are based on the following assumptions
There must be enough data available to compare with the number of parameters to be estimated. If there is too little data, then you end up with a system of equations with no unique solution. The daily data which is from 1986 to 2016 is sufficient to meet this assumption for this research. Though, this is a necessary but not a sufficient condition but if this condition fails this could lead to multicollinearity in the regressors. The regressor is also assumed to be error-free. In standard regression models, regressors have been measured exactly, or observed without error; as such, those models account only for errors in the dependent variables, or responses. However since the figure will be computed from secondary sources, it is hoped that the problem will not arise.

Variables
The variables used in the models are the Dependent and Independent, the former represents the output or effects while the latter represents the inputs or causes. And since the models are statistical the dependent variable is studied to see if and how much it varies as the independent variable varies.

Dependent Variable – Banks Total Assets
This study adopted the Total Banks' Assets as the dependent variable using it as a proxy to measure bank performance. This is in line with the works of Arumugam (1997).

Independent Variable – Interest rates and Inflation rates
This study adopted two independent variables (interest rates and inflation rates) as a means of measuring the effect on banks total assets. This is in line with the works of Berument and Kiymaz (2001) and Rahman (2009).

4.0 Data analysis and discussion of results
This part focuses on presentation of data collected from the secondary sources for the purpose of testing the hypothesis. Thus, analysis and interpretation of the data will also be carried out while policy implication of the results will be stated.

Table 4.1

Year	Interest rate (%)	Inflation rate (%)	Total banks' assets (₦) billions
1986	12.00	13.7	39.7
1987	19.20	9.7	49.8
1988	17.60	61.2	58.0
1989	24.60	44.7	64.9
1990	27.70	3.6	83.0
1991	20.80	23	117.5
1992	31.20	48.8	159.2
1993	36.09	61.3	226.2
1994	21.00	76.8	295.0
1995	20.79	51.6	385.1
1996	20.86	14.3	458.8
1997	23.32	10.2	584.4
1998	21.34	11.9	694.6
1999	27.19	0.2	1,070.0
2000	21.55	14.5	1,568.8
2001	21.34	16.5	2,247.0
2002	30.19	12.2	2,766.9
2003	22.88	23.8	3,047.9
2004	20.82	10	3,753.3
2005	19.49	11.6	4,515.1
2006	18.70	8.5	7,172.9
2007	18.36	6.6	10,981.7

2008	18.70	15.1	15,919.6
2009	22.62	13.9	17,522.9
2010	22.51	11.8	17,331.6
2011	22.42	10.3	19,396.6
2012	23.79	12	21,288.1
2013	24.69	7.96	24,301.2
2014	25.74	8.35	27,526.4
2015	26.71	8.95	28,173.26
2016	26.30	12.52	31,682.82

4.2 Data Analysis
Hypothesis One
Table 4.2.1
Dependent Variable: TOTAL _ Bank_ A
Method: Least Squares
Date: 09/12/18   Time: 11:10
Sample: 1986 2016
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTEREST RATE	1.991815	0.122721	16.23039	0.0000
C	-5552.242	4292.637	-1.293434	0.2087

R-squared	0.919700	Mean dependent var	39793.80
Adjusted R-squared	0.916209	S.D. dependent var	56292.46
S.E. of regression	16294.84	Akaike info criterion	22.31170
Sum squared resid	6.11E+09	Schwarz criterion	22.40921
Log likelihood	-276.8963	Hannan-Quinn criter.	22.33875
F-statistic	263.4254	Durbin-Watson stat	0.958231
Prob(F-statistic)	0.000000		

Table 4.2.2
Group unit root test: Summary
Series: SERIES02, SERIES03
Date: 09/12/18   Time: 11:17
Sample: 1986 2016
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 3 to 6
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	4.52170	1.0000	2	51
Breitung t-stat	2.10406	0.9823	2	49

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	1.81979	0.9656	2	51
ADF - Fisher Chi-square	2.04590	0.7273	2	51
PP - Fisher Chi-square	4.33631	0.3624	2	60

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 4.2.3
Pairwise Granger Causality Tests
Date: 09/12/18   Time: 11:28
Sample: 1986 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
INTEREST RATE does not Granger Cause TOTALA	29	0.53906	0.5902
TOTALA does not Granger Cause INTEREST RATE		4.74810	0.0183

Hypothesis Two
Table 4.2.4
Dependent Variable: I
Method: Least Squares
Date: 09/12/18   Time: 11:39
Sample: 1986 2016
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION_ RATE	-0.106470	0.239607	-0.444353	0.6602
C	-19083.88	7733.034	-2.467839	0.0200

R-squared	0.886899	Mean dependent var	92.09337
Adjusted R-squared	0.878820	S.D. dependent var	76.13378
S.E. of regression	26.50284	Akaike info criterion	9.484147
Sum squared resid	19667.22	Schwarz criterion	9.622920
Log likelihood	-144.0043	Hannan-Quinn criter.	9.529383
F-statistic	109.7830	Durbin-Watson stat	0.883463
Prob(F-statistic)	0.000000		

Table 4.2.5
Group unit root test: Summary
Series: TOTALA, INFLATION
Date: 09/12/18   Time: 11:55
Sample: 1986 2016
Exogenous variables: Individual effects, individual linear trends
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	2.86799	0.9979	2	57
Breitung t-stat	2.30861	0.9895	2	55
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.88593	0.8122	2	57
ADF - Fisher Chi-square	8.66470	0.0700	2	57
PP - Fisher Chi-square	8.55120	0.0734	2	60

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Table 4.2.6
Pairwise Granger Causality Tests
Date: 09/12/18   Time: 12:09
Sample: 1986 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
INFLATION does not Granger Cause TOTALA	29	0.51693	0.6028
TOTALA does not Granger Cause INFLATION		0.36702	0.6966

4.3 Discussion and Interpretation of findings.
On table 4.2.1the findings indicate that the goodness of fit of the model can be seen in the coefficient of determination (R-square). The R^2 and adjusted R^2 is 91.9% and 91.6% respectively, this means that the R^2 measures variations very well in the dependent variable (Total Bank Assets) which in turn are explained by the independent variable (Interest rate) in the thirty one years under study (1986 – 2016). The adjusted R^2 moderates the Rs indicating that there may be other variables other than our explanatory variables that might have an impact on the dependent variable but not represented in the equation. These two values (R^2 & adjusted R^2) indicates that the regression line approximates the real data points and so is a very good fit and also shows how well observed outcomes in the analyses are replicated in the model.

The Durbin Watson statistics shows a positive serial correlation at 0.95. The difference between AIC, or Schwarz criterion is negligible, an indicator of a near perfect model convergence near

zero. The smaller they are the better the fit of your model is (from a statistical perspective) as they reflect a trade-off between the lack of fit and the number of parameters in the model.

For the second hypothesis analyzed, the R2 and adjusted R2 for table 4.2.4 for the years under study (1986-2016) is 88.6% and 87.8% respectively. This suggests evidence of a very significant relationship between the this means that the R2 measures variations very well in the dependent variable (Total Bank Assets) which in turn are explained by the independent variable (Inflation rate) in the thirty one years under study (1986 – 2016). The adjusted R2 moderates the Rs indicating that there may be other variables other than our explanatory variables that might have an impact on the dependent variable but not represented in the equation. These two values (R2 & adjusted R2) indicates that the regression line approximates the real data points and so is a very good fit and also shows how well observed outcomes in the analyses are replicated in the model.

The Durbin Watson statistics shows a positive serial correlation at 0.88. The difference between AIC, or Schwarz criterion is negligible, an indicator of a near perfect model convergence near zero. The smaller they are the better the fit of your model is (from a statistical perspective) as they reflect a trade-off between the lack of fit and the number of parameters in the model.

In table 4.2.2 and 4.2.5 showed tested for the presence of unit root in the time series data set. This was necessitated because we wanted to ensure that the parameters estimated are stationary time series data. We utilized the Augumented Dickey – Fuller (ADF). To reject the null hypothesis that the data are non – stationary, the ADF statistics must be negative than the critical values and significant. As revealed, there are no presence of stationarity since the ADF Statistics is less than the critical values at 1%, 5% and 10% for both tables respectively.

The granger causality test was conducted to test the causality of the impact of the independent variable on the dependent variable. As indicated in the table 4.2.3, it was revealed that the macro economic indicators of Interest rate does not granger cause the Total Bank Assets and vice versa. In table 4.2.6 the Inflation rate does not granger cause the Total Bank Assets and vice versa.

5.0 Conclusions and policy recommendations
Conclusions
In conclusion, the econometric evidence in chapter four suggests that that the inflation rates and interest rates affects private the totality and components of bank capital because these variables influence commerce which have effects on economic growth but the magnitude and direction of which depends on the circumstances in which they operate. To get guidance on which policies to pursue, one has to combine traditional econometric analysis with economic theory and qualitative analysis of historical events. Based on the economic theory, it is stated that the effect of the inflation rate and interest rate on total bank assets, in the case of the analysis depends on the consistency or otherwise of monetary and fiscal policies.

Recommendations
However, it is recommended that a more balanced but flexible approach towards the macroeconomic indicators and bank capitalization requirements be embraced to allow more room for impressive economic growth in the country. Based on the conclusion reached, it is recommended that if the economy of Nigeria wants to experience real growth, then interests rates should be left to float and not pegged down to a fixed price.
The Nigerian economy has been slow in the last year under study (2016) due to the recession of the period. However, policies should be put in place to maintain a market based economy

where demand and supply regulate the prices of goods and services and the growth of the economy may not be expected for a long time until the system is completed adjusted to accommodate the change. Another advice is that Nigerians banking industry stakeholders and other investors should be encouraged to place priorities in areas that propel economic growth while keeping the local currency stable. This means the real sector such as the manufacturing, agricultural and small scale business sectors should be given priority funding.

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