

**IMPACT OF INTEREST RATE ON COMMERCIAL BANK LENDING  
AND DEPOSIT MOBILIZATION IN NIGERIA, 1986-2017**

**ONEBI, PREVAIL ORHUMURIGHO  
PG/M.Sc/00/31472**

**DEPARTMENT OF BANKING AND FINANCE  
FACULTY OF BUSINESS ADMINISTRATION  
UNIVERSITY OF NIGERIA  
ENUGU CAMPUS**

**JULY, 2019**

**IMPACT OF INTEREST RATE ON COMMERCIAL BANK LENDING  
AND DEPOSIT MOBILIZATION IN NIGERIA, 1986-2017**

**ONEBI, PREVAIL ORHUMURIGHO  
PG/M.Sc/00/31472**

**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF BANKING  
AND FINANCE, FACULTY OF BUSINESS ADMINISTRATION,  
UNIVERSITY OF NIGERIA, ENUGU CAMPUS IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF M.Sc DEGREE IN BANKING  
AND FINANCE**

**SUPERVISOR: PROF. J. U. J ONWUMERE**

**JULY, 2019**

### **DECLARATION**

I, Onebi, Prevail Orhumurigho, a postgraduate student in the department of Banking and Finance with Registration Number PG/M.Sc/00/31472 do hereby declare that this research embodied in this thesis is my original work. It has not been submitted in part or full to this or other University, for the award of any Degree or Diploma.

.....  
**Onebi, Prevail Orhumurigho**  
**PG/M.Sc/00/31472**  
**(Student)**

.....  
**Date**

## **APPROVAL PAGE**

This Thesis has been approved by the Department of Banking and Finance, Faculty of Business Administration, University of Nigeria, Enugu Campus, by

.....  
**Professor J. U. J. Onwumere**  
(Supervisor)

.....  
**Date**

.....  
**Dr. Obiamaka Egbo**  
(Head of Department)

.....  
**Date**

## **DEDICATION**

This project is dedicated to the memory of my late parents Pa and Mrs. Silver Irhirhi Onebi and my late siblings - Madam Leapyear Roseline Onebi, Madam Victoria Odivwi Onebi and Mr. Williams A. Onebi. You all should rest in perfect peace. Amen.

## **ACKNOWLEDGEMENTS**

I wish to express my profound gratitude my profound gratitude to all who have contributed towards making this a success.

I am specially indebted to my associate dean who doubled as my supervisor, Prof. J.U.J Onwumere for his useful criticism, and for finding time out of his tight schedule to go through the rudiment of this project with me. I cherish his brilliance in supervising this project. May GOD Almighty bless him.

Also, I wish to express my gratitude to my beloved wife, Mrs. Helen Adaobi Prevail and Miss Akpesiri for their unalloyed support.

Worthy of mention is the brotherly support of Dr. Imo Ibe. Brother, I really very much appreciate you.

I thank all my course mates with whom I started this programme together for their encouragement and moral support.

Onebi, Prevail Orhumurigho

## **TABLE OF CONTENTS**

|                       |      |
|-----------------------|------|
| Declaration           | i    |
| Approval              | ii   |
| Dedication            | iii  |
| Acknowledgments       | iv   |
| List of Tables        | viii |
| List of Figures       | ix   |
| List of Abbreviations | x    |
| Abstract              | xi   |

### **CHAPTER ONE: INTRODUCTION**

|     |                           |    |
|-----|---------------------------|----|
| 1.1 | Background of Study       | 1  |
| 1.2 | Statement of Problem      | 5  |
| 1.3 | Objectives of the Study   | 7  |
| 1.4 | Research Questions        | 7  |
| 1.5 | Research Hypotheses       | 8  |
| 1.6 | Significance of the Study | 8  |
| 1.7 | Scope of the Study        | 9  |
|     | References                | 10 |

### **CHAPTER TWO: REVIEW OF RELATED LITERATURE**

|         |                                                                   |    |
|---------|-------------------------------------------------------------------|----|
| 2.1     | Conceptual Framework                                              | 12 |
| 2.1.1   | Concept of Interest Rate                                          | 13 |
| 2.1.2   | Deposit Mobilization                                              | 15 |
| 2.1.2.1 | Factors Affecting Deposits Mobilization of Commercial Banks       | 16 |
| 2.1.3   | Commercial Bank Lending                                           | 19 |
| 2.1.4   | Theoretical Framework                                             | 20 |
| 2.1.5   | Theory of Interest, and the Role of Interest Rates in the Economy | 21 |
| 2.1.6   | Interest Rate and Factors Affecting Liquidity-Money Model         | 24 |
| 2.1.7   | Theoretical Framework                                             | 25 |
| 2.1.8   | Types of Deposit Accounts                                         | 25 |
| 2.1.9   | The Factors Affecting Commercial Banks Deposits                   | 26 |

|        |                                                                         |    |
|--------|-------------------------------------------------------------------------|----|
| 2.1.10 | Factors Affecting Bank Spreads (Difference in Lending and deposit Rate) | 38 |
|        | In Developing Economies                                                 | 38 |
| 2.1.11 | Industry Specific Factors                                               | 38 |
| 2.1.12 | Macro Economic Factors                                                  | 40 |
| 2.1.13 | Bank Specific Factors                                                   | 42 |
| 2.1.14 | Lending, Deposit and Interest Rate Relationship                         | 44 |
| 2.2    | Theoretical Review                                                      | 51 |
| 2.2.1  | Loan Pricing Theory                                                     | 51 |
| 2.2.2  | Firm Characteristics Theories                                           | 52 |
| 2.2.3  | The Signaling Arguments                                                 | 53 |
| 2.2.4  | Credit Market Theory                                                    | 53 |
| 2.2.5  | Theory of Multiple-Lending                                              | 54 |
| 2.2.6  | The Loanable Funds Theory of Interest Rates                             | 54 |
| 2.2.7  | Liquidity Preference Theory                                             | 55 |
| 2.2.8  | Monti-Klein Model                                                       | 57 |
| 2.2.9  | HO and Saunders Dealership Model                                        | 58 |
| 2.2.10 | Hold-Up and Soft-Budget-Constraint Theories                             | 58 |
| 2.3    | Empirical Review                                                        | 59 |
| 2.4    | Review Summary                                                          | 67 |
|        | References                                                              | 68 |

### **CHAPTER THREE: METHODOLOGY**

|       |                                     |    |
|-------|-------------------------------------|----|
| 1.1   | Research Design                     | 77 |
| 3.2   | Nature and Sources of Data          | 77 |
| 3.3   | Model Specification                 | 77 |
| 3.4   | Description of Explanatory Variable | 80 |
| 3.4.1 | Dependent Variables                 | 80 |
| 3.4.2 | Independent Variable                | 80 |
| 3.4.3 | Control Variables                   | 81 |
| 3.5   | Techniques of Analysis              | 81 |
| 3.6   | Diagnostic Tests                    | 81 |

|       |                    |    |
|-------|--------------------|----|
| 3.6.1 | Multicollinearity  | 81 |
| 3.6.2 | Heteroscedasticity | 81 |
| 3.6.3 | Autocorrelation    | 82 |
| 3.6.4 | Normality          | 82 |
|       | References         | 83 |

## **CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS**

|       |                          |     |
|-------|--------------------------|-----|
| 4.1   | Data Presentation        | 84  |
| 4.2.  | Diagnostic Test          | 90  |
| 4.2.1 | Multicollinearity test.  | 90  |
| 4.2.2 | Heteroskedasticity Test  | 91  |
| 4.2.3 | Autocorrelation Test     | 92  |
| 4.2.4 | Normality Test           | 95  |
| 4.3   | Test of Hypotheses       | 95  |
| 4.3.1 | Test of Hypothesis One   | 96  |
| 4.3.2 | Test of Hypothesis Two   | 98  |
| 4.3.3 | Test of Hypothesis Three | 100 |
| 4.3.4 | Test of Hypothesis Four  | 102 |
| 4.4   | Implication of Findings  | 104 |
|       | References               |     |

## **CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

|     |                                    |     |
|-----|------------------------------------|-----|
| 5.1 | Summary of Findings                | 109 |
| 5.2 | Conclusion                         | 109 |
| 5.3 | Recommendations                    | 110 |
| 5.4 | Contributions to Knowledge         | 110 |
| 5.5 | Recommendation for Further Studies | 111 |
|     | Bibliography                       | 112 |

## LIST OF TABLES

|                                                                                                    |     |
|----------------------------------------------------------------------------------------------------|-----|
| Table 4.1: Values of Total Deposit Volume, Loan and Advances, Interest (deposit and lending) Rates | 84  |
| Table 4.2: Correlation matrix                                                                      | 91  |
| Table 4.3: Heteroscedasticity Test for the First and Second Hypothesis                             | 92  |
| Table 4.4: Heteroscedasticity Test for the Third and Fourth Hypothesis                             | 92  |
| Table 4.5: Autocorrelation Test for the First Hypothesis                                           | 93  |
| Table 4.6: Autocorrelation Test for the Second Hypothesis                                          | 93  |
| Table 4.7: Autocorrelation Test for the Third Hypothesis                                           | 94  |
| Table 4.8: Autocorrelation Test for the Fourth Hypothesis                                          | 94  |
| Table 4.9: Durbin Watson Autocorrelation Test Decision Zone                                        | 95  |
| Table 4.10: Normality test of the multiple regression models                                       | 95  |
| Table 4.11: Regression Result of Hypothesis One                                                    | 96  |
| Table 4.12: Regression Result of Hypothesis Two                                                    | 98  |
| Table 4.13: Regression Result of Hypothesis Three                                                  | 100 |
| Table 4.14: Regression Result of Hypothesis Four                                                   | 102 |

## **LIST OF FIGURES**

|             |                                                                                                  |    |
|-------------|--------------------------------------------------------------------------------------------------|----|
| Figure 4.1: | Graphical Representation of Commercial Banks' Total Deposit Volume from 1986-2017                | 86 |
| Figure 4.2: | Graphical Representation of Commercial Banks' Loan and Advances from 1986-2017                   | 87 |
| Figure 4.3: | Graphical Representation of Commercial Banks' Nominal and Real Deposit Rate Trend from 1986-2017 | 88 |
| Figure 4.4: | Graphical Representation of Commercial Banks' Nominal and Real Lending Rate Trend from 1986-2017 | 89 |

### **LIST OF ABBREVIATIONS**

|       |   |                                                    |
|-------|---|----------------------------------------------------|
| ADF   | - | Augmented Dickey Fuller Test                       |
| AEM   | - | Adaptive Expectation Model                         |
| BOFIA | - | Bank and Other Financial Institution Act Amendment |
| CBN   | - | Central Bank of Nigeria                            |
| CGS   | - | Credit to the Government Sector                    |
| DMBs  | - | Deposit Money Banks                                |
| ECM   | - | Error Correction Model                             |
| GDP   | - | Gross Domestic Product                             |
| IND   | - | Industrial Production Index                        |
| LOAN  | - | Loans and Advances                                 |
| OLS   | - | Ordinary Least Square                              |
| PSC   | - | Private Sector Credit                              |
| SAP   | - | Structural Adjustment Programme                    |
| TD    | - | Time Deposit                                       |
| TSLs  | - | Two-Stage Least Squares                            |
| VAR   | - | Vector Autoregressive                              |
| VECM  | - | Vector Error Correction Model                      |

## ABSTRACT

*There has not been a consensus on the efficacy of monetary policy instruments in achieving the much desired macroeconomic objectives in Nigeria. It is therefore against this background that this study sought to: (i) examine the impact of nominal interest rate on commercial bank deposit mobilization in Nigeria, (ii) determine the impact of nominal interest rate on commercial bank lending in Nigeria, (iii) examine the impact of real interest rate on deposit mobilization in Nigeria, and (iv) assess the impact of real interest rate on commercial bank lending in Nigeria. The study adopted the ex-post facto research design. Annual time's series were collated from the Central Bank of Nigeria (CBN) statistical bulletin for the period 1986 - 2017. Four (4) hypotheses were formulated and tested using the Ordinary Least Squares (OLS). Commercial bank total credit granted (CBTCG) and commercial bank total deposit mobilized (CBTDM) were adopted as the dependent variables and nominal interest rate (NIR) and real interest rate (RIR) were the independent variables for the hypotheses. The study also used descriptive statistics on the dependent and independent variables to complement the results. The result revealed that nominal interest (deposit) rate had positive and significant impact on commercial bank deposit mobilization in Nigeria; real interest (deposit) rate had positive and non-significant impact on commercial bank deposit mobilization in Nigeria; nominal interest (lending) rate had negative and significant impact on commercial bank lending in Nigeria and real interest (lending) rate had negative and non-significant impact on commercial bank lending in Nigeria. The study thus concludes that interest rate regime is an important factor in determining the direction and volume of deposit and advances. The study recommends amongst others that since the main source of funds for commercial banks is deposit, banks should give due emphasis to their deposits and strive to increase them and banks should increase their deposit interest rates in order to mobilise deposits since there exists a positive relationship between savings and deposit interests rates.*

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of Study**

In human societies, since the evolution of money, there have always existed those who possess money in excess of their immediate needs (surplus economic unit) and those whose current possession cannot finance their economic activities (deficit economic unit). The realization by the surplus economic unit that their excess possession can be used beneficially to meet the shortfalls experienced by the deficit economic unit led to the introduction of a credit system. This system was initially characterized by lenders (surplus units) and borrowers (deficit unit) having to search out themselves and deal directly (Akpan, 2009). Indirect financing includes the aggregation of deposits from various households, firms and government by commercial banks for lending to the deficit unit; the repayment of the loan is made to the bank which also stands ready to redeem deposits withdrawals by the surplus unit. The major determinant between surplus economic unit and deficit economic unit agreeing for a deal is the cost of parting their excess possession (interest rate). Interest rates on bank loans and savings mobilisation are important determinants of the borrowing and deposit conditions in most economies (Borio and Fritz, 1995).

Interest rates are defined as the rental payments for the use of credit by borrowers or the return for parting with liquidity by lenders. An interest rate is a price and like other prices, it performs a rationing function by allocating the limited supply of financial resources among the numerous competing demands for such resources (Ojo, 2001). The Institute of Chartered Accountants of Nigeria (2009) sees interest rate as the price one pays for money in the financial markets. It is that vital factor that is used to quantify the time value of money.

The role of interest rate in the process of economic development has remained a debated issue in developing countries. Financial liberalization was directed to reduce regulatory control over the institutional instruments and activities of agents in the financial sector. It increased the investment and raised interest rates. The low productivity of different sectors of economy suggested that it was more profitable to reinvest in bank deposits, thus reducing investment in the low productivity sector. The

financial repression leads to unproductive allocation of capital, low rate of returns to savers, high costs of financial intermediation, and inhibits growth of an economy (Roubini and Martin, 1992).

McKinnon and Shaw (1973) have showed that financial liberalization led to higher interest rates which equated the demand and supply of savings. The authors expressed their view that higher interest rates lead to increased savings and financial intermediation in improving the efficiency of savings and investment. The higher real interest rates increase the extent of financial intermediation which in turn raises the rate of economic growth in developing countries (Balassa, 1989).

Banks are statutorily vested with the primary responsibility of financial intermediation in order to make funds available to all economic agents. The intermediation process involves moving funds from surplus sectors or units of the economy to deficit sectors or units (Uremadu, 2002; Nnanna, Englama and Odoko, 2004). The extent to which this could be done depends on the level of development of the financial sector as well as the savings habit of the populace. Most banking activities are directed towards lending as credit has remained the backbone of banking operations. It is due to the fact that it provides the bulk profits of all banks profit volume. This lending could be on short, medium and/or long term basis and is a major service rendered by the commercial banks to their customers which include: individuals, firms and government to aid their economic activities for the development and growth of the national economy. Thus, banks' lending activities generate economic growth through resources provision for real investment (Mckinnon, 2005). This brought about the acceptance and implementation of financial liberalization by many developing economies including Nigeria. In spite of the well-known liberalization and similar policies, economists remain divided in their opinion concerning the relationship between Nigerian commercial banks loan advance (LOA) and the determinants of their lending behavior (Muoghalu & Ezirim 2002).

Though the lending practices of banks were strictly regulated under the close surveillance of the bank's supervisory bodies, but the Structural Adjustment Programme (SAP) introduced in 1986 brought about some relaxation of the stringent rules guiding banking operations. The Bank and Other Financial Institution Act Amendment (BOFIA) 1998 required banks to report large amount borrowing to the

CBN. Other banks enactment stipulated that the bank loans should be directed to preferred sectors of the economy (manufacturing, agriculture and power and steel) in order to enhance economic growth and development. But considering all these regulations, banks resorted to prudential guidelines to avoid failures and achieve maximum profitability in their lending activities. The commercial banks in Nigeria need to understand how to manage these huge assets in terms of loans and advance; for them to balance their main objectives of liquidity, profitability and solvency. Thus lending must be handled effectively for the banks to remain attractive and retain their customers.

The commercial banks' lending has significantly played crucial roles in igniting industrialization in every economy, by facilitating the mobilization of capital which oils the wheels of economic production (Cookey, 1997). But the sound and viable functioning of commercial banks is adversely affected by the choice of certain policy instruments for the regulation of banking operations. Such includes a rigidly administered interest rate structure, directed credit, unremunerated reserve requirements and stabilizing liquidity control measures; the volume of cash in the banks vault also determines its ability to grant advances (Ojo, 1976). Since cheques have to be met in cash in many cases, they should stock reasonable quantity of cash to meet customers demand. Moreover the days of armchair (cheap profit) banking are over and that the increasing trend in bad debts and absence of basic business corporate advisor services in most commercial banks, suggest the apparent lack of use of effective lending and credit administrative techniques in these banks. Despite the fact that commercial banks in Nigeria witnessed the era of impressive profitability, characterized by high competition, huge deposits and varied investment opportunities, some tend to disregard the fact that their administration require considerable skill and dexterity on the part of their management. Where a bank grants advances in excess of its crying ability, the bank soon runs into difficulty in meeting its customer's cash drawings. The same also applies to situation where loans and advances are given out by commercial bank without adequate or commensurable collateral and backups. Non-servicing of loans also reduce the profitability and liquidity levels of the affected banks. The recent bank reformation of 2009 revealed a lot in this line (Alao, 2010)

As banks and other financial institutions play a key role in the expenditure decisions of firms and households. They are among the most important alternatives of funding and means of saving. As such, banks and bank behavior are critical components of the transmission mechanism of monetary policy. In particular, the interest rate channel of monetary policy, which operates when banks transmit the changes in the monetary policy rate to their customers' interest rates, depends on the banks' reaction to different shocks and to the state of the economy.

Domestic savings comprise of public and private savings. The contribution of public savings in domestic savings is negligible. Peaks and Valleys in income are inevitable. Saving provide a hedge against income variability. The accumulation of resources enables households to smooth consumption and provide food security and precautionary savings are particularly important among poor household (Gutz, 1999). Savings is seen a sacrifice of current consumption that provides for the accumulation of capital, which in turn, provides additional output that can potentially be used for consumption in the future (Gersovitz, 1988). In other words, savings is the difference between current earnings and consumption. It has been defined as “deferred consumption” or part of income, which is not spent. Savings in an economy can assume one of several forms, these includes personal savings, corporate or business savings and government savings of these, the household savings or personal saving has been agreed to contribute the substantial part of the aggregate countries (Nwaobi, 2003).

Institutions in the financial sector like deposit money banks (DMBs) or commercial banks mobilize savings deposit on which they pay certain interest. To effectively mobilize savings in an economy, the deposit rate must be relatively high and inflation rate stabilized to ensure a high positive real interest rate which motivates investors to save from their disposable income. In Nigeria, the problem of mobilizing savings and deposits has always been the bane of economic growth and development. In developing economies, savings rate has been declining since the first oil shock and in the early 1990s (Chete, 1999). However this trend conceals a large and increasing dispersion of savings rate, particularly among developing countries. The large heterogeneity in savings behavior is associated with country and time differences in

levels of development, growth performance, and fiscal and financial policies. The interest rate reform policy under financial sector liberalization was also to achieve efficiency in the financial sector and engendering financial deepening.

In Nigeria, the level of funds mobilization by banks is quite low due to a number of reasons, ranging from low savings deposit rates to the poor banking habits or culture of the people (Nnanna, Englama & Odoko, 2004). Also, another disincentive to funds mobilization according to these authors is the attitude of banks towards small savers. That is most banks target corporate customers and government deposits and pay little or no attention to the small savers. Admittedly, the services rendered to the small savers are more tasking on the banks, but there is need to encourage them to save. As a matter of fact, the funds from household savings are relatively cheaper and more stable than government deposits that are very volatile and expensive.

The economic realities in Nigeria have therefore considerably reinforced those forms of greater emphasis on domestic resource mobilization. In fact, the Nigerian data reveals a small volume of savings and a low voluntary savings rate (as low as 8%). In the past two decades, the country also witnessed an atmosphere of crisis and disappointment. The financial reforms are likely to bring about considerable economic benefits, particularly through more effective mobilization of domestic savings and by efficient allocation of resources. Domestic savings had a very prominent role in order to sustain the growth of an economy because of increased external financial rigidity (Kasekende, *et al.*, 1999).

High real interest rate (on bank deposits) stimulates financial and total domestic savings and then stimulates the private investment (Athukorala, 1998). The deregulation policy of interest rate promotes the savings and investment and attained the efficient allocation of financial resources (Shrestha & Chowdhry, 2007).

## **1.2 Statement of Problem**

For more than two decades ago, Nigerian economy witnessed the introduction of Structural Adjustment Program (SAP) which shifted emphasis from public sector to private sector (Onwumere *et al.*, 2011). The goal was among other things to encourage private domestic savings mobilisation, lending for private domestic

investment and capital formation in order to enhance economic growth. By encouraging savings, resources were diverted from current consumption and invested in capital enterprises. Consequently, most countries both developed and developing have taken major steps to liberalize their interest rates as part of the reform of the entire financial system. Such liberalization represents a policy response, encompassing a package of measures to remove all undesirable state imposed constraints on the free working of the removal of interest rate ceiling and loosening of deposit and credit control (Killick & Marhn, 1990).

Unfortunately things have not worked out as expected. The initial optimism expressed about public sector reforms has not been met. Although the reform programme led to privatization and commercialization of many state enterprises including banks and improvement in some macroeconomic variables like interest rate, but not without its disappointing performances of banks to recoup savings from appropriate areas and lend to areas of concern in the economy. According to the Keynesians, interest rate increases investment while a rise in the rate of interest deepens investment. Anyawu (1993) reported that as soon as the Central Bank of Nigeria announced deregulation of interest rate in 1987. Such rise helped in rendering borrowers insolvent while it is nothing but boomerang.

Fixed savings account interest rates can also have strong consequences on overall average bank deposit and in most cases it is also affected by bank specific lending interest rates since it is customer deposits that are lent to private sector business with the expectations of returns on borrowed capital, making nominal interest rates to have a back-effect on fixed savings interest rates. Nominal interest rates therefore likely to have an indirect causal effect on customer savings through fixed savings account interest rates which will probably be true since interest on savings are likely to be paid from returns on borrowed capital obtained from nominal interest on borrowed capital. Interest rates on bank loans and savings mobilisation are important determinants of the borrowing and deposit conditions in most economies (Borio and Fritz, 1995). Consequently, these rates are highly relevant for the determination of aggregate demand and supply.

Interest rate has contributed both positively and negatively on the economy (how people lend and borrow money) as it effect the demand for and allocation of available loanable funds. Hence, the need for this research work, to determine how people respond to lending and borrowing when interest is high or low among banks in Nigeria. This study is important because the behavior of interest rates, to a large extent, determines the investment activities and hence economic growth of a country. It is therefore relevant and timely in view of the fact that there is still much ado empirically on the impacts of interest rates on lending and savings mobilization in Nigeria. It is obvious according to Umoh (2003) that an understanding of the nature of aggregate national savings and lending behavior is critical in designing policies to promote savings, investment and growth.

### **1.3 Objectives of the Study**

The main objective of the study was to examine the impact of interest rate on commercial bank lending and deposit mobilization in Nigeria during the period of 1986-2017.

The specific objectives of this study include:

- i. To evaluate the impact of nominal interest (deposit) rate on commercial banks' deposit mobilization in Nigeria,
- ii. To examine the impact of real interest (deposit) rate on deposit mobilization in Nigeria,
- iii. To determine the impact of nominal interest (lending) rate on commercial banks' lending in Nigeria, and
- iv. To assess the impact of real interest (lending) rate on commercial banks' lending in Nigeria

### **1.4 Research Questions**

Our research questions derived from the objectives of the study include:

- i. What extent is the extent of nominal interest (deposit) rates impact on commercial bank deposit mobilization in Nigeria?
- ii. What is the extent of real interest (deposit) rates impact on commercial banks' deposit mobilization in Nigeria?
- iii. what is the extent of nominal lending rates impact on commercial banks lending in Nigeria?

- iv. What is the extent of the impact of real lending rate on commercial banks' lending in Nigeria?

### **1.5 Research Hypotheses**

The following research hypotheses arose from the research questions above. These are:

- i. Nominal interest (deposit) rate did not have a positive and significant impact on commercial bank deposit mobilization in Nigeria.
- ii. Real interest (deposit) rate did not have a positive and significant impact on deposit mobilization in Nigeria.
- iii. Nominal interest (lending) rate did not have a positive and significant impact on commercial bank lending in Nigeria.
- iv. Real interest (lending) rate did not have a positive and significant impact on commercial bank lending in Nigeria.

### **1.6 Significance of the Study**

This research work will go a long way to cater for the yearning needs and aspirations of the people about the need for commercial banks to re-examine their lending savings mobilization behaviour and propositions in the face of economic changes witnessing sporadic explosion of knowledge, technological breakthrough, fast financial services, increasing needs of financial resources and paramount of all, the speedy pace of economic growth and development.

This re-examination is very necessary as the development of the Nigerian economy remains partly dependent upon increasing productivity of commercial banks in particular and the banking sector in general. The sector is expected to contribute in no small way, to the transformation of the Nigerian economy.

The role the commercial banks are expected to play in the Nigerian economy therefore makes it imperative to go into this research work. Over the years, emphases are shifted from the general commerce and other activities that are not of particular importance to growth and development of the economy, to activities like housing, agriculture and manufacturing. Although this development augured well for the

economy and is one for which the commercial banks should be highly commended, certain features of their lending activities require some comments.

With this development, it is clear that bulks of the commercial banks credit is in the short term period. This makes them very unsuitable for productive use in the agricultural, manufacturing and industrial sectors which are themselves long term in nature. The need to re-structure the lending savings mobilisation pattern to suit the need of the Nigerian economy cannot be over-emphasized.

### **1.7 Scope of the Study**

This study covers the period 1986-2017 due to availability of bank and time frame of banking sector reforms in Nigeria.. In carrying out this research, attention would be focused on commercial banks' aggregate loans and advances, aggregate savings mobilized and deposit and lending interest rate from the period when the economy was deregulated.

The post deregulation era started in 1986 driven by the structural Adjustment Programme (SAP), which marked the beginning of economic deregulation and lingering period of liberalization with the objectives of

- Restructuring and diversifying the economic base of the economy and reducing the dependency on oil
- Achieving fiscal balance and reducing the deficit in the balance of payment in the medium term.
- Laying the foundation for non-inflationary growth in the medium and long term.

The thrust of the measures for deregulation was to promote competition and efficiency through greater reliance on market forces. During this period of post deregulation the import licensing was abolished. There were partial removal of exchange control reduction of government borrowings and strengthening of the use of treasury bills as an effective tool of monetary control.

## REFERENCES

- Akpan I, (2009). *Cross channel integration and optimization in Nigerian banks*. Telnet Press Release, 20 (1), 1-4.
- Alao (2010). Interest rates determination in Nigeria: An econometric X-ray. *International Research Journal of Finance and Economics*, (47).
- Anyanwu, J. C. (1993). *Monetary Economics: Theory, Policy and Institutions*. Onitsha: Hybrid Publishers Ltd.
- Athukorala (1998). *Interest Rates, Savings and Investment: Evidence from India*, Oxford Development Studies.
- Balassa, B. (1989). Financial liberalization in developing countries. Policy, planning and research *working papers*, World Bank
- Borio, C & Fritz, W (1995). The response of short-term bank lending rates to policy rates: a cross-country perspective. *BIS Working Papers*, No 27.
- Chete, L.N. (1999), *Macroeconomic Determinants of Private Savings in Nigeria*", NISER Monograph Series, 7,1-4.
- Cookey, A. E. (1997a), Commercial Banks' loan portfolio and monetary policy in Nigeria: An empirical analysis. *The Journal of Business Industrial and Economic Research*. 1(2), 226-237.
- Kasekende, L.A. & Ating - Ego, M. (1999). Impact of liberalization and Its implications in sub Saharan Africa: The case of Uganda. *Journal of International Development*, 12(3), 56-78
- Killick, T. & Martin, M (1990), Policies for financial liberalisation. *ODI Working Paper*, No.35. London: Overseas Development Institute.
- Mckinnon, R.I. (1973), *Money and capital in economic development*. Washington: The Brookings Institution.
- Muoghalu, M. & Ezirim, C.B (2002a). Financial markets' operations and aggregate economic activity: an econometric investigation of the Nigerian experience. *The Journal of Banking and Finance*, 5(2), 25-42.
- Nnanna, O.J., Englama, A. & Odoko, E. O. (2004). *Finance, investment and growth in Nigeria*. central bank of Nigeria, corporate Headquarters, Abuja, FCT.
- Nwaobi, G.C. (2003), Solving the Poverty Crisis in Nigeria: An Applied General Equilibrium Approach. *Quantitative Economic Research Bureau*. Gwagwalada, Abuja

- Ojo, J.A.T. (1976). *The Nigerian financial system*. University of Wales Press, Cardiff.
- Ojo, M.O. (2001). Principles and practice of monetary management in Nigeria. *Central Bank of Nigeria*, 31.
- Onwumere J.U.J, Okore O. A & Ibe I. G. (2011). The impact of interest rate liberalization on savings and investment: Evidence from Nigeria. *Research Journal of Finance and Accounting*, 3(10), 20-32.
- Roubini, Nouriel & Sala-i-Martin, X (1992). Financial repression and economic growth. *Journal of Development Economics* 39(3), 5-30.
- Shaw, E. (1973). *Financial deepening in economic development*. New York: Oxford University Press.
- Shrestha, M. B. & Chowdhury, K (2007). The impact of financial liberalisation on welfare: evidence from Nepal, *Working Paper*, Applied Econometrics and International Development
- Umoh, O. J. (2003). An empirical investigation of the determinants of aggregate national savings in Nigeria. *Journal of Monetary and Economic Integration*, 3(2), 113-132
- Uremadu S. O. (2002). *Introduction to finance*. Benin: Mindex Publishing Company Limited.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.1 Conceptual Framework

Herald *et al.*, (2009) states deposits are the main source of banks to provide loan. This deposit is mainly provided by people as Mohammad & Mahdi (2010). However, deposits can also be provided by business organizations, NGOs, government etc. Therefore, whether deposits are from individuals, businesses and government they are important financial source of banks.

Banks as any other business organizations raise funds from debt and/or equity. In the banks context raising equity is more expensive or costly than attracting deposits. Lorenzo *et al.*, (2010) states that, if the lending channel plays a role, the deposit growth should lead to an increase in the supply of loans due to the additional source of financing for banks. As demand for loan increases because of the development work done by individuals, businesses and government, banks should extend their deposit base. When a commercial bank creates a deposit by lending to a business man, it is clearly performing a function for which it is entitled to a return in the form of interest payments (Harold, 1946).

Mahendra (2005) said that deposits provide most of the raw materials for bank loans and thus represent the ultimate source of the bank's profits and growth. Banks make profit by using their deposits, therefore it is said that depositors can discipline banks. Maria & Sergio (2001), found that depositors discipline banks by withdrawing deposits and by requiring higher interest rates. For depository corporations mainly deposit money banks, their principal objectives is undertaking financial intermediation to make profit and increase their shareholders value (Sheku, 2005). They achieve their objectives mainly by attracting deposits and investing the money on profitable investment portfolio.

Debt is largely held by domestic commercial banks which are funded mainly from deposits, the government demand for bank assets enabled banks to continue to expand their deposit base rapidly and profitably (Herald & Heiko, 2009). Individual investors and government mainly depend on the deposits of banks to fund their investments and/or development projects. Generally, the banking system can be viable only if it

can mobilize deposits at the required rate. And this can be done only by making a bank deposit more attractive (Bhatt, 1970). The ability of a bank's management and staff to attract checking and savings accounts from business and individuals is an important measure of the bank's acceptance by the public (Mahendra, 2005). Banks' management major concern is the variability of deposits for several reasons. George (1972) mentioned the reasons why the variability of banks' deposits is important as follows:

1. Deposit variability is frequently included as an important determinant of portfolio strategy. The more volatile a bank's deposits are the more liquid its mix of assets will be.
2. To the extent deposit variability affects bank holdings of cash and excess reserves, variability affects the distribution of total member bank reserves within the banking system and thereby the path and speed of monetary policy actions.
3. To the extent deposit variability affects the mix of banks assets; it affects the availability of funds for loans and consequently the loan rate.
4. To the extent deposit variability affects both the mix of earnings assets and the frequency of engaging in costly reserve adjustments, variability affects the profitability of individual banks.
5. Deposit variability is an important factor influencing bank use of the Central Bank discount window and thereby affects discount administration.

### **2.1.1 Concept of Interest Rate**

According to Keynes, interest rate is the reward for not hoarding but for parting with liquidity for a specific period of time. Keynes' definition of interest rate focuses more on the lending rate. Adebisi (2002) defines interest rate as the return or yield on equity or opportunity cost of deferring current consumption into the future. Some examples of interest rate include the saving rate, lending rate, and the discount rate. Lerner, (2003), defines interest as the price which equates the supply of 'Credit' or savings plus the net increase in the amount of money in the period, to the demand for credit or investment plus net 'hoarding' in the period. This definition implies that an interest rate is the price of credit which like other price is determined by the forces of demand and supply; in this case, the demand and supply of loanable funds. Ibimodo

(2005) defined interest rates, as the rental payment for the use of credit by borrowers and return for parting with liquidity by lenders. Like other prices interest rates perform a rationing function by allocating limited supply of credit among the many competing demands. Bernhardsen (2008) defined the interest rate as the real interest rate, at which inflation is stable and the production gap equals zero. That interest rate very often appears in monetary policy deliberations. However, Fisher (1936) states that interest rates are charged for a number of reasons, but one is to ensure that the creditor lowers his or her exposure to inflation. Inflation causes a nominal amount of money in the present to have less purchasing power in the future. Expected inflation rates are an integral part of determining whether or not an interest rate is high enough for the creditor. The real interest rate represents a fundamental valuation of temporary provision of capital (money) corresponding to a price level constant in time. It is also obvious from the above relation that if inflationary expectations change, nominal interest rates have to change aliquot at a constant real interest rate (Cottrell; 2005).

The real interest rate concept is irreplaceable in the research into the mutual relations of inflation, because assuming that the creditors are rational, inflation and nominal interest rates influence each other. For similar reasons, the real interest rate is used in broader economic analyses. Expected inflation is an unobservable quantity. In an expose analysis, it can be replaced by the actual rate of inflation in the following period, which is equivalent to assuming rational expectations (Bencik; 2009). Theoretically less satisfactory, but easier to apply, is the assumption of adaptive expectations; this replaces expected inflation in the future by actual inflation in the present. Inflation is very important, because when there is increased inflation over a long period of time, economic agents recognize the actual value of money, stop suffering from money illusion and accept increased nominal rates. Therefore, investment as the main link between the interest rates and the real economy is considered a function of the real interest rates, as standard (Bencik; 2009). On the other hand, Economic growth is the process by which national income or output is increased. An economy is said to be growing if there is a sustained increase in the actual output of goods and services per head. The rate of economic growth therefore measures the percentage increase in real national output, during a given period of time, usually a year, over the preceding year's level Anyanwoncha (1993). Jhingan

(2003) defines economic growth as a process whereby the real per capital income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. Economic growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services. A nation's economic growth can be measured in terms of its national income and the real per capital income. Economic growth is a very important goal of macro- economic policy because of the role it plays in economic development.

### **2.1.2 Deposit Mobilization**

Financial resource attraction is extremely important in the activities of a bank because success in this area can be a factor for success in other areas. Habibipour (2008), "Factors affecting Banking Resource Mobilization" pointed out those internal factors are more influential than average bank in mobilizing resources. He carried a study to identify factors impact banking resource mobilization. Detailed customer information is basic in business dealings. A customer can be current and saving account holder, borrowers, guarantors and etc. mobilization of resource from customer is vital to the development of organization and there are also different factors affecting mobilization resource from customer's deposit. According to Khezra (2006), "Factors affecting mobilization of financial resources" stated that information technology and communications skills of the staff working in banks and diversification of bank service quality, customer satisfaction, acceptance of indoor environment and locations of branches in modern banking are important tools which are used efficiently to absorb funds. Commercial Bank deposits are major liabilities for commercial banks. Kelvin (2001) deposits of commercial banks account for about 75% of commercial bank liabilities. Due to the fact that commercial banks are using this liability to lend it and gain return on it their deposits are using them do their business. Commercial banks accept deposit from the customer and provide loan to customer, through in this way Commercial banks mobilize the resource. Therefore, banks will be better if they are mobilizing more customer deposits in different deposit type. Customer income in the bank should be attractive enough for the banks so as to mobilize resources. So the savers would be inclined to keep a part of their saving in the form of deposits (Bhatt, 1970). Individual investors and

government are mainly depending on the deposits of banks to fund their investments and/or development projects. Generally, the banking system can be viable only if it can mobilize deposits at the required rate. And this can be done only by making a bank deposit more attractive. The ability of a bank's management and staff to attract checking and savings accounts from business and individuals is an important measure of the bank's acceptance by the customer.

#### **2.1.2.1 Factors Affecting Deposits Mobilization of Commercial Banks**

An important indicator of the success and efficiency of any resource mobilization agency, which is also a banking institution is, the extent to which it is able to mobilize the resource of the community in the form of customer deposit. But resource mobilization is very difficult task in this competent world. The following factors affect resource mobilization through customer deposit in commercial banks.

1. **Number of Customer:** The twin objectives of commercial banks, i.e. acquiring deposits and advancing credit cannot be attained without good banking habits of the people (Mahindra, 2005). Moreover Mahindra (2005) states that, the number of deposit accounts is more important because it ensures that the probability of account holders withdrawing cash at a time decreases as the number of deposit account increase, thereby creating advantage for banks in terms of increasing the size of the loan able fund. So the higher number of deposit accounts the greater is the advantage to banks. The number of customer deposit accounts depends on the number of deposit account holders. Therefore to mobilize resource through customer deposit, the higher number of customer deposit accounts have greater advantage to banks.
2. **Saving interest rate (Deposit rate):** One of the most effective factors for deciding to deposit in banking system is the interest rate (Mohammad & Mahdi, 2010). Moreover, this article shows the impact of interest rate on the performance of the banking system to achieve the goals that are expected from the banking system. Herald & Heiko (2009) also mentioned interest as one of the determining factor for commercial banks deposits. Philip (1968), also states that the offering of attractive interest rate on bank deposits may be considered to have had a beneficial effect. Moreover, Mustafa & Sayera

(2009) said that low deposit rates are discouraging saving mobilization. Bhatt (1970) said that the banking system is unlikely to be in a position to meet the demand for bank credit unless concerted policy is pursued to raise the rate of saving generally and the rate of saving in the form of deposits in particular. Interest rate in the banking system is held as investment cost from the investor's point of view and opportunity cost from the depositor's point of view (Mohammad & Mahdi, 2010). Thus, capital market forces balance interest rates. In other words, the just and correct interest rate should be determined through market mechanism, that is, interest rate is balanced in supply and demand conditions in proportion with the inflation rate. Eustacius & David (1995) states that deposits are more interest rate sensitive and banks may choose to increase investments in interest rate sensitive assets and to decrease investments in loans. That is commercial bank deposits are interest rate sensitive, therefore as the interest rate changes the deposit of the commercial banks will change. It is known that depositors bring money to the bank which the bank in turn lends it to borrowers. The gross earnings of the bank are determined by the volume and composition of loan able funds and the rates at which they are loaned. After losses and expenses of operation are deducted, the net earnings provide a margin out of which interest on deposits can be paid. Because of the competition for these funds among bankers who desire to loan them at a profit, a bank must pay interest or lose deposits to a competitor. The payment of interest on deposits is explained in this wise, like any other interest rate. As to Erna & Ekki(2004), Economists, mainly conventional ones, believe that depositors are attracted to deposit their money in banks because of the opportunity cost of holding cash in hand is high when the interest rate is also high (Romer, 2001; Athukorala & Sen., 2004). This can easily be explained by the utility maximization (cost minimization) premise, as a depositor will choose an action that will maximize their welfare or satisfaction. As to Richard (1971), regulation of the commercial banking industry affects the returns which commercial banks realize on their deposits and capital. That is although deposits are the source for profit of banks it is influenced by regulation of the country. Accordingly, the higher profit rate on demand deposits is to a large extent the result of the

prohibition against the payment of interest on these deposits. Therefore, depositors are motivated by returns. Using an Adaptive Expectation Model (AEM), it is founded that depositors are indeed motivated by returns in Malaysia (Erna & Ekki, 2004). On the other hand, Erna & Ekki (2004), states that Ghafur's (2003) shows that the rate of interest does not have influence on the volume of the deposits. However, Rose (2001), said that banks increase their deposits by offering higher deposit rate.

3. **Number of Bank Branches:** Heaster & Zoellner (1966), as quoted by Devinaga Rasiah (2010), considered number of branches as one of the explanatory variables in their resource mobilization through customer deposit study. They found that the number of branches had a significant effect on Commercial Bank of Nigeria deposit and also it can be captured by other variables such as the amount of deposit received or the amount of loan provided. Emery (1971), again as quoted by Devinaga Rasiah (2010), studied the relationship between the status of the branch categories namely unit branch, limited branch and state –wide branch. Using analysis of variance, Emery (1971) found that there was a significant difference in terms of returns among these three categories of branches. There is a relationship between Commercial Bank Ethiopia deposits and Commercial Bank Ethiopia branch expansion. Not only are deposits influenced by bank branches, but the expansion of bank branches is also influenced by the level of deposits in any area (Baqui *et al.*, 1987). It is expected that banks make decisions on expanding their facilities by considering factors such as level of competition, deposit potential, regional income and existence of road and vehicles. As deposit potential is one thing that banks consider in expanding its branches, the deposit can also be a reason for branch expansion strategy that the banking sector uses. According to Erna & Ekki (2004), there is a long run relationship between commercial bank branch and commercial banks deposits.
4. **Loans and Advances (LOAN):** This is total loans divided by total asset, provides a measure of income source. Loans are the largest segment of interest bearing assets. Other things being constant, the more the deposits that are transformed into loans, the higher the level of profit will be, therefore, it is expected to have a positive relationship with bank resource mobilization

performance. Loan is the major resource of Commercial Bank of Nigeria from which they generate income. The quality of loan portfolio determines the resource mobilization of the bank.

5. **Competitive Rivalry:** Now a time Competition in the banking industry operates is fierce; the competitive advantage strategy would be that the bank would be able to compete on deposit mobilization. Differentiation would be viable strategy in this case as there is like hood that the loyal customer would stay with bank. It would also be hard for competitor to cope with the specialist. When bank inaugurated will strive to be the best and to deliver better and quality service through well trained and qualified workforce and win the competition through delivering better and quality service by well trained and qualified workforce and by using differentiation strategy. Banks should win this competition by providing excellent service for its customers to mobilize more resource and use their good will to attract its customers and for those that do not have good will it is recommended that Banks should build goodwill to be acceptable for the society and should win the public confidence.

### **2.1.3 Commercial Bank Lending**

Commercial Bank lending are major liabilities for commercial banks. Kelvin (2001) stated that deposits of commercial banks account for about 75% of commercial bank liabilities. Due to the fact that commercial banks are using this liability to lend and gain return on it, deposits are used for business. Therefore, banks will be better off if they mobilize more deposits. However, Desinga (1975) pointed out that deposit mobilization is a very difficult task. Shaw (1995) indicates that the cost of intermediation for mobilizing deposits is also very important part of overall intermediation cost of the banking system. Despite all these, deposits play an important role in the banking system. Deposits provide limits to the working capital of the bank concerned; the higher the deposits, the higher will be the funds at the disposal of a bank to lend and earn profits (Desinga, 1975). Therefore to maximize its profit the bank should increase its deposit.

Mahendra (2005) mentioned also that deposits as a foundations upon which banks thrive and grow are unique items on a bank's balance sheet that distinguish them from other type of business organizations. Commercial banking is a service industry with a high degree of built-in profit potential (Meenakshi, 1975). The number one expense item for a bank is interest paid. Commercial banks mainly depend on the funds deposited with them by the public to lend it out to others in order to earn interest income (Davinaga, 2010). Hamid (2011) asserts that if banks lose their deposit base they rely on non-deposit based funding which is expensive.

Deposits are of three kinds (Davinaga, 2010), namely:

1. Current or demand deposits
2. Fixed or Time deposits / Term deposits.
3. Savings deposits

Hence, the competition for deposits is really a competition for profits. Commercial banks compete for deposits in order to become profitable and thus to be able to supply more funds to the public. However such financial growth is profitable only if the commercial bank does not incur additional expenses to obtain and retain cash (Davinaga, 2010). Commercial banks earn a return on their deposits and capital by investing deposit funds and capital funds in assets (Richard, 1971). That is for commercial banks to attain profit deposits are one of the most important sources of capital. Moreover, according to Richard (1971) capital structure in commercial banks are made up of shareholders' funds, borrowing and deposits. Therefore, deposits are one of the sources of capital for commercial banks.

#### **2.1.4 Theoretical Framework**

This theory according to Vanish (2000) cannot be ascribed to any one single writer belonging to the classical school. Following Adam Smith, the classical writers being interested in those fundamental forces which determined the long-term interest rate, disregarded those factors of temporary and secondary nature which characterized the short-run disequilibrium situations. However it is widely accepted that the theory was propounded by Marshall (1920) and Pigou (1932) and this theory is known as the demand and supply theory of saving. The theory states that the rate of interest is determined by the supply and demand of capital. The supply of capital is governed by

time preference and the demand for capital is determined by the expected productivity of capital. The time and preference are dependent on savings. According to Vanish (2000) the demand for capital consists of the demand for productive and consumptive purpose. Capital is demanded by the investors because it is productive. But the productivity of capital is subject to the law of variable proportions (additional units of capital are not productive as their earlier units).

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

#### **2.1.5 Theory of Interest, and the Role of Interest Rates in the Economy**

The interest rate determination in the economy was intensively studied by many economists. Two of the most influential theories are Irving Fisher's classical approach, extended to loanable funds theory, and liquidity preference theory, developed by John M. Keynes. Interest rate is determined as the price paid by borrower (debtor) to a lender (creditor) for the use of resources during some interval (Fabozzi *et al.*,; 1998). There is no single measure of interest rate in the economy and yield to maturity on an asset is accepted by most economists as a measure of interest rate (Mishkin, 2001). According to Fisher, individuals may either consume or save their incomes. Individuals save when they consider future consumption as preferable to current consumption, they consume less now to be able to consume more later. The factors that influence saving decisions differ between individuals. First affecting factor is income. With higher income individual may save more, though the decision to save is determined not only by the level of income, but also by expectations about future income, marginal propensities to consume and save - preferences to interchange consumption and saving between time periods.

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

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

Fisher suggests that in the long-run real interest rate is constant and expectations about inflation affect only nominal interest rate. Fisher's theory is very general and does not take into account many factors influencing the level of interest rates. The Loanable Funds Theory extends Fisher's approach and incorporates into the analysis government actions, banks, bonds and cash investments. The results are similar to classical approach interaction of total demand for funds, negatively related to interest rate, and total supply of funds, positively related to interest rate, determines the equilibrium interest rate and amount of savings or investments. The Liquidity

Preference Model, introduced by John Maynard Keynes, is an alternative approach to the determination of interest rate in the economy. The model analyses the behavior of interest rates as a reaction to changes in money supply and money demand, rather than changes in supply and demand for savings. The model assumes only two assets: money and bonds. The logic of the model is following: individuals hold money for current transactions and hold bonds that earn interest. Interest rate in this case is an opportunity cost of holding money, since individual may convert money into bonds and earn more. If the interest rate for bonds is low, opportunity costs are not high and individual more freely hold cash balances. If the rate is high, opportunity costs increase and people are less willing to hold money instead of profitable bonds. Thus, there is a negative relationship between money demand and interest rate in this theory. Keynes assumes that money supply is not affected by the level of interest rate and government and central bank control money supply. The change in the equilibrium interest rate may happen due to either supply or demand side changes. Main factors that affect the demand for money in the Liquidity Preference Theory are level of income and price level in the economy. Increase in income, increases the demand for money due to higher liquidity of money. The same effect has an increase in price level. People want to hold real money balances to be able to buy the same goods as before inflation, and thus increase their demand for money holding.

Operations of central bank and commercial banks affect money supply. Sachs and Larrain (1999), Mishkin (2001) state that Central bank controls monetary base (MB), which is currency in circulation and reserves, through several tools, such as open market operations - purchase and sale of bonds, discount lending to banking system, reserve requirements on deposits in the banking system and foreign currency market operations. Discount rate is especially important tool of influence on interest rates in the economy, since it not only influences the price of credit resources for the banks, but also contains information on level of interest rates in the economy, so may be followed by commercial rates. The extent to which increase in monetary base may increase money supply is affected by the level of required reservation, currency/deposit and reserves/deposit ratios, or money multiplier. Sachs & Larrain (1999) determine the money multiplier as follows:  $D = C_d + 1 / C_d + R_d$

Where:  $C_d$  and  $R_d$  are currency/deposit and reserve/deposit ratio respectively.

Money supply increase is thus money multiplier time's increase in monetary base. The result of money supply increase on interest rate is ambiguous, since, according to Mishkin (2001), this contains different effects on the interest rate; namely liquidity effect, income effect, price level effect and expected inflation effect.

Liquidity effect theoretically reduces interest rate by shifting money supply curve to the right, and new equilibrium is with lower interest and larger money supply. This effect, though, may be followed by other effects, which would reverse the fall in interest. Income effect through influence of the expansion on aggregate demand will tend to increase demand for money and the effect is clear: it will increase interest rate. Price level effect of the increase in money supply also increases demand for money and, consequently, interest rate. This effect works in similar fashion as income effect. If economy produces at full employment, increase in money supply most likely will lead to increase in inflation, and this, recalling Fisher's Law, will increase nominal interest rate. In reality, it is impossible to predict which effect is prevalent after money supply increase. These effects will differ in different economies or even in one economy during different stages.

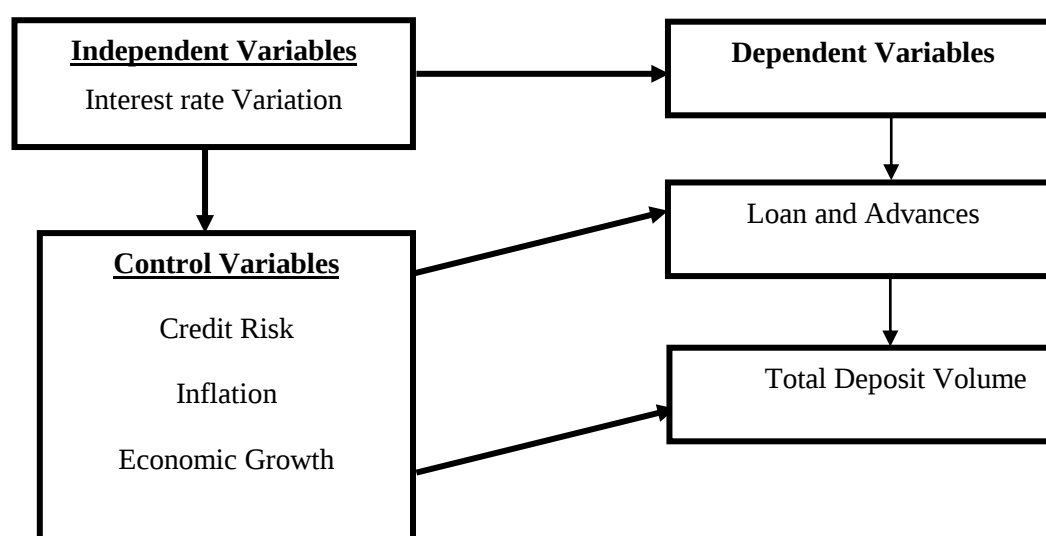
#### **2.1.6 Interest Rate and Factors Affecting Liquidity-Money Model**

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

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

### 2.1.7 Theoretical Framework

This study is developed along credit/deposit mobilization by banks. The dependent variables are Total Deposit volume and Loan and Advances while the independent variables are interest rate,(Nominal and real Deposit rate) as shown in fig 8 below



### 2.1.8 Types of Deposit Accounts

#### Cheque / Current /Demand Deposit Account

Singh (2010) defines a cheque, current or demand account as a transactional deposit account held at a bank that allows for withdrawals and deposits. Elser *et al.*, (2005) elaborate that money held in a cheque, current or demand account is very liquid, and can be withdrawn using cheques, automated cash machines and electronic debits, among other methods. A cheque account differs from other bank accounts in that it often allows for numerous withdrawals and unlimited deposits, whereas savings accounts sometimes limit both. Current accounts can include business accounts,

student accounts and joint accounts along with many other types of accounts which offer similar features.

### **Fixed or Time deposits / Term deposits**

In a typical Fixed or Time deposits / Term deposits, the bank accepts your deposit for a fixed term-usually a pre-set period from six months to five years and pays you interest until maturity. At the end of the term you can cash in your deposit for the principal plus the interest you've earned, or roll your account balance over to a new Fixed or Time deposits / Term deposits. But you must inform the bank your roll over position before the Fixed or Time deposits / Term deposits matures. Otherwise the bank may automatically roll over your deposit to a new Fixed or Time deposits / Term deposits with the same term at the current interest rate. And you might earn a better interest rate with a Fixed or Time deposits / Term deposits that has a different term, or one offered by a different bank.

### **Savings Account**

According to Yang (2009), bank savings accounts have traditionally been one of the simplest and most convenient ways to save. These accounts typically have the lowest minimum deposit requirements and the fewest withdrawal restrictions. But they often pay the lowest interest rates of any of the savings alternatives. Singh (2010) proposes substantial interest rates on deposits for banks to lure more deposits in a competitive environment. However this strategy of high deposit rates according to Kraft (2000) may fail to work in newly liberalised economies with weak regulations. In his Croatian studies he found that most risk loving banks used high deposit rates to mobilise deposits, by so doing subjecting them to increased bank asset risk. As the bad loans went into default a banking crisis was ignited.

### **2.1.9 The Factors Affecting Commercial Banks Deposits**

An important indicator of the success and efficiency of any credit agency, which is also a banking institution is, the extent to which it is able to mobilize the savings of the community in the form of deposit. But deposit mobilization is very difficult task. It depends up on various factors exogenous as well as endogenous, to the banking system (Desinga, 1975). Exogenous factors are the general economic environment of the region, the volume of business transaction of the region, the confidence of the

people on the banking system, the banking habit of the people and the saving potential of the region. Even when exogenous factors are more conducive for deposit mobilization, banks may fail because of unfavorable endogenous factors such as location, type of building and window dressing (furniture, cheque books, vouchers, pay slips etc), which assure the customers about the physical fitness of a bank (Desinga, 1975).

As Desinga (1975) research classified the variables which are claimed to have effect on the commercial banks deposits into two, namely exogenous and endogenous factors. Exogenous has further divided into country specific factors and bank specific factors for clarification purpose. Endogenous factors can be controlled by the banking system; however the exogenous factors cannot be controlled by the banking system. The bank specific factors are factors that are specific to the banking system and the country specific factors are factors that are beyond the banking system.

### **Exogenous Factors**

These are factors that are from country and banks that can affect the growth of commercial banks deposits. There are discussed as follows:

#### **Country Specific Factors**

The country's economic, social and political factors can affect the commercial banks. According to Herald & Heiko (2009), country specific risks such as political, economic and financial risks may affect the propensity for depositors to place funds in the banking system. Any single bank operates under the rule and regulation of the country where it belongs, also different problems and shocks that has happened in the country has its own concern in the banks operation. Generally, a bank success in their operation depends on the environment where the business is undertaken. The researcher has identified ten country specific factors that has effect on the

Commercial banks deposits from the literature. They are saving interest rate or deposit rate, inflation, real interest rate, number of commercial banks available in the country, population growth, per capita income of the society, economic growth, consumer price index, gross domestic product (GDP) and shocks.

## **1. Saving interest rate (Deposit rate)**

One of the most effective factors for deciding to deposit in banking system is the interest rate (Mohammad & Mahdi, 2010). Moreover, this article shows the impact of interest rate on the performance of the banking system to achieve the goals that are expected from the banking system. Herald & Heiko (2009), also mentioned interest as one of the determining factor for commercial banks deposits. Philip (1968), also states that the offering of attractive interest rate on bank deposits may be considered to have had a beneficial effect.

Moreover, Mustafa & Sayera (2009) said that low deposit rates are discouraging saving mobilization. Bhatt (1970) said that the banking system is unlikely to be in a position to meet the demand for bank credit unless concerted policy is pursued to raise the rate of saving generally and the rate of saving in the form of deposits in particular. Interest rate in the banking system is held as investment cost from the investor's point of view and opportunity cost from the depositor's point of view (Mohammad & Mahdi, 2010). Thus, capital market forces balance interest rates. In other words, the just and correct interest rate should be determined through market mechanism, that is, interest rate is balanced in supply and demand conditions in proportion with the inflation rate. Eustacius & David (1995) states that deposits are more interest rate sensitive and banks may choose to increase investments in interest rate sensitive assets and to decrease investments in loans. That is commercial bank deposits are interest rate sensitive, therefore as the interest rate changes the deposit of the commercial banks will change.

## **2. Inflation**

As to Herald & Heiko (2009), inflation is one of the factors that determine commercial banks deposits. In Latin America the effect of inflation on savings and time deposit to GDP was significantly negative (Mohammad & Mahdi, 2010). The classical belief is that, because bank assets and liabilities are expressed in monetary terms and because these assets will normally grow in line with growth in money supply, banks are relatively immune from the effects of inflation (Devinaga, 2010).

In brief, monetary policy works by controlling the cost and availability of credit. During inflation, the Central bank can raise the cost of borrowing and reduce the credit creating capacity of commercial banks. According to Devinga (2010), this will make borrowing more costly than before and thereby the demand for funds will be reduced. Similarly with a reduction in their credit creating capacity, the banks will be more cautious in their lending policies. Since the banks demand for fund decreases obviously the deposits will decrease. Banking system was affected by inflation in terms of deposit absorption and facilities grant (Mohammad & Mahdi, 2010).

As to Mohammad & Mahdi (2010), in developed countries negative correlation between inflation and absorbed deposits and granted facilities has been documented. However, in developing countries the opposite is true. Inflation is seen as an economic problem in developed countries in the second half of 20th century. Inflation with effect in economic growth, employment, income distribution and wealth as well as social and political conditions of a country can influence its entire dignity (Mohammad & Mahdi, 2010).

Moreover, Mohammad & Mahdi (2010) observed that banking system as an important effective factor in economic performance has also been under the influence of inflation. As to Mohammad & Mahdi (2010), as far as the effect of inflation on financial sector demonstrates that inflation affects the capacity of financial sector for optimally allocate resources. That is as inflation rate increases, true yield rate of money and assets decreases, therefore deposits are no more longer attractive. Also the increase of inflation rate has a negative effect on the performance of financial sector through the market credits and in turn, on the performances of banks and capital markets and finally on the long term economic growth (Mohammad & Mahdi, 2010).

With respect to the effect of inflation on savings, it can be mentioned that in general, all individuals who save a part of their incomes in banks are directly damaged by the inflation and their assets decrease in proportion with money value decrease (Mohammad & Mahdi, 2010). In that case as Mohammad & Mahdi (2010) describes people try to change their cashes and savings to more reliable and stable forms such as land, jewelry, antiques, art collections, foreign currencies that causes to definite decrease in commercial bank's total deposit. High inflation rates reduce the real value

of deposits (Baqui *et al.*, 1987). According to Baqui *et al.*, (1987), inflation technically did not decrease deposit; however it decreases the value of deposits.

### **3. Real Interest Rate**

Real interest rate is nominal interest rate minus inflation rate. Mohammad & Mahdi (2010) said that in negative real interest rate condition, people withdraw their resources from banking system. According to Mohammad & Mahdi (2010), some research supposed that decrease in real interest rate could decrease true demands for money (in its extensive definition including savings and time deposits). Therefore it states that the interest rate and deposit of the banks have positive relationship.

According to Voon-Choong *et al.*, (2010), while interest rates risk is a major concern for banks due to the nominal nature of their assets and the asset-liability maturity mismatch (Hasan & Sarkar, 2002), some researchers emphasized that higher interest rates had positive impact on banks (Hanweck and Ryu, 2004; Hyde, 2007).

### **4. Population growth of the country**

The twin objectives of commercial banks, i.e. acquiring deposits and advancing credit cannot be attained without good banking habits of the people (Mahendra, 2005). Moreover Mahendra (2005) states that, the number of deposit accounts is more important because it ensures that the probability of account holders withdrawing cash at a time decreases as the number of deposit account increase, thereby creating advantage for banks in terms of increasing the size of the loanable fund. So the higher number of deposit accounts the greater is the advantage to banks. The number of deposit accounts depends on the number of deposit account holders.

### **5. Per capita income of the society**

According to Jim (2008), per capita is the level of GDP divided by the population of a country or region. Changes in real GDP per capita over time are often interpreted as a measure of changes in the average standard of living of a country. If households and firms desire to hold more money, deposits will increase (Evan, 2006). The relationship between income and deposits is positive. If the income of the society increases, the commercial bank's deposits will increase too. Income is expected to have a positive effect on deposits (Baqui *et al.*, 1987). Therefore as society's per

capita income increases the same will happen for commercial banks deposits. Mahendra (2005) also indicates that income of the society matters for banks' deposit growth.

## **6. Economic growth**

Economic performance is generally being measured through Gross Domestic Product (GDP), a variable that has also become the de facto universal meter for 'standards of living' (Yanne *et al.*, 2007). It is universally applied according to common standards, and has some undeniable benefits mainly due to its simplicity (Yanne *et al.*, 2007). According to Herald & Heiko (2009), growth is one of the determining factors for commercial banks deposits. GDP is calculated by adding up the value-added at each stage of production (deducting the cost of produced inputs and materials purchased from an industry's suppliers)(Jim, 2008). Erna & Ekki (2004) find four variables, GDP, number of Islamic bank's branch offices, profit sharing rate, and interest rate that are thought to have influence on the volume of deposits. So, GDP can influence the growth of commercial banks deposits.

## **7. Consumer price index**

According to Herald & Heiko (2009), price can also determine commercial bank deposit and it can be indicated by consumer price index. In literature there is an evidence for the influence of consumer price index on commercial banks deposit, however this area was rarely studied.

## **8. Shocks**

Aggregate shocks affect deposits and interest rates during crises, regardless of bank fundamentals and investors' responsiveness to bank risk taking increases in the aftermath crises (Maria & Sergio, 2001). Therefore, given all other variables the shocks happened in the economy can affect the banks' deposits.

## **Bank Specific Factors**

### **1. Liquidity of the banks**

The concept of liquidity in finance principally lies in two areas (Ismal & Rifki, 2010):

- a) Liquidity of financial instruments in the financial market
- b) The liquidity related to solvency.

The former related to liquid financial markets and financial instruments, smooth transactions and no barriers. As to Ismal & Rifki, (2010), the latter discusses the obligation of banks to make payments to third parties (Fiedler, 2000). Some examples of this includes: setting up liquidity management policies, reserve liquidity, balancing assets and liabilities and preparing liquid financial instruments (Ismal & Rifki, 2010). An important measure of liquidity is loan to deposit ratio. The loans to deposit ratio is inversely related to liquidity and consequently the higher the loans to deposit ratio the lower the liquidity and vice versa (Devinga, 2010). Key liquidity indicators such as central bank credit to financial institutions, deposits as a share of monetary aggregates, loans to deposits ratios, are important for open market operations and liquidity management (Sheku, 2005). According to Voon-Choong *et al.*, (2010), the basic need for liquidity, asset, liability, capital adequacy, credit and interest rates risks management are now more challenging than before (Mishkin, 2007). The banks' liquidity management involves acquiring sufficient liquid asset to meet the bank's obligation to depositors (Voon-Choong *et al.*, 2010). According to the findings of Dorothee & Andrea (2009) it is more profitable for savings banks to hold liquid assets than to invest in illiquid assets, such as medium-term interbank lending to other credit institutions.

According to the theories of financial intermediation, the two most crucial reasons for the existence of financial institutions, especially banks, are their provision of liquidity and financial services (Ismal & Rifki, 2010). According to Ismal & Rifki, (2010), Regarding the provision of liquidity, banks accept funds from depositors and extend such funds to the real sector while providing liquidity for any withdrawal of deposits, however the banks' role in transforming short term deposits into long term loans makes them inherently vulnerable to liquidity risk (Bank for International Settlements (BIS), 2008). Individual, business and government will be willing to deposits their money in banks if they are certain that they are safe to withdraw the money whenever they want, this is the question of liquidity of banks. The more liquid banks can attract the deposits. Liquidity risk occurs in two cases,

- i. It arises symmetrically to the borrowers in their relationship with the banks, for example when banks decide to terminate the loans but the borrowers cannot afford it.

- ii. It arises in the context of the banks' relationships with their depositors, for example, when depositors decide to redeem their deposits but the bank cannot afford it.
- iii. Liquidity risk is the possibility that depositors may withdraw some or all of their funds, and default risk is the possibility that borrowers may not repay all their debts when due (Shubik & Sobel, 1992).

Banks that are perceived as less risky maintain a high level of liquidity or have a lower concentration of assets, particularly to the government, may be expected to be able to attract more deposits than their peers (Herald & Heiko, 2009). A higher degree of financial intermediation (proxied by the loan-to-assets ratios) may signal a bank's success in generating income as well as a need for it to attract more deposits to support its increased lending activities (Herald & Heiko, 2009). A higher liquidity buffers (measured by the ratio of liquid assets to deposits) tend factor favouring deposit demand (Herald & Heiko, 2009). Liquid banks as well as banks with a higher loan exposure are associated with higher deposit growth. Herald and

Heiko (2009), states that the liquidity situation of the bank also plays a significant role in determining banks deposit growth. According to Nada (2010), banks perceived as risky should have had more difficulty attracting deposits and making loans than banks perceived as safe. When banks fail to pay for its depositors then it faces liquidity risk that makes other depositors not to deposit in that particular bank.

## **2. Profitability of the bank**

Erna & Ekki (2004) find the long run relationship between commercial banks deposits and the profitability of the banks. Higher bank profits would tend to signal increased bank soundness, which could make it easier for these banks to attract deposits (Herald & Heiko, 2009). However, the effect of bank profitability and bank size are found to be insignificant once controlling for the other variables. So, the effect of profitability and banks size on commercial bank deposit is lower as compared with other variables.

## **3. Security of the bank**

Security of banks matters in mobilizing deposit. Riskier banks would be able to attract deposits only paying higher Interest rates. The security of banks has its own impact on

its attractiveness for depositors. For example in the existence of deposit insurance the depositors no longer are concerned about the soundness of their banks because their deposits are insured in the event of bank failure. So the bank should secure its system so as to mobilize more deposit than before and to attract new depositors and maintain the exiting depositors.

#### **4. Branches**

There is a relationship between commercial banks deposits and commercial bank's branch expansion. Not only are deposits influenced by bank branches, but the expansion of bank branches is also influenced by the level of deposits in any area (Baqui *et al.*, 1987). It is expected that banks make decisions on expanding their facilities by considering factors such as level of competition, deposit potential, regional income and existence of road and vehicles. As deposit potential is one thing that banks consider in expanding its branches, the deposit can also be a reason for branch expansion strategy that the banking sector uses.

According to Erna & Ekki (2004), there is a long run relationship between commercial bank branch and commercial banks deposits. It is often argued that branching stabilizes banking system by facilitating diversification of bank portfolios (Carlson & Mitcheer, 2006). Mark & Kris (2006) found from theoretical literature on banking regulation that branch banking leads to more stable banking systems by enabling banks to better diversify their assets and widen their deposit base (Gart, 1994, Hubbard, 1994). An argument commonly articulated in the literature is that branch banking stabilizes banking systems by reducing their vulnerability to local economic shocks; branching enables banks to diversify their loans and deposits over a wider geographical area or customer base (Mark & Kris, 2006). Restrictions on branching have been linked to the instability of banking systems.

Daniel (2005), suggest that the lack of widespread branching bank networks hindered the development of large-scale industrial firms. It is stated that unit banks become increasingly incapable of receiving deposits from a widespread geographic area. The single office bank is also not able to monitor geographically diffuse debtors as easily as could be done with multiple offices. Moreover, it can be concludes that under branch banking the mobility of capital is almost perfect.

## **5. Bank size**

Among the factors prominently identified as affecting deposit variability one is bank size. Evidence indicates that the number and diversity of the ownership of individual deposit accounts as well as the distribution of deposits by type vary with bank size (George, 1972). Herald and Heiko (2009) founds that although insignificant once controlled by other variables bank size have an effect on deposits. A smaller bank has to generate less deposit in absolute terms to achieve the same deposit growth than large banks, thus possibly favoring smaller banks in achieving higher deposit growth. But a larger bank with economies of scale as well as larger branch network might be able to better attract deposits (Herald & Heiko, 2009).

## **6. Reserves**

Goode & Thom (1959) said that reserves that are fixed legally can influence the deposits that banks can hold. According to them reserve requirements determine the maximum amount of loans and investments that each commercial banks and the banking system as a whole may maintain in relation to deposits. Thus, if the reserve requirement is 20 percent of deposits, loans and investment (of the bank's own choosing) may not exceed 80 percent of deposits. Therefore, reserve requirements limit the total expansion of bank deposits that can occur on the basis of any primary increase in deposits. Reserve requirements also have the effect of limiting the reduction in bank credit and deposits that is forced up on the banking system by a primary decrease in deposits. The commercial banks can obtain currency to pay out to customers only by drawing down their reserve deposits at the central bank or by using till money (Goode & Thom, 1959). Till money, according to Goode and Thom (1959) is the currency that banks keep on hand to satisfy day to day needs. They pointed out that bank deposits are a large part of the money supply in virtually all countries.

## **7. Transaction cost**

Important indicator of management's effectiveness in any bank is whether or not deposited funds have been raised at the lowest possible cost and whether enough deposits are available to fund those loans the bank wishes to make (Mahendra, 2005). This last point highlights the two key issues that every bank must deal with in managing its deposits (Mahendra, 2005):

- a. Where can the bank raise funds at the lowest possible cost?
- b. How can management ensure that every bank always has enough deposits to support the volume of loans and other financial services demanded by the public?

### **Endogenous Factors**

In the literature three endogenous factors are identified that can affect the growth of commercial banks deposits. They are awareness of the society for using banks to deposit their money, convenience of Bank's office and service in the banks.

#### **1. Awareness of the society**

According to Baqui *et al.*, (1987), some analysts argue that demand for deposits is influenced by education level which in turn increases the awareness of the rural people about banking services. Since the study of Baqui *et al.*, (1987) conducted by taking rural area as its base it is obvious that it considers the awareness as a factor of deposit mobilization. It was also found that literacy as a proxy for awareness about banking, positively influence deposits.

#### **2. Convenience of Bank's office**

Road and vehicles directly influence interest bearing deposits because of the reduction in depositors' transaction costs through reduced time spent in travelling to and from banks (Baqui *et al.*, 1987). Banks can mobilize more deposit when they make themselves closer to their customers (depositors).

#### **3. Services in the Bank**

It is known that banks are service giving organizations and the service delivery can affect their business undertakings. Baqui *et al.*, (1987) stated that there is some empirical evidence demonstrating the positive influence of services rendered to depositor. Baqui further suggested two innovations to be tested to provide incentives to depositors: Additional benefit like prize bounds could be given to depositors for maintaining deposits for particular period. As recommended by Nathan (1986), one category of deposits might be specifically tied to future loans. Bank customers might be encouraged to participate in a savings program that, for example, provides machinery or housing after a predetermined amount of savings has been accumulated.

Services in the bank should be attractive enough for the depositors so as to mobilize deposits. If the banks could offer these services, the savers would be inclined to keep a part of their saving in the form of deposits (Bhatt, 1970).

The followings are services that Bhatt (1970) claims to use to mobilize deposits:-

- i. Door-to-door collection of small savings in the form of deposits.
- ii. Offering land revenue or insurance premium: If the banks offer to pay land revenue or insurance premium out of the interest earned on deposits, some persons may be inclined to put deposits of such amounts as would earn enough interest to meet their land revenue or insurance premium liability. To attract deposits these types of services are worth providing.
- iii. An investment service: Some savers have neither the inclination nor the time to select an appropriate portfolio of financial investment. Banks can select the portfolio of investments on their behalf, keep the securities in safe custody, collect Interest/dividend income and even fill income-tax forms; with such services offered, some savers would be inclined to keep their liquid funds in the form of deposits.
- iv. Some persons like farmers get their incomes say once or twice in a year, while their expenditure is spread over the whole year. If banks could collect deposits from them at the harvesting season, and assure them regular withdrawals during the year, farmers may be inclined to keep deposits with the banks. This scheme would ensure safety of their funds, prudence in their management and certainty of regular monthly means to meet their current liabilities. In addition they would earn some interest. With a sympathetic and persuasive approach, farmers could be attracted to such a scheme.
- v. While giving loans to farmers and small sector, the banks could provide them with facility of purchases from recognized dealers instead of giving those cash. In this case, the dealers could send the bills to the banks, which would debit the accounts of the loan receivers. Some banks have introduced agri-cards with such a purpose in mind. If such facilities are provided to others also, the customers would use bank money rather than currency for making payment and once they form this habit, they would be induced to keep their transaction balances in the form of deposits rather than in the form of currency.

According to Bhatt (1970) these are some of the new deposit schemes which, if introduced, could raise the rate of saving as well as the rate of growth of bank deposits. To the extent to which the rate of saving is raised, the growth rate of the economy would be higher. To the extent to which the deposit growth rate is raised, the community would have more effective control over the allocation of financial resources for plan purposes.

#### **2.1.10 Factors Affecting Bank Spreads (Difference in Lending and deposit Rate) In Developing Economies**

Valverde *et al.*, (2004) elucidate by noting that because of the costs of intermediating between savers and borrowers, only a fraction of the savings mobilized by banks can be finally channeled into investments as some of the savings will be absorbed by costs. An increase in the inefficiency of banks increases these intermediation costs, and thereby increases the fraction of savings that is 'lost' in the process of intermediation. Inefficient intermediation will ultimately result in the reduction of funds available for lending and investment and therefore will impact negatively on economic growth. These implications of banking sector inefficiency have spurred numerous debates in developing countries about the causes of low deposit rate and wide lending rate, with some suggesting that they are imposed by the macroeconomic, regulatory and institutional environment in which banks operate. With the above understanding it is imperative to analyze the factors or the possible causes of wide differences in lending rate and deposit rate. Different authors have brought forward or identified significant causes of interest rate disparity that result in wide or increasing differences. It has been suggested that interest rate differences (spread) are widened by:

#### **2.1.11 Industry Specific Factors**

The industry specific factors are those prevalent to the whole banking sector and can be analysed as affecting the whole sector and these include the regulatory requirements like minimum capital requirements and statutory reserve requirements, other factors that include bank sector development level, market size and the efficiency of the regulatory environment.

## **1. Market size**

The market- specific determinants of commercial bank lending and deposit rate differences highlighted in the literature typically include lack of adequate competition in the banking sector which leads to lending and deposit rate differences widening due to dis-economies of scale to the small size of markets (Robinson, 2002) and (Jayaraman & Sharma, 2003). They further noted that consequent market power of commercial banks leads to influential banks dictating the pace for the whole economy and not market determination of rates.

Greater market power or dominance by some few individual commercial banks was also noted by Barajas *et al.*, (2000) as one of the major causes of wide interest rate spreads. This ultimately leads to less competition on the loan market and therefore results in the leading banks dictating the pace in lending and in rate determination. Lack of competition and market power of a few large dominant banks enables them to manipulate industry specific variables including lending and deposit rates to set prevailing spreads without any macroeconomic factors contributing to the level of the spreads. These banks can also use their size and economies of scale to influence both deposit and lending rates in such a way that the two rates will end up mismatched resulting in wide spreads. The presence of competition will on the other hand influence banks to offer competitive return on deposits and ultimately lower borrowing rates as there will be so many sources of credit for customers.

## **2. Under developed banking sectors**

Banking sectors that are poorly developed according to Demirguc-Kunt & Huizinga (1998) also results in inefficient intermediation. The degree of development of the banking sector also plays a part as development leads to efficiency. If intermediation (which means the collection of surplus funds from surplus units and their transfer to deficit units) is inefficient it leads to increased costs of operation and therefore increase in interest rate spreads to cover for intermediation costs. The cost of intermediation resemble the greater but variable part of the cost incurred by operating banks and though the costs can be controlled the inability of banks to do so increases cost of operation resulting in banks charging higher interest on loans.

### **3. Reserve requirements**

According to Barajas *et al.*, (2000) relatively high reserve requirements and explicit and implicit taxation - such as profit taxes and reserve requirements, will result in the widening of interest rate spreads. This leads to more deposit or capital funds remaining idle for the purposes of disaster cushion and regulatory purposes so for banks to cover for the opportunity costs they reduce deposit rates. The existence of high reserve requirements makes it difficult for banks to lend more and gain from economies of scale and therefore results in possible loss of revenue and an increase of non-interest bearing funds further crippling the bank's profitability.

#### **1. Inefficient regulatory systems**

Inefficiency of regulatory system and wide spread corruption was identified by Demirguc-Kunt & Huizinga (1998). The existence and the extent to which corruption affects banking operations, the perpetuation of cases of fraud and inadequate control systems erode profits as these increase operating risk. To cover for the possibility of these losses happening risk premiums are included in the spreads. Inadequate controls may be a result of incompetent management, poor employee selection and induction or lack of robust information technology facilities leading to more costs in operations and poor execution of duties.

There are other factors that are industrial in nature that cause interest rate spreads to fall. Such factors include the efficiency of the legal system and adequate risk control supervision and regulation, contract enforcement on the part of employers as they have to analyze if their employees are adhering to the terms of their contract as these ensure efficiency in carrying out tasks and this also decreases levels of corruption, which are all critical elements of the basic infrastructure needed to support efficient banking.

#### **2.1.12 Macro Economic Factors**

Macroeconomic factors have been shown to explain significant variation in commercial bank interest rate differences. Brock & Franken (2003) argues that macroeconomic factors are certainly among the most influential sources for variations in credit spreads. Chirwa & Mlachila (2004) concur and assert that macroeconomic instability and the policy environment have important impacts on the pricing behavior

of commercial banks. Macroeconomic factors affect spreads in different ways as some give rise to uncertainty or increase in cost of operation and intermediation and in most cases it will not be in the capacity of the banks to control these factors.

### **1. Inflation**

The macroeconomic variables which have been empirically shown to increase interest rate spreads include high and variable inflation and real interest rates (Demirguc-Kunt & Huizinga, 1998) which leads to currency losing its value against other currencies and the erosion of buying power of the currency. Ramful (2001) indicated that high spreads are associated with low developing countries and they indicate an economy characterized with high inflation. This however is may always be the case that high spreads are as a result of high inflation as in Nigeria high spreads exist in an economy that has a high inflation rate. An increase in the real interest rate results in the nominal rates charged on loans being insignificant as the level of return they initially represented will have been eroded. Interest rate uncertainty proxied by inter-bank interest rate volatility according to Brock & Franken (2002) is part of the influence that real interest rates have on the interest rate spread. With this in mind the banking entities will significantly increase lending rates to cover for possible increase in inflation or real rates.

### **2. Gross domestic product (GDP) growth**

Changes in business cycle impact the creditworthiness of borrowers in terms of repayment capacity. Business cycle effects are measured by the growth in an economy's GDP. In order to compensate against expected default emanating from changing business cycles, banks are likely to impose higher lending rates. In case of accelerating GDP growth, banks tend to charge lower spreads while in periods of stagnant or low growth, banks' spreads are expected to increase (Saunders & Schumacher, 2000). Increased economic activity can heighten demand for loans leading to higher lending rates. However increased economic activity can make projects more profitable, reduce defaults, and increase deposits, all of which reduce the spreads.

### **3. Increase in money supply**

Broad money growth according to Crowley (2007) affects interest rate spreads. For instance, lowering interest rates spurs investments subsequently. Business firms then respond to increased sales arising from the excess money supply by ordering more raw materials and increasing production. The spread of business activity increases the demand for labor and raises the demand for capital goods. In a buoyant economy stock market prices rise and firms issue equity and debt. If the money supply continues to expand, prices begin to rise especially if output growth reaches capacity limits. As the public begins to expect inflation, lenders insist on higher interest rates to offset the expected decline in purchasing power over the life of their loans. Opposite effects occur when the supply of money falls or when its rate of growth declines. In this case, economic activity declines leading to either a disinflation (reduced inflation) or deflation (falling prices).

#### **2.1.13 Bank Specific Factors**

Studies have shown that there is a wide view amongst some stakeholders that high interest rate spreads are caused by the internal characteristics of the banks themselves, such as their tendency to maximize profits in an oligopolistic market (Demirguc-Kunt & Huizinga, 1998) and Sologoub (2006) note that the specific characteristics of commercial banks that are usually theorized to have an impact on their spreads include the size of the bank, ownership pattern, the quality of the loan portfolio, capital adequacy, overhead costs, operating expenses, and shares of liquid and fixed assets. Robinson (2002) further notes that the incidence of fraud, the ease with which bad credit risks survive due diligence, and the state of corporate governance within banks all lead to higher operating costs, asset deterioration and ultimately wider interest rate spreads.

#### **1. Liquidity**

Liquidity measures the extent to which a bank is able to meet the withdrawal of funds and meeting other financial obligations when they fall due. There is a tradeoff between liquidity and interest rate margins, and banks with a higher proportion of liquid assets are likely to generate lower spreads (Sologoub, 2006). Liquidity is measured as the ratio of liquid assets to demand deposits. Liquid assets include cash

and bank balances, deposits with banks, government securities, listed term finance certificates, listed equity investments, and net reverse repos. Risk absorption capacity refers to the cushion that banks have against unforeseen losses. The cushion against possible losses is central to the financial structure of commercial banks.

## **2. Risk**

The 2007 to 2009 global financial crisis was triggered by the financial sector's excessive risk taking, which became worse with the simultaneous erosion of banks' capacity to absorb various risks. This has warranted the increased significance of risk absorption capacity for banking operations. A bank with a higher risk absorption capacity is perceived as resistant against credit and market risks and ultimately enjoys a competitive borrowing profile both in deposit and interbank markets with a low rate of return for lenders. Therefore, a strong cushion is likely to positively impact interest rate spreads.

## **3. Non performing loans**

A non-performing asset or loan is the money lent to an individual that does not earn income and full payment of principal and interest is no longer anticipated, principal or interest is 90 days or more delinquent, or the maturity date has passed and payment in full has not been made (Boudriga *et al.*, 2009). A higher share of non-performing loans can impair bank performance in at least two ways which are the loan losses immediately reduce the interest revenue, bringing spreads under pressure and simultaneously, banks are required to make provision for classified loans, thus increasing non-interest expenses and resulting in lower profitability. This was a variable of interest to the author as so many commercial banks in Zimbabwe are struggling because of non-performing loans.

## **4. Asset quality**

The analysis of asset quality has revealed an inverse relationship between asset quality and banking margins. However, Angbazo (1997) argues that a diminution in asset quality calls for increasing loans' loss provisions. Banks are likely to charge higher spreads to compensate for the increase in loan loss reserves and consequently an increase in credit risk would result in increasing spreads. This shows that non-

performing assets play a significant role in eroding the profit margin of banks and the profitability capacity of banks as to cover for it there must be loan loss provision.

The factors above all show that such bank-specific factors impact significantly on commercial banks' net interest margins. Notwithstanding this, Brock & Franken (2002) note that the results of many other studies suggest that individual bank characteristics are often not tightly correlated with interest rate spreads. It is asserted that this may be because spreads are largely determined at the industry level, thus making individual bank characteristics more relevant to other variables, such as bank profitability.

#### **2.1.14 Lending, Deposit and Interest Rate Relationship**

The literature is replete with empirical studies on the relationship between bank lending, deposit and interest rate. Interest rates are the subject of numerous empirical analyses, both for developed and developing countries. Depending on the purposes of the research as well as on data availability and the specific characteristics of a particular banking system, the studies are carried out in various manners, ranging from simple accounting identities through to regression techniques and other more sophisticated econometric models.

Vohra & Sehgal (2012) argued that lending is one of the two principal functions of banks, not only because of their social obligation to cater to the credit needs of different sections of the community, but also because lending is the most profitable, for the interest rates realized on loans have always been well above those realized on investments. Freixas & Rochet (2008), as cited in Fouopi-Djiogap & Ngomsi (2012), noted that bank loans are one of the most important long-term financing sources in many countries.

Felicia (2011) used regression analysis to investigate the determinants of commercial banks' lending behaviour in Nigeria. The study discovered that commercial banks deposits have the greatest impacts on their lending behaviour. Khat & Bathia (1993) used non-parametric method in his study of the relationship between interest rates and other macro-economic variables, including savings and investment. In his study he grouped (64) Sixty-Four developing countries including Nigeria into three bases on the level of their real interest rate. He then computed economic rate among which

were gross savings, income and investment for countries. Applying the Mann - Whitney test, he found that the impact of real interest was not significant for the three groups.

Adofu & Audu (2010) used ordinary least square method to ascertain the assessment of the effects of interest rate deregulation in enhancing agricultural productivity in Nigeria. The study found out that interest rate play a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors. Rasheed (2010) used error correction model (ECM) to investigate interest rates determination in Nigeria. The study found out that as the Nigerian financial sector integrates more with global markets, returns on foreign assets will play a significant role in the determination of domestic interest rates.

Haron & Azmi (2006) asserted that, most business organizations, especially in developing countries are highly dependent on bank loans as a source of capital and the ability of banks in giving loans depends much on their ability to attract deposits. Each of the different types of deposits available at the commercial banks carries a different rate of interest or yield to the depositor. In general, the longer the maturity of a deposit, the greater the yield that must be offered to depositors, in part because of time value of money and the frequent upward slope of the yield curve. For example, notice of withdrawal deposits is subject to immediate withdrawal by the customer and, accordingly, interest rate offered to depositors is among the lowest of all deposits. In contrast, time deposits of a year or longer to maturity often carry higher rates. Similarly, savings or thrift deposits are designed to attract funds from customers who wish to set aside monies in anticipation of future expenditures or financial emergencies. These deposits generally pay significantly higher interest rates to customers than transaction deposits do, particularly for those deposits the customer agrees to hold with the bank for several months or years.

A number of authors have investigated the effects of real interest rate on savings mobilization. In Nigeria and other developing economies, interest rate has shown significant effect on financial savings especially time and savings deposits while the

structure of deposits was determined by differentials in deposits rates (Ndekwa, 1991).

Through further investigation using monthly data, (Ndekwa, 1991) discovered that interest rate deregulation in Nigeria have a positive impact on financial savings between 1986 and 1988 and in Ghana between 1976 and 1980. Consequently, negative real interest rates resulted in decline of financial savings in real terms. But on the contrary, the Malaysian economy witnessed a steady policy of positive inflation-adjusted interest rates which led to growth in real term savings deposits. Also in Turkey, the deregulation of interest rate in 1981 resulted in a substantial increase in time and savings deposits in real terms (Ndekwa, 1991). Apart from the above evidences, some other studies have shown negative relationship between the rate of interest and the volume of savings through financial intermediaries For instance Ogaki, Jonathan and Reinhart (1995), in a study of personal savings in developing countries argued that high real interest rate increased savings while Ajayi (1978) in his own study concluded that savings deposits rate in a deregulated regime is not necessary in explaining the demand for savings deposit.

The study of Grilli & Milesi-Ferretti (1995), Rodrick (1998) & Kraay (2000), on the effect of financial liberalization on savings and growth, discovered that financial liberalization does not affect savings and growth, but Levine(2001), Bekaert et.al.(2003) and Bonfiglioli & Mendicino (2004),found that the effect was positive. Also, in a similar study, Eichengreen & Leblang (2003), found the effect to be negative while Bakaert *et. al.*, (2003), Chinn & Ito (2003) and Edwards (2001), discovered those effects to be heterogeneous across countries at different macroeconomic frameworks. Modigliani (1966), argues that a higher income raises aggregate savings because it would increase the aggregate income of those working relative to those not earning labour income (i.e. retired persons living off their accumulated assets).

Carroll & Weil (1994), also confirmed that lagged values of income growth seem to explain higher saving rates; they argue that the usual consumption models with either uncertainty or liquidity constraints are not sufficient to explain this result and advance instead the hypothesis of habit persistence, according to which higher income takes

some time to be reduced when income falls back. Moreover, empirical research has reported mixed results, paralleling the theoretical ambiguity. For instance, Bosworth (1993) found a positive interest rate coefficient in time-series estimation for individual countries, but a negative coefficient in a panel (cross-country) estimation for developing countries. Giovannini (1985) also concludes that in most cases the real interest elasticity is zero but given that financial liberalization may have changed the interest rates effects, it is not too surprising that results are not robust.

Commercial bankers have learned that deposit pricing can be used to shape the kind of customer base each bank can best serve. Changing deposit prices affect not only spread between bank loan rates and deposit interest rates but also customer balances and deposit mix decisions, which in turn, influence both bank growth and profit margins (Edmister, 1982). As Rose (1991) points out, deposit pricing is best used to protect and increase bank profitability, rather than to simply add more customers and to take market share away from competitors

Quaden (2004) argues that a more efficient banking system benefits the real economy by allowing “higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance.” This results in a sound financial system that will be friendly to both savers and borrowers. The reverse is also true in that if the banking sector’s interest rate is low, according to Ndung’u & Ngugi (2000), it discourages potential savers due to low returns on deposits and thus limits financing for potential borrowers. The existence of savings from surplus units creates the base of lending as one of the bank’s functions is pooling of resources and surplus funds and the creation of credit to deficit units in the economy.

The works of McKinnon (1973) & Shaw (1973) attributed financial repression as the cause of the unsatisfactory growth performance of developing countries. They argued that countries characterized by financial repression; raising nominal interest rates relative to inflation would increase saving and the supply of investible resources in the economy. The productivity of investment also rises as these resources are channeled to projects that have higher rates of return. They argued further that financial repression arises mostly when a country imposes ceilings on nominal deposit

and lending interest rates at a low level relative to inflation. The resulting low or negative real interest rates discourage savings mobilization and the channeling of the mobilized savings through the financial system. This has a negative impact on the quantity and quality of investment and hence on economic growth.

Agboluaje & Lawal (2013) on a comparative study in Nigeria observed that low deposit interest rate has effect on savings. Fry (1995) reports that across a sample 14 Asian countries, savings and interest rate are positively related thus if bank policies induce a rise in deposit rate then deposit volume should increase. Fry (1988) found that the real deposit rate of interest exerts a positive and significant effect on national savings. Nominal interest rate is also fixed by a country apex bank and has the capacity to affect bank deposit making bank cost of funds to increase with country specific monetary policy (Bernanke & Blinder 1988), (Kashyap & Stein 1994, 2000) and Walsh (2003). Paul & Omosefe (2014) studied the impact of interest rate on bank deposit in Nigeria and found out that nominal interest rates were having strong positive effects on deposits and were probably affecting customers' savings in a significant manner.

Eichengreen & Leblang (2003) in a study of financial liberalization show that higher interest rate does not necessarily lead to higher savings and investment. This path was also towed by Emmanuel (2006) and Okpara (2010). However, Awan *et al.*, (2010) in their study of financial liberalization and domestic savings behaviour in Pakistan from 1973-2007, observed that real interest rate positively impact savings. Jappeli & Pagano (1994) previously arrived at similar conclusion by using a panel data of OECD countries for 1960-1987.

Giovannini (1983) estimated regressions similar to Fry's (1988), coming up with contrasting results. Using data from the 1960s and 1970s for seven Asian countries, he found no real interest rate effect on savings. On the argument that traditional savings equations may not reveal the response of aggregate saving to the interest rate, Giovannini (1985) supplemented 'Keynesian-type' savings functions with estimates of the inter-temporal elasticity of substitution in consumption. Using annual data for 18 developing countries, it was found that only in 5 cases did consumption respond significantly to changes in interest rates. According to Balassa (1989) as well as Arrita

(1988) reviewed the literature on interest rates in developing countries as well as its effect on savings and concluded that even though most studies have indicated a positive relationship between savings and interest rates, they are inconclusive on whether saving is significantly affected as a result of data measurement and exclusion of appropriate lag structure. According to Agu (1988) reviewed the determinant and structure of interest rates in Nigeria and noted the existence of very low minimal and negative effect of low interest rates on savings and investment using the usual McKinnon financial repression diagram. His main conclusion was that the relationship between real interests and savings is inconclusive. Agu's conclusion based on theoretical analysis prompted Reichel (1991) to investigate the empirical relationship between, the real interest rate and saving in Nigeria who got the same result.

Mwega & Ngola (1991) used Kenyan data to test the relationships between interest rates and financial and nonfinancial saving. Their results reveal that the real deposit rate has an insignificant influence on both financial and non-financial saving in Kenya. They also found that higher interest rates constrict the demand for credit, suggesting that a policy of interest rate liberalization might be stag-inflationary in its effects. According to Ayanwu (1994) analysed the effect of real deposit interest rate on savings rate and investment rate for Nigeria between 1986 and 1994. The regression result confirmed a non-significant effect of real interest rates on savings and investment rates. The effect is negative for both, albeit insignificant.

Turtelboom (1991) has provided reasons for one to be skeptical about the impact of interest rates on saving in Africa. He examined the experience of five African countries (Gambia, Ghana, Kenya, Malawi, and Nigeria) with interest rate liberalization. It was revealed that despite substantial progress made in reforming their financial systems, liberalization only partially affected the level and variability of interest rates in these countries. This behavior of interest rates was attributed to the underdevelopment of financial markets and the oligopolistic structure of the banking industry which kept interest rate spreads wide through the collusive behavior of the dominating banks.

Seck & El-Nil (1993) also tested some causal relationships implied in the McKinnon-Shaw thesis for a sample of African countries. Using pooled cross-section and time-series data for 30 countries, shows that the deposit rate positively influenced financial savings. Using both times series and cross-sectional data for a large sample of industrial and developing countries, Masson, *et al.*, (1998) also found that the real interest rate had a small and insignificant effect in estimated saving functions. Separating panels of industrial and developing countries revealed a negative and insignificant effect in developing countries but a positive and significant (but not robust) effect for industrial countries. The authors attributed this disparate effect to the different levels of financial development in industrial versus developing countries as well as possible instability in the saving function due to financial liberalization in the developing countries.

The study by Galac & Kraft (2000) investigates deposit interest rates for the US and find that foreign bank were found to offer lower deposit interest rates than domestic banks, this negative interest rate elasticity shows larger differentials for foreign banks in times of crisis compared to domestic banks. Hellmann *et al.*, (1995) emphasized that deposits rate controls breed asset substitution where depositors seeks alternative way to save such as real estates, gold and other durable assets rather than money. A positive real interest rate is an incentive for saving and increased deposit mobilization. Otherwise, negative real interest rates as often the case in the developing countries is a disincentive to savings and subsequently reduce bank deposits.

Hanson (2001) compared the repression and liberalization experiences of India and Indonesia to illustrate how different approaches to liberalization can result in different outcomes. Although both countries were pushed to liberalize interest rates and credit allocation following balance of payment problems, Indonesia undertook rapid liberalization of interest rates and softened bank entry with little improvement in regulation and supervision. In contrast, India undertook more gradual liberalization and was careful to improve regulation and supervision significantly. Deposit mobilization increased in both countries and the expansion of private banks in Indonesia increased credit access to a wider group of borrowers who appear to have used the resources more efficiently. Bank lending to the public sector remained large

in India and the expansion in private sector credit came from non-bank financial intermediaries and the capital market. Growth increased in both countries following interest rate liberalization. Hanson found evidence that the productivity of investment also improved. The lack of strong supervision in Indonesia eventually resulted in serious banking problems, especially among small banks that entered with little capital.

Phylaktis (1997) however notes that despite the trauma associated with liberalization, by the early 1990s, Chile was at the most advanced stage in the process compared to other Latin American countries and was poised to resume sustainable growth. Nominal and real interest rates were however at high levels despite substantial capital inflows, as the demand for credit remained high. According to him, the key lessons to learn from Chile's experience with financial liberalization include: i) the order of liberalization is crucial and it is important to stabilize the economy before embarking on financial liberalization; ii) there should be a gradual liberalization of the external accounts and foreign exchange restrictions in order to avoid a possible increase in the stock of foreign debt; and iii) liberalizing interest rates without improving banking supervision creates moral hazard, with banks extending risky loans at high interest rates, in the expectation that deposit insurance will cover the losses.

## **2.2 Theoretical Review**

Many theories have been propounded to explain determination of interest rates and the following are some of the theories that the researcher has identified as relevant to the area of research under his consideration.

### **2.2.1 Loan Pricing Theory**

The loan pricing theory states that banks in most cases don't always set high interest rates which mean that they don't try to earn maximum interest income when lending. Banks are to consider other factors like the problems of adverse or unfavorable selection and the moral hazard associated with borrowing behavior since it is very difficult to predict the borrower type at the beginning of the banking relationship (Stiglitz & Weiss, 1981). The borrower type highly affects the pricing of loans as the borrower's interests and intended use of the loan very much determine the possibility

of the bank recouping both the principal and the accrued interest payments expected from the borrower.

In any case, if banks set interest rates that are too high, they may face adverse selection problems because high-risk borrowers are the only ones willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behavior since they are likely to take on highly risky projects or investments which will have greater potential to recoup the required high interest payments (Chodecai, 2004). This may lead to the rational approach in reasoning by Stiglitz & Weiss (1981) that in some cases we may not find that the interest rate set by banks commensurate with the risk of the borrowers. Here the bank tries by some means to realize or recognize the potential risk the borrower bears and therefore the bank tries to charge a lower rate so as to reduce the interest burden on the borrower and also reducing the borrower's chances of default. The bank in this sense forgoes the profit maximization objective whilst retaining surety in loan repayment and timely reception of interest income.

### **2.2.2 Firm Characteristics Theories**

These theories argue that there are factors or predetermined conditions that have to do with the firm in the banking relationship that affect the terms of lending for example the number of borrowing relationships will be significantly decreasing for relatively small, high-quality, informational vague and constrained firms, all other things been equal (Godlewski & Ziane, 2008). This reduction in borrowing relationships is as a result of the high risk associated with the organizations and if credit is to be granted a higher interest incentive is required so as to cover for a higher risk element. The problem of the bank actually analyzing the intended borrower leads to discretionary lending whereby there are some terms that can be arrived at with certain clients whilst some clients won't be subject to similar conditions or terms. This type of lending will mainly be based on credit analysis which is the best foundation of discretionary lending as borrowers or firms portraying the best qualities like high profitability and liquidity are the ones most likely to benefit from low rates whilst others portraying poor attributes are likely to be denied credit or to receive credit on unfavorable terms like high interest rates and or secured lending and this is done to reduce non-

performing loans. A non-performing asset (NPA) is the money lent to an individual that does not earn income and full payment of principal and interest is no longer anticipated, principal or interest is 90 days or more delinquent, or the maturity date has passed and payment in full has not been made (Boudriga *et al.*, 2009).

### **2.2.3 The Signaling Arguments**

Signaling arguments states that good companies should provide more collateral so that they can signal to the banks that they are less risky type of borrowers and then they are charged lower interest rates. Here a firm exploits its capital and asset muscle to secure a much friendlier and cheaper deal from the financial institution. Secured lending is in most cases cheaper than unsecured lending especially when companies are borrowing for larger projects like construction or expansion of operations which require larger capital outlays of capital. However the reverse signaling argument in contrast states that banks only require collateral and or other security agreement for relatively risky firms that also pay higher interest rates (Chodechai, 2004, Ewert & Schenk, 1998). In lending, collateral is regarded as a possible or alternative source of repayment but it in most cases works as a sign of good faith or as a sign of willingness to pay. In this sense collateral is required from those that pose a possible threat in inability to pay but it should not be considered as the basis for lending and due to the borrower's risky character he has to bear a higher level of interest and provide reasonable security. Here the firm in need of credit can forward a set of properties or assets it holds or owns as collateral in order to reduce lending risk and in some way boost its risk profile, which in the end will enable the firm to receive favorable rates.

### **2.2.4 Credit Market Theory**

This model of the classical credit market argues that the terms of credits clear the market. It states that if collateral and other lending agreement if held constant, the interest rate ultimately becomes the only pricing mechanism. If there is an increase in demand for credit at a given customer supply, the interest rate is likely to rise, and vice versa. It is then believed that the higher the failure risk of the borrower, the higher the interest premium (Ewert *et al.*, 2000), this is a clearly market based determination of interest rates. The interest rate level is the only influencing factor in loan pricing as the other variables like the lending agreement and collateral security

are held constant. Here the interest rate will also determine the borrower's credit worthiness as an interest rate premium will be effected on risky borrowers whilst those that have a good credit standing won't be affected.

### **2.2.5 Theory of Multiple-Lending**

Banks should be less inclined to share lending in the presence of well-developed equity markets and after a process consolidation, mergers and acquisition (Degryse *et al.*, 2004). If equity markets are well developed and liquid it therefore implies that any company wishing to borrow for long-term or wanting to raise larger amounts of capital will do so on the capital market than to approach a banks that won't be having bigger lending capacities. The other fact is that banks have the ability to source outside equity and or employ mergers and acquisitions which, if done on merit, will increase banks' lending capacities, thus reducing their need of greater diversification and monitoring through shared lending (Ongene & Smith, 2000).

However mergers and acquisitions sometimes do not lead to a corresponding increase in the capacity as this is only determined by the resultant bank's size. This theory has a great implication for banks in Nigeria in the light of the recent merging and acquisition exercise done in order to fulfill the consolidation regulations. As some of the local banks failed to meet minimum capital requirements it is widely acknowledged that they sought strategic means to overcome the problem by merging and therefore the exercise resulted in increased lending capacities and therefore reduced multiple or loan syndication. Loan syndication results in higher lending rate as more entities will be inclined to earn profits from a single lending venture.

### **2.2.6 The Loanable Funds Theory of Interest Rates**

Rates of return are measured with regard to real purchasing power and the theory of loanable funds propounds the determination of real interest rates based on the above condition. The theory is derived from the fact that the savers have to consider between current or future consumption prior to saving, therefore implying that the funds available from savings are determined by the need for future or present consumption. The more savers intend to have current consumption the less the funds available for investment and this affects or reduces the future. Thus, there is an existence of a tradeoff between present consumption and future consumption. Based on the

assumption that people always prefer current consumption there exists an apparent need to pay an attractive incentive to persuade them to forgo this present consumption and prefer a much deferred consumption date. Therefore the real interest rate is the rate needed to persuade people to forgo present consumption and it is sometimes referred to as the reward for waiting. This implies that the savings level will be positively related to the rate of interest paid on the savings.

However according to the theory real investment, is a negative function of the interest rate since the interest rate reflects the productivity of investment projects (McConnell & Bruce, 1995). The lower the rate of interest the more investment projects become profitable and the more willing investors will be to borrow in order to invest. Thus, the real interest rate is determined by the willingness to forgo present consumption - sometimes referred to as thrift and the demand for investment. This all assumes that present income and the rates of return on investment projects are known, allowing people to make a rational choice between goods now and goods in the future. The major drawback of the above mentioned approach is that the available interest rates that are quoted every day are expressed in nominal terms and not in real terms. These rates only provide information on the money return on savings and investment whilst the effects of inflation are not adjusted in the nominal rates therefore giving rise to the need to provide more comprehensive information based on the real interest rate, which is adjusted for inflation. This is based on the argument that a saver wanting a real rate of return will take into account the rate of inflation over the period of the loan he is making (Kroeger 2000). Actually, the nominal rate of interest should equal the real rate of interest plus the expected rate of inflation. Due to the fact that savers don't know the rate of inflation that will prevail in the future real interest rates are always different from what savers want.

### **2.2.7 Liquidity Preference Theory**

The Loanable funds theory tries to combine the rates of return to future inflation adjusted income so as to strike the balance in having to make informed decisions on whether to prefer present or future consumption, potential investors must have considerable knowledge of the expected productivity of the future periods. However in the practical world, this is difficult to determine with certainty and also the

provision of only nominal rates makes it also difficult for the layman saver or investor to predict real rates of return in the future implying that the loanable funds theory exists in equilibrium which is rarely achieved in the practical world. The liquidity preference theory considers above all that in as much as interest rates have an impact on savings levels the likely amount of savings is likely to be derived from the prevailing change in income levels. This shows that most people make saving plans based on the expected level of income adjusted to the prevailing expected rate of inflation (as in the loanable funds model) but these plans are often not fulfilled because their expectations, especially about the level of income, are frequently wrong according to Friedman 1957. Under these circumstances, the most pressing question does not concern current and future consumption but is about the way in which to hold the existing level of wealth. In an uncertain world, people seek a degree of liquidity and it is this demand for liquidity that is a major element in the determination of interest rates. This gives us the model with the rate of interest being determined by the demand for money (liquidity preference) and the supply of money.

It is theoretically possible to bring the two theories together by suggesting that liquidity preference is a short-run or disequilibrium theory while loanable funds provides a long-run theory. In other words, loanable funds theory operates in equilibrium when people's expectations are correct. Under these circumstances, we are back in a world of certainty and people are able to make plans about the future and can assume that these plans will be fulfilled. However, bringing the theories together in this way is artificial since the proponents of liquidity preference theory do not believe that the world is ever in long-run equilibrium. In their view, people make decisions in a constantly changing series of short-run situations in which they are always uncertain about the future and cannot depend on their plans being fulfilled.

Equally, the supporters of loanable funds theory argue that the short-run in Keynesian economics is unimportant. The basis of economics, they argue, is the allocation of scarce resources - a real decision. Concentrating on the short run, they would say, is simply confusing real decisions with temporary factors. In the short-run people might act irrationally. They might suffer from money illusion but this does not mean that economic decisions should be based on the short run (Modigliani, 1986). To do so is likely to lead to an inefficient use of resources in the economy.

This is a very old battle. Keynes, who first stated the liquidity preference theory of interest rates in a fully developed way, argued that ‘in the long run we are all dead’. What he meant was that economic analysis and economic policy should be based on the world as it is rather than on some theoretical model of a world in equilibrium that does not exist. People live in the short run. Thus, to attempt to combine the two interest rate theories is to misunderstand the reason for the distinction between them. In practice, one can of course adopt some sort of half-way position suggesting that people try to take account of the trade-off between present and future consumption and the productivity of investment but that interest rates vary quite a lot from the rates that would equate the rate of time preference with the marginal productivity of investment because of the factors that enter into the liquidity preference model.

### **2.2.8 Monti-Klein Model**

This is an advanced model that was born from the works of Klein (1971) & Monti (1972). It is a derivative of the industrial organization approach to banking. The basic hypothesis of the model is that a bank’s motive is to earn maximum profits in any given trading period. This motive is driven by shareholders who expect the highest possible rate of return on their investments hence would push the firm to earn maximum profits.

Secondly, banks are not complete price takers, that is, banks have some degree of control over the setting of prices in both the deposit and loan markets (Linda *et al.*, 1999). Banks control over prices is limited by the existence of regulation or competition in the market. The power of banks to control prices is increased by market imperfections such as market power and information asymmetries.

The third assumption is that banks do not have control over the interbank money market rate and bonds interest rate, and the interbank market rate affects the rates on deposit and loans (Gropp *et al.*, 2007). The bonds and interbank markets are there to finance liquidity gaps in the banks. Linda *et al.*, (1999) observed that a rise in the interbank market rate is associated with a corresponding increase in lending rates and deposit rates. Hutchinson (1995) cited in Gropp *et al.*, (2007) articulated that the gap between the deposit rate and the market rate represents the opportunity cost of deposits by depositors and this represents profits to the bank.

The major thrust of the model is on the cost of funds as the major determinant of a banks' consideration in setting prices. The cost of funds is determined by the movement in the interbank market rate. A rise in the interbank market rate is expected to raise lending rates which in turn can raise spreads because banks are profit maximizers. The Monti-klein gives a clear account of the relationship of the bank lending and deposit rates with other markets rates. However, the applicability of the model can be difficult in cases when the economy is dollarized. Quinspe-Agnoli & Whisler (2006) realized that full dollarization of the economy can result in an inactive interbank market therefore the rate will have little bearing on charges by banks.

### **2.2.9 HO and Saunders Dealership Model**

The dealership model identifies the provision of liquidity to the market as the major role of banks in the financial system. This is done by matching the deposits with the loans. However banks fail to balance the two due to an irregular arrival of depositors and borrowers (Brock & Franken, 2000). Therefore the bank has to determine the rate of return which can close the gap created by the asymmetrical arrival of loan demands and supply of funds (Gropp *et al.*, 2007). The theoretical construction of the model according to Brock & Franken (2000) begins with banks trying to balance deposits (D) and loans (L), but due to asymmetrical arrival of loans the original balanced position which is  $(D = L)$  is offset and the resulting position will be  $(F = L - D)$ , where (F) is the difference between loans and deposits. Thus banks using the money market rate as the benchmark will try to determine the value (R) which will be enough to strike the balance or narrow (F) and also achieve wealth maximization for the bank.

### **2.2.10 Hold-Up and Soft-Budget-Constraint Theories**

Banks choice of multiple-bank lending is in terms of two inefficiencies affecting exclusive bank-firm relationships, namely the hold-up and the soft-budget-constraint problems.<sup>1</sup> According to the hold-up literature, sharing lending avoids the expropriation of informational rents. This improves firms' incentives to make proper investment choices and in turn it increases banks' profits (Von Thadden, 2004; Padilla & Pagano, 1997). As for the soft-budget-constraint problem, multiple-bank lending enables banks not to extend further inefficient credit, thus reducing firms' strategic defaults. Both of these theories consider multiple-bank lending as a way for banks to

commit towards entrepreneurs and improve their incentives. None of them, however, addresses how multiple-bank lending affects banks' incentives to monitor, and thus can explain the apparent discrepancy between the widespread use of multiple-bank lending and the importance of bank monitoring. But according to Carletti *et al.*, (2006), when one considers explicitly banks' incentives to monitor, multiple-bank lending may become an optimal way for banks with limited lending capacities to commit to higher monitoring levels. Despite involving free-riding and duplication of efforts, sharing lending allows banks to expand the number of loans and achieve greater diversification. This mitigates the agency problem between banks and depositors, and it improves banks' monitoring incentives. Thus, differently from the classical theory of banks as delegated monitors, their paper suggested that multiple-bank lending may positively affect overall monitoring and increase firms' future profitability.

### **2.3 Empirical Review**

Ogunbiyi & Ihejirika (2014) investigated on how interest rates affect the profitability of deposit money banks in Nigeria. The study was based on country aggregate level annual data that covered a period of thirteen years 1999 to 2012 and made use of multivariate regression analysis under an econometric framework. The Augmented Dickey and Fuller unit root test results indicate that the series are either  $I(0)$ ,  $I(1)$  or  $I(2)$  stationary. The estimated results show that Maximum lending rate, Real Interest rate and Savings deposit rate have negative and significant effects on the profitability of Nigerian deposit money banks as measured by return on assets at the 5% level of significance. Also, the study found that Real interest rate at the 8% level of significance has negative and significant relationship with Return on Equity of money deposit banks in Nigeria. On the other hand, the study found no significant relationship between interest rate variables and Net Interest Margin of Deposit Money Banks in Nigeria. The implication of the findings of this study suggests that the profitability of the banking sector is a function of changing interest rates. The study therefore recommends that government should adopt monetary policies that will help Nigerian deposit money banks to improve on their profitability and there is need to review and strengthen bank lending rate policies through effective and efficient regulation and supervisory framework. Banks can improve their profitability through

charging moderate lending rates as against maximum rates as their circumstances may allow. Furthermore, the managers of money deposit banks are expected to create the conditions for an efficient banking system devoid of information asymmetry to adapt to changing macroeconomic variables of interest rates and inflation. Banks' management must efficiently manage their portfolios in order to protect the long run interest of profit-making.

Ene, Atong & Ene (2015) examined before the deregulation of interest rates in Nigeria, the interest rate was strictly controlled by the Central Bank of Nigeria (CBN). It was later realized that strictly regulated interest rate strategy could not sustain banks profitability in the country. The study therefore seeks to empirically examine the effect of Interest Rates Deregulation on the performance of Deposit Money Banks in Nigeria between 1986 and 2014 using OLS regression method. Unit root test was employed to ascertain the stationary levels of the variables before conducting the regression analysis. Findings from the study revealed that deregulated interest rates have positive and significant impact on the ROA of deposit money banks. It showed that as interest rates increase, the ROA also appreciates. The study further revealed that deregulated interest rates have positive and significant relationship with the loans and advances of deposit money banks. It shows that the higher the rates of interests, the higher the performance of deposit money banks. It was therefore recommended that the banking sector regulatory authority needs to ensure that specific policy tools such as the minimum re-discount rate, maximum lending rate, liquidity ratio, monetary policy rate are effectively managed to induce higher savings, increase credit supply, stimulate investment and hence positively impact on the performance of the banking sector and enhance economic growth in general.

Hassan (2016) examined the effect of interest rate on commercial bank deposits in Nigeria. Ordinarily, high interest rate should spur the desire for bank customers to want to deposit their fund in the bank vault. Likewise, low interest rate should naturally discourage depositors. But most oftentimes this is not the case, hence this study to examine how interest rates affects commercial bank deposits between 2000 and 2013 in Nigeria. The study made use of secondary data sourced from the Central Bank of Nigeria statistical bulletin and the National Bureau of Statistics between 2000

and 2013. The model for the study has as its dependent variable the Commercial Bank Deposits (CBD) while its explanatory variables were the interest rates and the Gross Domestic Product (GDP). Using the Ordinary Least Square (OLS) multiple regression techniques; the study revealed that there is a negative relationship between the interest rates and the commercial bank deposits suggesting that interest rates has not been responsible for customers deposits in commercial banks in Nigeria. The study, therefore recommended that adequate awareness be made by commercial banks to attract more of customers' deposits by educating on the measure of interest that will accrue to them when they deposit their funds with the commercial banks.

Okolo Chimaobi Valentine 2015 investigate Interest Rate Fluctuation Effect on Commercial Bank's Fixed Fund Deposit in Nigeria. Commercial banks in Nigeria adopted many strategies to attract fresh deposits including the use of high deposit rate. However, pricing of banking services moved in favor of the banks at the expense of customers, resulting in their seeking other investment alternatives rather than saving their money in the bank. Both deposit and lending rates were greatly influenced by the Central Bank of Nigeria (CBN) decision on interest rate. Therefore, commercial bank effort to attract deposits via manipulation of her rates was greatly limited, otherwise the banks will be giving out more than it earned. The study aimed at examining the relationship between interest rate and fixed fund deposit of commercial banks, how policy-controlled interest rate affected commercial bank's fixed fund deposit The researcher employed ordinary least square technique, using, multiple linear regression, unrestricted vector auto-regression, correlation matrix test, granger causality and impulse response graph in the analysis. Commercial bank's interest rates affected commercial bank's fixed fund deposit significantly while policy-controlled interest rate did not significantly transmit through the commercial bank's interest rates to affect fixed fund deposit. While commercial banks seek creative ways to expand their fixed fund deposit, policy authorities in Nigeria should better coordinate interest rate fluctuation and induce competition in the entire financial sector.

The study employed econometric analysis. The econometric analyses used are the ordinary least square and vector autoregression. This was specified to help examine the influence of interest rate on commercial bank's fixed fund deposit in Nigeria.

Fixed fund deposit is proxied by Time Deposit (TD) and interest rate was proxied by bank rates (commercial bank's lending and deposit rates) and policy-controlled interest rates (monetary policy rate and treasury bill rate). Data was sourced from Central Bank of Nigeria (CBN) statistical bulletin.

The study hypothesize that interest rate fluctuation has not significantly affected commercial bank's fixed fund deposit in Nigeria. The study concluded that commercial bank's interest rate affects commercial bank's fixed fund deposit significantly. However, the bank's interest rate does not respond effectively to policy-controlled interest rate. The ineffective pass-through and sticky adjustments of commercial bank's interest rates in Nigeria could in part be as a result of poor coordination of monetary policy tools to achieve specific objectives and this has further affected the level of mobilization of fixed fund deposits by commercial banks.

Oluitan (2012) assessed the significance of real bank credit in stimulating real output growth in the case of Nigeria. The study observes that credit Granger causes output. In testing the factors that mobilise credit, it finds that exports in general are negatively related to credit. However, while oil exports are negatively related to credit, non-oil export has positive relationship with credit. Credit is also positively linked to capital inflows and imports.

Nwakanma, Nnamdi and Omojefe (2014) evaluated the nature of long-run relationship existing between bank credits to the private sector of Nigeria's economy and the nation's economic growth as well as the directions of prevailing causality between them from period 1981 and 2011. Applying Autoregressive Distributed Lag Bound (ARDL) and Granger Causality techniques, the results indicate significant long-run relationship between the study variables but without significant causality in any direction. Marshal, Igbanibo and Onyekachi (2015) examined the impact of bank domestic credits on the economic growth of Nigeria using time series Nigerian data for the period 1980-2013. Credit to private sector, credit to government sector and contingent liability were used as proxy for bank domestic credit while gross domestic product represents economic growth. The relative statistics of the estimated model shows that credit to the private sector (CPS) and Credit to the government sector (CGS) positively and significantly correlate with GDP in the short run. The analysis

revealed the existence of poor long run relationship between bank domestic credit indicators and gross domestic product in Nigeria.

Akujuobi and Nwezeaku (2015) determined the effect of bank lending activities on economic development in Nigeria, covering the period, 1980-2013. Applying the test for stationarity with the Ordinary Least Square (OLS), and Co-integration procedures, the results revealed a significant relationship between bank lending activities and economic development in Nigeria. Credit to the general commerce and production sectors were statistically significant as well as met the a priori expectation. Obamuyi, Edun and Kayode (2011) investigated the effect of bank lending and economic growth on the manufacturing output in Nigeria. Times series data covering a period of 36 years (1973-2009) were employed and tested with the co-integration and vector error correction model (VECM) techniques. The findings of the study show that manufacturing capacity utilization and bank lending rates significantly affect manufacturing output in Nigeria. However, the relationship between manufacturing output and economic growth could not be established in the country. Akpansung and Babalola (2010) ascertained relationship between banking sector credit and economic growth in Nigeria over the period 1970-2008. The causal links between the pairs of variables of interest were established using Granger causality test while a Two-Stage Least Squares (TSLS) estimation technique was used for the regression models. The results of Granger causality test show evidence of unidirectional causal relationship from GDP to private sector credit (PSC) and from industrial production index (IND) to GDP. Estimated regression models indicate that private sector credit impacts positively on economic growth over the period of coverage in this study. However, lending (interest) rate impedes economic growth. Aurangzeb (2012) evaluated the contributions of banking sector in economic growth of Pakistan from the period of 1981 to 2010. Regression results indicate that deposits, investments, advances, profitability and interest earnings have significant positive impact on economic growth of Pakistan. The Granger-Causality test confirms the bidirectional causal relationship of deposits, advances and profitability with economic growth. On the other side a unidirectional causal relationship of investments and interest earnings with economic growth runs from investments and interest earnings to economic growth. Applying the identification strategy employed by Driscoll (2004) for the

United States, Cappiello, Kaderaja, Sorensen & Protopapa (2010) provided empirical evidence for the existence of a bank lending channel of monetary policy transmission in the euro area. In addition, and in contrast to recent findings for the US, they found that in the euro area changes in the supply of credit, both in terms of volumes and in terms of credit standards applied on loans to enterprises, have significant effect on real economic activity. Ojeaga, Odejimi, Okhiku & Ojeaga (2014) determined the effect of bank lending on growth in Nigeria using a sample of data from 1989 to 2012. With quantile regression estimation method, it was found that commercial bank lending was having a negative effect on growth while institutions were not sufficiently protecting customers from the negative effect that often arise when banks liquidate. Central bank policies were found to be minimizing bank losses and helping to drive economic growth in general. Timsina (2014) examined the impact of commercial bank credit to the private sector on the economic growth in Nepal from supply side perspectives. The study has applied Johansen co-integration approach and Error Correction Model using the time series data for the period of 1975-2013. The empirical results show that bank credit to the private sector has positive effects on the economic growth in Nepal only in the long run. Nevertheless, in the short run, it has been observed a feedback effect from economic growth to private sector credit.

Emecheta and Ibe (2014) investigated the impact of bank credit on economic growth in Nigeria applying the reduced form of vector autoregressive (VAR) technique using time series data from 1960 to 2011. Current gross domestic product (GDP) is the dependent variable and proxy for economic growth while bank credit to the private sector (CPS) to GDP ratio and broad money (M2) to GDP ratio were proxies for financial indicator and financial depth respectively. A major finding was that there is a significant positive relationship between bank credit to the private sector, broad money and economic growth. Mamman and Hashim (2014) assessed the impact bank lending on economic growth in Nigeria for the period 1987 to 2012. This study relied purely on secondary data, and using multiple regression model, the study find out that bank lending accounts for about 82.6% variation in economic growth in Nigeria for the period studied. Tahir, Shehzadi, Ali and Ullah (2015) examined the association among bank credit to private sector and economic growth in Pakistan. Secondary data were collected from World Bank Indicator, ranging for the period 1973 to 2013. Co-

integration VECUM and Granger Causality test were statistically used to test the variable relationship and causality effect of the variable. The findings of the study showed that bank credit had extensive relationship with economic progression; in short term the relationship was also significant. Regression analysis showed that there was adverse impact of bank credit on economic growth in Pakistan. Olowofeso, Adeleke and Udoji (2015) ascertained the impacts of private sector credit on economic growth in Nigeria using the Gregory and Hansen (1996) co-integration test. The method was applied to quarterly data spanning 2000:Q1 to 2014:Q4, while the fully modified ordinary least squares procedure was employed to estimate the model coefficients. They found a co-integrating relationship between output and its selected determinants, albeit, with a structural break in 2012Q1. Amongst others, findings from the error correction model confirmed a positive and statistically significant effect of private sector credit on output, while increased prime lending rate was inhibiting growth.

Makinde (2016) explored the implications of commercial bank loans on economic growth in Nigeria between 1986 and 2014. Using the Ordinary Least Square (OLS) multiple regression techniques; the study revealed that only the agricultural sector have been enjoying much of Bank credit and it has been making positive impact on the Gross Domestic products (GDP) while others like Mining and Quarrying, Manufacturing and the Building and Constructions sectors have not been getting much attention in terms of bank credit to spur development in that sector.

Onaolapo & Shomade (2017), Appraised the effect of Monetary Policies on Commercial Bank Lending Behavior in Nigeria Banking Industry From 1980-2014. The study used Keynesian model which incorporated the role of money supply as a yardstick for interest rate to induce the public to hold additional money balances was adapted to investigate the link between monetary policies and commercial banks' lending rate in Nigeria. Annual time series data was sourced from the Central Bank of Nigeria's Statistical Bulletin between 1980 to 2014. Ordinary least square method (OLS), augmented dickey fuller test (ADF), co-integration test and Error correction model (ECM) were employed as the estimation techniques. Pre-estimation findings showed that some variables were non-mean reverting at level and do not converge to

their long run equilibrium until they were at first differenced. The result of finding indicated that there was a long run relationship between monetary policy and commercial banks' lending behavior in Nigeria. It is recommended that Nigeria should consider policies beyond discretion, if monetary variables are to produce meaningful macroeconomic changes. The long run OLS model showed that the major determinants of loans and advances for the commercial banks are the volume of deposits, foreign exchange and economic growth. Specifically, the long run result showed that for every 1% increase in deposits, loan and advances from commercial banks increases significantly by 56.98% which is in line with our positive apriori expectation. The implication of this finding is that loan and advances is a major factor that determines the capacity of commercial banks in loan disbursement in Nigeria. In the same vein, exchange rate impacted minimally but positively on loan and advances from commercial banks. However, this positive contribution is insignificant.

Similarly, Anyanwu, Ananwude & Okoye (2017) assessed of the Impact of Commercial Banks' Lending on Economic Development of Nigeria. The study empirically assesses the impact of commercial banks' lending on economic development of Nigeria from 1986 to 2015 by specifically ascertaining the impact of commercial banks' lending on real gross domestic product and index of industrial production. The data sourced from the Central Bank of Nigeria statistical bulletin were diagnosed for serial correlation, heteroskedasticity and Ramsey Reset model fitness specification and stationarity. The Johansen co-integration envisaged a long run relationship between commercial banks' lending and gross domestic product but such could be said for index of industrial production. The granger impact assessment result shows that commercial banks' lending has significant impact on real gross domestic product and real gross domestic product on the other hand, has significant impact on credit to private sector. Index of industrial production was not significantly influenced by commercial banks' lending activities. The study recommends that the Central Bank of Nigeria should implement regulation to stop banks from centering loans and advances to a particular sector which is, oil and gas to improve credit flow to other strategic sectors, especially agriculture and industries to increase their contributions to gross domestic product of Nigeria among others.

## **2.4 Review Summary**

It is known that depositors bring money to the bank which the bank in turn lends it to borrowers. The gross earnings of the bank are determined by the volume and composition of loanable funds and the rates at which they are loaned. After losses and expenses of operation are deducted, the net earnings provide a margin out of which interest on deposits can be paid. Because of the competition for these funds among bankers who desire to loan them at a profit, a bank must pay interest or lose deposits to a competitor. The payment of interest on deposits is explained in this wise, like any other interest rate. As to Erna & Ekki (2004), Economists, mainly conventional ones, believe that depositors are attracted to deposit their money in banks because of the opportunity cost of holding cash in hand is high when the interest rate is also high (Romer, 2000, Athukorala & Sen, 2004,). This can easily be explained by the utility maximization (cost minimization) premise, as a depositor will choose an action that will maximize their welfare or satisfaction. As to Richard (1971), regulation of the commercial banking industry affects the returns which commercial banks realize on their deposits and capital. That is although deposits are the source for profit of banks it is influenced by regulation of the country. Accordingly, the higher profit rate on demand deposits is to a large extent the result of the prohibition against the payment of interest on these deposits. Therefore, depositors are motivated by returns.

Using an Adaptive Expectation Model (AEM), it is founded that depositors are indeed motivated by returns in Malaysia (Erna & Ekki, 2004). On the other hand, Erna & Ekki (2004) states that the rate of interest does not have influence on the volume of the deposits. However, Rose (2001) said that banks increase their deposits by offering higher deposit rate. These are the articles that contradict to each other in identifying the relationship between the commercial banks deposits and saving interest rates or deposit rate.

## REFERENCES

- Adam B. A (2005). Are banks really special? New evidence from the fdic induced. failure on healthy Banks. *American Economic Review*, 32(6),1712-1734
- Adofu, M. I. & Audu, S. I. (2010). An assessment of the effect of interest rate deregulation in enhancing Agricultural production in Nigeria. *Current Research Journal of Economic Theory*, 2(2), 82-86
- Agboluaje, A.A., & Lawal, A. F. (2013). Comparative Study between Granger Causality and Forecast Error Variance Decomposition Analyses on the Effect of Deposit Interest Rate on Savings in Nigeria. *Transnational Journal of Science and Technology*, 3(1),45-67.
- Agu, C.C. (1988). Interest rates policy in Nigeria and it attendant distortions” savings and development. *American Economic Review* XII(1), 19-33.
- Ajayi D. (1978). Deposit Rates in a deregulated Regime and its implications. *Transnational Journal of Science and Technology*, 3(3), 55-67
- Angbazo, L. (1997). Commercial bank net interest margins, default risk, interest rate risk and off–balance sheet banking. *Journal of Banking and Finance*, 21(3), 55–87.
- Anil K. K., R. Rajan & Stein, J.C (2002). Banks as liquidity providers: an explanation for the coexistence of lending and deposit taking. *The Journal of Finance*, XXXIV(4)1123-1167
- Anyanwu, J.C. (1995). Structural Adjustment Programme, Financial Deregulation: The Nigeria Case. *The Nigerian Economic and Financial Review* 1(1), 12-34
- Arrieta, C.M.G. (1988). Interest rates, savings, and growth in LDCs: an assessment of recent empirical research. *World Development*, 16(5), 589-605.
- Athukorala, P & Sen, R. I. (1993). Liberalization of the domestic financial market: theoretical issues with evidence from Sri-Lanka. *International Economic Journal* 7(4), 67-83
- Angbazo, L. (1997). Commercial bank net interest margins, default risk, interest rate risk and off–balance sheet banking. *Journal of Banking and Finance*, 21(4), 55–87.
- Balassa, B. (1981). Structural policies in developing economies. *World Bank Working Paper* 464.
- Barajas, A., Steiner, R., & Salazar, N. (2000). *Interest spreads in banking in Columbia*, 1974- 6. IMF Staff Papers, 46(2), 196-224.
- Bakaert, G., Campbelrh,R., & Christian, L. (2003). Does financial liberalization spur growth. *Journal of Financial Economics* 77 (5), 3–55

- BaquiKhalily M., Richard L. Meyer, & Hushak, L.J (1987). Deposit mobilization in Bangladesh: Implications for rural financial institutions and financial policies. *The Bangladesh Development Studies*, 15(4), 85-117
- Berger, A.N. & Udell, G.F. (2004). The institutional memory hypothesis and the procyclicality of bank lending. *Journal of Financial Intermediation*, 13(4), 458-495.
- Bernanke, B. & A. Blinder (1988). Credit, money and aggregate demand. *American Economic Review*, 78 (2), 435-439
- Bhatt V. (1970), Some aspects of deposit mobilization. *Economic and Political Weekly*, 5(36), 1495-1497.
- Bonfiglioli, A. & Mendicino, C. (2004), Financial Liberalization, Banking Crisis and Growth: Assessing the Links", *SSE/EFI Working Paper No 567*
- Boudriga, A., Boulila, N., & Jellouli, S. (2009). Does bank supervision impact nonperforming loans: cross-country determinants using aggregate data. *American Economic Review*, 45(4), 234-257.
- Brock, P.L, & Rojas-Suárez, F, (2000). Understanding the behavior of bank spreads in Latin America. *Journal of Development Economics*, 63(3), 113–134.
- Carletti, E., Cerasi, V. & Daltung, S. (2006). Multiple-bank lending: diversification and free-riding in monitoring, *Working Paper*, department of statistics: UniversitadegliStudi di Milano-Bicocca,.
- Carroll, C, & Weil, D., (1994). Saving and growth. a reinterpretation. *Carnegie-Rochester Conference series on Public policy*. 40(2),133-192
- Chinn, M. and Ito, H. (2003). What matters for financial development? capital controls, institutions and interactions. *Journal of Development Economics*, 12(4), 67-83
- Chodechai, S. (2004). *Determinants of bank lending in thailand: an empirical examination for the years 1992 – 1996*, Unpublished Thesis
- Crowley, J., (2007). *Interest rate spreads in english-speaking Africa*. *IMF Working Paper*. April 123-45
- Demirgüç-Kunt, Asli, and Harry Huizinga, (1998). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, 13(7), 379–408.
- Giedeman D. C. (2005). *Branch banking restriction and finance constraints in early 65*. *The Journal of Economics History*, 65(1), 129-151.

- Degryse H., Masschelein, N. & Mitchell, J. (2004). SMEs and bank lending relationships: The impact of mergers. *National Bank of Belgium Working Paper*, No. 46.
- Desinga R. N. (1975). Deposit mobilization by co-operative banks; A comparison. *Economic and Political Weekly*, 29(8), 1098-1100
- Devinaga R. (2010). Theoretical framework of profitability as applied to Commercial Bank in Malaysia. *European Journal of Economics, Finance and Administrative Sciences*, 25(5), 35-51
- Dorothee H & Schertler, A (2009). Why do savings banks transform sight deposits into illiquid assets less intensively than the regulation allows?. *Discussion Paper*
- Edmister, R.O. (1982), Margin analysis for consumer deposit interest rate policy. *Journal of Bank Research*, Autumn 1982, 179-84.
- Edwards S. (2001). Capital mobility and economic performance: are emerging economies different. *NBER.P. 8076*.
- Eichengreen, B. & Leblang, D. (2003). Capital account liberalization and growth: was Mr Mahathir right. *International Journal of Finance and Economics*, 8(5), 205-224.
- Elser L., Alfred H., & Wisniwski, S (2005). Competitive analysis of savings mobilisation strategies, consultative group to assist the poorest (CGAP) Working Group on Savings Mobilisation, Eschborn. 8.
- Ene, E. E., Atong, A. S and Ene, J. C (2015). Effect of interest rates deregulation on the performance of deposit money Banks in Nigeria. *International Journal of Managerial Studies and Research*, 3(9), 164-176.
- Erna R. & Syamsulhakim, E (2004). Factors affecting Mudaraba deposits in Indonesia. *Working Paper in Economics and Development Studies*. Padjadjaran University, Indonesia.
- Eustacius N.B. & Leatham, D.J (1995). factors affecting commercial bank lending to agriculture. *Southern Agricultural Economics Association*.
- Evan G., T. Schuermann & Strahan, P. E. (2006). Managing bank liquidity risk: how deposit-loan synergies vary with market conditions. *Federal Reserve Bank of New York*.
- Felicia O. O (2011). Determinants of Commercial Banks' lending behavior in Nigeria. *International Journal of Financial Research* 2(2), 13-25
- Finger H, & Hesse, H (2009). Lebanon-Determinants of commercial banks Deposits in a Regional Financial Center" *IMF Working paper*, WP/09/19.

- Fouopi-Djiogap C. & Ngomsi, A (2012), Determinants of bank long-term lending behavior in the Central African Economic and Monetary Community. *Review of Economics & Finance*, 2(1), 23-32
- Franklin Allen & Elena C. (2008). *The roles of banks in financial systems*” University of Pennsylvania. University of Frankfurt and CFS.
- Freixas, X. & Jean-Charles, R (2008) . *Microeconomics of Banking*. Cambridge, Massachusetts, MIT Press
- Friedman, M. (1957). *A Theory of the Consumption Function*, NBER, Princeton University Press, Princeton.
- Fry, M., (1988). *Money, Interest, and Banking in Economic Development*. Johns Hopkins University Press, Baltimore, MD
- Fry, M (1995). *Facts about the Co-operative movement*. Nairobi, Kenya National Federation of Co-operatives
- George G. K (1972). Deposit variability and bank size. *The journal of financial and pp quantitative analysis*, 7(5), 2087-2096.
- Giovannini, A. (1983). The interest rate elasticity of savings in developing countries: The existing evidence. *World Development*, 11 (7), 345-367
- Giovannini, A. (1985). Saving and the rate of interest in LDCs,” *Journal of Development Economics*, 18(10), 1356-1372
- Godlewski C. J. & Ziane, Y. (2008). How many banks does it take to lend? Empirical Evidence from Europe. *Working Paper*, Laboratoire de Recherche en Gestion & Economie
- Grilli, V. & Milesi-Ferretti, H (1995). Economics effect and structural determinants of capital controls. *IMF Staff papers*, 42:3.
- Gropp, R., KokSorensen, C. & Lichtenberger, J. (2007). The dynamics of bank spreads and financial structure. ECB Working Paper No. 714.
- Hanson, J. A, (2001). Indonesia and India: Contrasting approaches to repression and liberalization. In *Financial Liberalization*, ed. by Caprio, Honohan, and Stiglitz (Cambridge: Cambridge University Press)
- Hanweck, G. A & Ryu, L. (2004). The sensitivity of bank net interest margins and profitability to credit, interest rate, and term-structure shocks across bank product specializations. *Working paper*, retrieved from [http://www.fdic.gov/bank/analytical/working/wp2005/WP2005\\_2.pdf](http://www.fdic.gov/bank/analytical/working/wp2005/WP2005_2.pdf). Accessed on 12/11/13)

- Harold L. S. (1946). The Problem of Excessive Commercial Bank Earnings. Oxford University Press, *The Quarterly Journal of Economics*, 60(3), 365 -389
- Haron S. & W. N. W. Azmi, (2006). Deposit determinants of commercial banks in Malaysia. *Working Paper Series* 009.
- Hasan I. & Sarkar S. (2002), Banks' option to lend, interest rate sensitivity, and credit availability. *Bank of Finland Discussion Paper*, retrieved from <http://www.suomenpankki.fi/pdf/104461.pdf> assessed on 12/11/13)
- Hassan, O. M. (2016). Effect of interest rate on Commercial Bank deposits in Nigeria (2000-2013). *First American Academic Research Conference on Global Business, Economics, Finance and Social Sciences (AAR16 New York Conference)*. [www.globalbizresearch.org](http://www.globalbizresearch.org), New York, USA. 1-17
- Hellmann T., K. Murdock & Stiglitz, J (1995). *Financial restraint: Toward a new paradigm,* forthcoming in *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis*", eds. M. Aoki, M. Okuno-Fujiwara and H. Kim, Oxford University Press
- Herald F. & Heiko H (2009). Lebanon-determinants of commercial banks deposits in a regional financial center. *IMF Working paper*, WP/09/195
- Hubbard, G. (1994). *Is there a 'credit channel' for monetary policy?*. Prepared for Presentation at the Economic Policy Conference, FRB of St. Louis.
- Jappeli T., & Pagano M (1994). Savings, growth and liquidity constraints. *Quarterly Journal of Economics*. 107(12), 1342-1351
- Jayaraman, T. & Sharma, R. (2003). Determinants of interest rate spread in the pacific island countries: Some evidence from Fiji. *USPEC working paper*, 1(1), 75-104.
- Jim S. (2008). *A how-to guide: Finding and interpreting GDP statistics*. Canadian Centre for Policy Alternatives
- Bernanke, B. & Blinder, A (1988). Credit, money and aggregate demand. *American Economic Review*, 78 (2), 435-439
- Katherine S. (2004). the evolving roles of Commercial Banks in US Credit Markets. *Federal Deposits Insurance Corporation*, USA Herald
- Kelvin A.S (2001). *The role of commercial banks in financing growth and economic development in Trinidad and Tobago and the Caribbean: a perspective from the royal bank of Trinidad and Tobago*. Central Bank of Belize.
- Khat, K.D.R. & Bathia, F.J (1993). Financial intermediation, savings mobilization and entrepreneurial development, the african experience. *Journal of Money, Credit and Banking*, 3(20), 205-218.

- Kraay, A. (2000). In search of the macroeconomic effects of capital account liberalization. *World Bank, Mimeo*.
- Kraft, E (2000). The lending policies of croatian banks: results of the 2nd cnb bank interview project. Croatian National Bank
- Levine, R. (2001). International financial liberalization and economic growth. *Review of International Economics* 9(2), 688-702.
- Lorenzo C. A., C. Sorensen & Protopapa M. (2010). Do bank loans and credit standards have an effect on output? A panel approach for Euro Area. *Working Paper Series*, European Central Bank.
- Mahendra V. P. (2005). Impact of self-help groups on formal banking habits. *Economic and Political Weekly*. 40(17), 1705-1713
- Maria S. M. Peria & Schmukler, S. L. (2001). Do depositors punish banks for bad behavior? Market discipline, deposit insurance, and banking crises. *The Journal of Finance*, 56(3), 1029-1051
- Mark C. & Mitcheer, K. S (2006), Branch credit banking, bank banking, competition, and financial stability. Ohio State University, *Journal of Money*, 38(5), 1293-1328
- Masson, P.,T Bayoumi, & Samiei, H. (1998). International evidence on the determinants of private saving. *World Bank Economic Review*, 12(3), 483-501
- McConnell, C.R. & Bruce, S.L. (1995), *Economics*. New York: McGraw-Hill Professional.
- Mckinnon, R.I. (1973). *Money and capital in economic development*. Washington: The Brookings Institution.
- Medhat T. (2004). A Comparison of Financial Performance in the Banking Sector: Some Evidence from Omani Commercial Banks. *International Research Journals of Finance and Economics* 34(12), 101-134
- Meenakshi T (1975), Expansion of commercial banking: An assessment. *Economic and Political Weekly*, 10(47), 1819-1824.
- Mishkin, F. S. (2007). Symposium on the monetary transmission mechanism. *Journal of Economic Perspectives*, Fall, 8(1), 3-10.
- Modigliani, F. (1966). The life-cycle hypothesis of savings; The demand for wealth, and the supply of capital. *Social Research* 33(6), 160-217.
- Modigliani, F. (1986). The monetarist controversy or, should we forsake stabilization policies ?' *American Economic Review*, March, 12(1), 1-19.

- Mohammad N. & Mahdi S. (2010). The role of inflation in financial repression: evidence from Iran. *World Applied Sciences Journal* 11(6), 653-661.
- Monti, M. (1972), *Deposit, credit and interest rate determination under alternative bank objective functions*. In G.P. Szego and K. Shell (eds), *Mathematical methods in investment and finance*, North-Holland, Amsterdam, 430-454
- Mustafa K. M & Younus, S (2009). An analysis of interest rate spread in Bangladesh. *The Bangladesh Development Studies*, Applied Finance Journal, 21(5), 90-102
- Mwega, F. & Ngola, S. (1991). The role of interest rates in the mobilization of private savings in Africa: A case study of Kenya. *Ife Journal of Economics and Finance*, 1(1), 1-14
- Nada M (2010). *Can banks provide liquidity in a financial crisis?* Federal Reserve Bank of Kansas City, Economic Revision
- Ndekwe, E.C. (1991). *Interest rates, bank deposits and growth of the Nigerian Economy*. NISER Monograph Series, No. 4.
- Ndung'u, N. & Ngugi, R.W. (2000), Banking Sector Interest Rate Spreads in Kenya, Kenya Institute for Public Policy Research and Analysis *Discussion Paper*, No. 5
- Ngugi R. (2001). An empirical analysis of interest rate spread in Kenya. *African Economic Research Consortium*.
- Ogunbiyi, S. S. & Ihejirika, P. O (2014). Interest rates and deposit money banks' profitability nexus: the nigerian experience. *Arabian Journal of Business and Management Review*, 3(11), 133-148
- Okpara G. C. (2010). The effect of financial liberalization on selected macroeconomic variables: Lesson from Nigeria. *International Journal of Applied Economics and Finance*, 4(4), 53-61.
- Ongena S. & Smith, D. C. (2000), What determines the number of Bank relationships?: Cross country evidence. *Journal of Financial Intermediation*, 9(6), 26-56
- Osamor, I. P., Akinlabi, H. & Osamor, V. C (2013). An empirical analysis of the impact of globalisation on performance of Nigerian Commercial Banks in post-consolidation period. *European Journal of Business and Management*, 5(5), 37 – 45.
- Padilla, A.J. & Pagano, M. (1997). Endogenous communication among lenders and entrepreneurial incentives. *Review of Financial Studies*, 10(11), 205-236
- Paul O. & Omosefe, O (2014). The impact of interest rate on bank deposit: Evidence from the Nigerian Banking Sector. *Mediterranean Journal of Social Sciences*, 5(16), 134-149.

- Phylaktis, K. (1997). Capital market integration in the Pacific-Basin region: An analysis of real interest rate linkage. *Pacific-Basin Finance Journal*, 5(2), 195-213
- Quaden, G (2004). *Efficiency and stability in an evolving financial system*. ([www.bnb.be/Sg/En/Contact/pdf/2004/sp040517en.pdf](http://www.bnb.be/Sg/En/Contact/pdf/2004/sp040517en.pdf) assessed on 12/11/13)
- Ramful, P. (2001). The determinants of interest rate spread: empirical evidence on the mauritian banking sector. *Central Bank of Mauritius Working paper*
- Richard E. B. (1971). Deposit composition and commercial bank earnings, *The Journal of Finance*, 26(1), 39-50
- Riechel (1991). *Savings, investment and growth patterns in developed and developing countries NCEMA Monography*. Series No. 3.
- Robinson, P. (2002). Zimbabwe's hyperinflation: The house is on fire—but does the government know that it is dousing the flames with Petrol?" Friedrich-Ebert-Stiftung. (Available at <http://library.fes.de/pdf-files/iez/03894.pdf> assessed on 12/11/13)
- Rodrik, D. (1998). *Who needs Capital-account convertibility*. Harvard University, Mimeo. (Ed)
- Romer, C.D (2000). Does monetary policy matter? A New Test in the Spirit of Friedman and Schwartz. *NBER Macroeconomics Annual* 4(3), 121-170.
- Russell O.C & Bamindele M.(2009). The impact of macroeconomic banking, instability on the banking sector lending behavior in Nigeria. *Journal of Money, Investment*, 13(7), 134-156.
- Saunders A & Schumacher L (2000). The determinants of bank interest rate margins: international study. *Journal of international money and finance*, 21(6), 813-832
- Shaw E. A. (1995). Operational Results of commercial banks in Jamaica (1991-1993). *Social and Economic Studies*, 44(4), 23-40
- Seck, D. and Nil El, Y. (1993), Financial liberalization in Africa. *World Development*, 21(5), 1867-1881
- Sheku A. & Bangura, F (2005). Statistical information and the banking sector. For Presentation at the Fourth meeting of the Committee on Development Information(CODI-IV)-Sub-Committee on Statistics, Plenary Session 1: Information in Key Economics Sector, *United Nations Conference Centre (UNCC)*, Addis Ababa, Ethiopia.
- Shubik M. & Sobel M. (1992). On matching book: A problem in banking and corporate finance. *INFORMS, Management Science*, 38(6), 827-839

- Singh, P. (2010). Technical and scale efficiency in district central co-operative banks of punjab - a non parametric analysis. *Indian Co-operative Review*, 47(1), 56-72.
- Sologoub, D. (2006). The determinants of Bank Interest Margins and Profitability: Case of Ukraine. ([www.bof.fi/bofit/seminar/bofcef06/sologub.pdf](http://www.bof.fi/bofit/seminar/bofcef06/sologub.pdf) assessed on 12/11/13).
- Stiglitz, J. E., & Weiss, A. (2001). Credit rationing in markets with imperfect information. *American Economic Review*, 26(7), 393-410.
- Turtelboom, B. (1991). interest rate liberalization: Some lessons from Africa. *IMF Working Paper*, WP/91/121.
- Valverde, S. C., Del Paso, R. L. & Fernandez, F. R. (2004). Banks, financial innovations and regional growth. *European Journal of Economics, Finance and Administrative Sciences*, 23(5), 101-115.
- Voon-Choong Y., H.B Ong, K.T Chan & Ang, S (2010). Factors affecting banks' risk exposure: Evidence from Malaysia. *European Journal of Economics, Finance and Administrative Sciences*.
- Walsh M. (2003). *Monetary theory and policy*. MIT Press Canbridge Massachussetts United States.
- Yanne G, P Schepelmann & Isabel V.S (2007). Alternative progress indicators to gross domestic product (GDP) as a means towards sustainable development. *European Journal of Economics, Finance and Administrative Sciences* 23(5),87-101

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Research Design**

According to Onwumere (2005), a research design is a kind of blueprint that guides the researcher in his or her investigation and analyses. The research design to be adopted for this research is the *ex-post facto* research design. The adoption of this research design was hinge on two reasons. Firstly, the study relied on historic accounting data obtained Central Bank of Nigeria (CBN), as such the event under investigation had already taken place and the researcher does not intend to control or manipulate the independent variables. The inability of the researcher to manipulate these variables is a basic feature of *ex-post facto* research design. (See Onwumere, 2005) thus, it perfectly suits this research.

Secondly, as described by Kerlinger (1970), the *ex-post facto* research design also called causal comparative research is used when the researcher intends to determine cause-effect relationship between the independent and dependent variables with a view to establishing a causal link between them.

#### **3.2 Nature and Sources of Data**

The issue of data is at the very centre of research and also the nature of data for any study depends entirely on the objectives of the research and the type of research undertaken (Onwumere, 2005). Therefore, consistent with the above and also in line with researches conducted in this area of finance and economics where most data utilized were obtained from the CBN statistical bulletin. Hence, the nature of data for this research was secondary in nature. Secondary data are data which have been processed, collated and exist in published form (see Onwumere, 2005). The secondary data sources used in this study was extracted from CBN statistical bulletin from 1986 – 2017.

#### **3.3 Model Specification**

A model is a simplified view of reality deigned to enable a researcher describe the essence and inter relationship within the system or phenomenon it depicts (Yomere and Agbonifoh, 1999). Following a detailed review of previous studies by Alasia, 2003, Ojo (1984), Odedokun (1987), Ezirim and Emenyonu (1997) Ajakaiye and

Odusola (1995) and specifically Ezirim *et al.*, (2002) deposit portfolio is expressed as a function of rate of interest, macroeconomic factors and bank specific factors set as control variables and this is expressed by the equation below;

$$TDV = f(INTR, GDP, BRCH) \dots\dots\dots (i)$$

However, in line with hypotheses stated, the model was modified as follows: For hypothesis one which states that Nominal interest rate does not have positive and significant impact on commercial bank deposit mobilization in Nigeria.

It will be represented as:

$$TDV = \beta_0 + \beta_1 NDPR + \beta_2 GDP + \beta_3 BRCH + \mu \dots\dots\dots (ii)$$

Where;

|                             |   |                                          |
|-----------------------------|---|------------------------------------------|
| <i>TDV</i>                  | = | Total Deposit Volume                     |
| <i>NDPR</i>                 | = | Nominal Deposit Rate                     |
| <i>GDP</i>                  | = | Gross Domestic Product                   |
| <i>BRCH</i>                 | = | Total Bank Branch                        |
| $\beta_0$                   | = | Constant Term                            |
| $\beta_1, \beta_2, \beta_3$ | = | Coefficient of the independent variables |
| $\mu$                       | = | Error Term                               |
|                             |   | $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0$  |

Hypothesis two which states that Real interest rate does not have positive and significant impact on deposit mobilization in Nigeria, it will be represented as:

$$TDV = \beta_0 + \beta_1 RDPR + \beta_2 GDP + \beta_3 BRCH + \mu \dots\dots\dots (iii)$$

Where;

|                             |   |                                          |
|-----------------------------|---|------------------------------------------|
| <i>TDV</i>                  | = | Total Deposit Volume                     |
| <i>RDPR</i>                 | = | Real Deposit Rate                        |
| <i>GDP</i>                  | = | Gross Domestic Product                   |
| <i>BRCH</i>                 | = | Total Bank Branch                        |
| $\beta_0$                   | = | Constant Term                            |
| $\beta_1, \beta_2, \beta_3$ | = | Coefficient of the independent variables |
| $\mu$                       | = | Error Term                               |
|                             |   | $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0$  |

Following a detailed review of previous studies by Ehrmann *et al.*, (2003), De Gregorio and Sturzenegger (1997) and specifically Usman (1999) Loan and Advances is expressed as a function of rate of interest, macroeconomic factors and bank specific factors set as control variables and this is expressed by the equation below;

$$LOA = f(INTR, GDP, TVD) \dots\dots\dots (iv)$$

However, in line with hypotheses stated, the model was modified as follows: For hypothesis three which states that Nominal interest rate does not have positive and significant impact on commercial bank lending in Nigeria.

It will be represented as:

$$LOA = \beta_0 + \beta_1 NLDR + \beta_2 GDP + \beta_3 TVD + \mu \dots\dots\dots (v)$$

Where;

|                             |   |                                          |
|-----------------------------|---|------------------------------------------|
| <i>LOA</i>                  | = | Loans and Advances                       |
| <i>NLDR</i>                 | = | Nominal Lending Rate                     |
| <i>GDP</i>                  | = | Gross Domestic Product                   |
| <i>TVD</i>                  | = | Total Volume of Deposit                  |
| $\beta_0$                   | = | Constant Term                            |
| $\beta_1, \beta_2, \beta_3$ | = | Coefficient of the independent variables |
| $\mu$                       | = | Error Term                               |
|                             |   | $\beta_1 < 0, \beta_2 > 0, \beta_3 > 0$  |

Hypothesis four which states that Real interest rate does not have positive and significant impact on commercial bank lending in Nigeria, it will be represented as:

$$LOA = \beta_0 + \beta_1 RLDR + \beta_2 GDP + \beta_3 TVD + \mu \dots\dots\dots (vi)$$

Where;

|                             |   |                                          |
|-----------------------------|---|------------------------------------------|
| <i>LOA</i>                  | = | Loans and Advances                       |
| <i>RLDR</i>                 | = | Real Lending Rate                        |
| <i>GDP</i>                  | = | Gross Domestic Product                   |
| <i>TVD</i>                  | = | Total Volume of Deposit                  |
| $\beta_0$                   | = | Constant Term                            |
| $\beta_1, \beta_2, \beta_3$ | = | Coefficient of the independent variables |
| $\mu$                       | = | Error Term                               |
|                             |   | $\beta_1 < 0, \beta_2 > 0, \beta_3 > 0$  |

### **3.4 Description of Explanatory Variable**

#### **3.4.1 Dependent Variables**

##### **Total Deposit Volume**

The deposit represent the money in the funds of the banks various deposit schemes. They include savings deposit, fixed deposit and demand deposit. The deposit funds of commercial banks are collectively called deposit liabilities. In Nigeria, the greater portion of commercial deposits is demand deposits. For example, between 1996 and 2000, 46.4% of total commercial bank deposit is made up of demand deposit while time and savings deposits averaged 31.6% and 22% respectively.

##### **Loans and Advances**

The term 'loan may be regarded as 'credit' granted where the money is disbursed and its recovery is made on a later date. It is a debt for the borrower. While granting loans, credit is given for a definite purpose and for a predetermined period. Interest is charged on the loan at agreed rate and intervals of payment. 'Advance' on the other hand, is a 'credit facility' granted by the bank. Banks grant advances largely for short-term purposes, such as purchase of goods traded in and meeting other short-term trading liabilities. There is a sense of debt in loan, whereas an advance is a facility being availed of by the borrower. However, like loans, advances are also to be repaid. Thus a credit facility- repayable in instalments over a period is termed as loan while a credit facility repayable within one year may be known as advances. However, in the present lesson these two terms are used interchangeably. So this are credit granted by the commercial banks to the public, governments institution and corporate organization within or more than a year.

#### **3.4.2 Independent Variable**

##### **Interest Rate (nominal and real deposit rate)**

From the economic perspective it is important to differentiate between nominal and real interest rates. Nominal interest rates are the rates quoted in loan and deposit agreements. Real interest rates, on the other hand, are obtained by deflating the nominal rates, that is to say, by adjusting them for the decrease in the real value (i.e. purchasing power) of the borrowed or deposited funds over the duration of the loan or

deposit. The decrease in the real value of the funds over a given period is equal to the rate of inflation for that period.

### **3.4.3 Control Variables**

This study used other variables associated with either economic development. Two of these variables are included in the model as control. These are capital stock and trade ratio. The ratio of capital expenditure to nominal gross domestic product and the share of gross capital formation was used as proxy for the capital stock, while the trade ratio is defined as the ratio of the total value of exports and imports to the nominal gross domestic product.

### **3.5 Techniques of Analysis**

As observed from the model, the hypotheses was tested using Ordinary Least Square (OLS) regression analysis. Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, with a view to estimating and/or predicting the population mean or average value of the former in terms of the known or fixed (in repeated sampling) values of the latter (Gujarati and Porter, 2009).

### **3.6 Diagnostic Tests**

Diagnostic tests are to be performed to check for the validity of the parameters. The researcher is to test for multicollinearity, heteroscedasticity, autocorrelation and normality.

#### **3.6.1 Multicollinearity**

The term multicollinearity is due to Ragnar Frisch in 1934. Originally it meant the existence of a “perfect,” or exact, linear relationship among some or all explanatory variables of a regression model Gujarati and Porter (2009). If it exists the remedy is to drop a variable with a high  $R^2$  or do nothing.

$H_0$ : There is no perfect linear relationship among regressors.

$H_1$ : There is a perfect linear relationship among regressors.

#### **3.6.2 Heteroscedasticity**

According to Gujarati and Porter (2009) this is a situation whereby the error variances are not constant. This is a violation of one important assumption of the classical linear

regression assumptions. To detect heteroscedasticity the researcher employs the Whites test for heteroscedasticity. The problem of continuing to use data that suffers heteroscedasticity is that whatever conclusion or inferences, they will be misleading

H0: The variance of the error term is constant (homoscedastic).

H1: The variance of the error term is not constant (heteroscedastic).

### **3.6.3 Autocorrelation**

The violation of the basic assumption that residuals are mutually independent results in serial autocorrelation. In time series data the successive residuals will tend to be highly correlated. Autocorrelation can also be extended to cross section data where the residuals are correlated with those of the neighbouring units, Maddala (1977). The Durbin-Watson method is used to test for autocorrelation. A Durbin Watson statistic around two is generally accepted though there are zones of indifference and zones of both positive and negative correlation.

### **3.6.5 Normality**

The study uses BeraJarque(BJ) normality test for non-normality. From the result the study uses the value of kurtosis and p-value to identify whether normality exists or not. The null hypothesis is that the distribution is normal and the alternate hypothesis is that the distribution is not normally distributed. Therefore if the null hypothesis is rejected then the distribution is not normally distributed. The researcher had also used kurtosis value to test for non-normality and from the literature the normal distribution had a kurtosis value of 3. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3(Brooks, 2008). For the residuals to be normal jarquebera value should not be significant.

## REFERENCES

- Ajakaiye O. & Odusola A.F (1995). Real deposit rates and financial savings mobilization in Nigeria: An empirical tests. *Journal of Economic Management*, 2(2), 34-56
- Alasia, T. W. O. (2003). *Development of a model for predicting deposit mobilization of commercial banks in Nigeria*. Doctoral Dissertation, University of Nigeria, Enugu Campus.
- Brooks C. (2008). *Introductory econometrics for finance*. 2<sup>nd</sup> Ed, New York: Cambridge University Press
- De Gregorio, J. & Sturzenegger, F. (1997). Financial markets and inflation under imperfect information. *Journal of Development Economics*, 54(1), 149-168.
- Ehrmann, M., L Gambacorta, J Mart'inez-Pag'es, P Sevestre, P. & Worms, A. (2003). *Financia lsystems and the role of bank in monetary transmission in the Euro area*. In Angeloni,I, Kashyap, A., &Mojon, B., editors, *Monetary Transmission in the Euro Area: A Study by the Eurosystem Monetary Transmission Network*, pages 235-269. Cambridge University Press, Cambridge.
- Ezirim B. C. & Emenyonu, E. N. (1997). the financial market, intermediation function and economic efficiency: A paradigmatic Analysis. *Journal of Industrial, Business and Economic Research*, 1(1), 2-17
- Gujarati, D. N. & Porter D. C. (2009). *Basic econometrics*. Fifth Edition, Singapore: New Delhi: McGraw- Hill International Edition
- Kerlinger, F.N. (1973). *Foundations of behavioural research techniques in business and economics*. Eleventh Edition, Boston: McGraw-Hill Irwin
- Maddala G.S. (1977). *Econometrics*. New York: McGraw-Hill.
- Ojo, O. (1984). *Financial intermediation and growth*. University of Ife Inaugural Lecture; University of Ife Press, Ile-Ife. Odedokun
- Onwumere, J.U. J. (2005). *Business and economic research method*. Lagos: Don-Vinton Limited
- Usman, S. (1999). *Bank regulation and supervision in Nigeria*. *The Nigerian Banke*, 13(5):67-81
- Yomere, G. O. & Agbonifoh, B. A. (1999). *Research methodology in the management and social sciences*. Benin: Uniben Press

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Data Presentation

The data presented below are those considered necessary for the analyses of the various objectives specified in the study to validate the formulated hypotheses. Table 4.1 shows the Total Deposit Volume, Nominal Interest Rate, Real Interest Rate and Loan and Advances collated from the Central Bank of Nigeria statistical bulletin from 1986-2016.

**Table 4.1: Values of Total Deposit Volume, Loan and Advances, Interest (deposit and lending) Rates**

| YR   | TDV     | LOA     | RDPR  | RDPR   | NLDR  | RLDR   | GDP   | BRCH |
|------|---------|---------|-------|--------|-------|--------|-------|------|
| 1986 | 39.7    | 15.6    | 9.24  | -1.5   | 9.96  | 2.29   | 20.7  | 1367 |
| 1987 | 49.8    | 17.7    | 13.09 | -31.92 | 13.96 | 7.81   | 24.1  | 1483 |
| 1988 | 58      | 19.7    | 12.95 | -5.13  | 16.62 | -44.71 | 23.3  | 1665 |
| 1989 | 64.9    | 22.3    | 14.68 | -16.96 | 20.44 | -17.87 | 24.2  | 1855 |
| 1990 | 83      | 26.6    | 19.78 | 14.65  | 25.3  | 21.89  | 30.8  | 1939 |
| 1991 | 117.5   | 30.5    | 14.92 | 2.07   | 20.04 | -2.95  | 27.4  | 2023 |
| 1992 | 159.2   | 41.2    | 18.04 | -25.77 | 24.76 | -19    | 29.3  | 2275 |
| 1993 | 226.2   | 48.2    | 23.24 | 4.37   | 31.65 | -42.94 | 15.8  | 2358 |
| 1994 | 295     | 92      | 13.09 | -8.03  | 20.48 | -55.76 | 18.1  | 2403 |
| 1995 | 385.1   | 141.7   | 13.53 | -43.57 | 20.23 | -31.41 | 28.5  | 2368 |
| 1996 | 458.8   | 171.6   | 13.06 | -9.71  | 19.84 | 5.42   | 35    | 2407 |
| 1997 | 584.4   | 238.2   | 7.17  | 16.61  | 17.8  | 3.33   | 35.8  | 2407 |
| 1998 | 694.6   | 271.7   | 10.11 | 25.28  | 18.18 | 6.38   | 32    | 2185 |
| 1999 | 1070    | 350.6   | 12.81 | 2.77   | 20.29 | 21.1   | 35.9  | 2185 |
| 2000 | 1568.8  | 480     | 11.69 | -10.32 | 21.27 | 3.45   | 46.4  | 2193 |
| 2001 | 2247    | 817.7   | 15.26 | 23.84  | 23.44 | 1.8    | 44.1  | 2193 |
| 2002 | 2766.9  | 931.1   | 16.67 | -10.81 | 24.77 | 12.68  | 59.1  | 3010 |
| 2003 | 3047.9  | 1183    | 14.22 | 8.61   | 20.71 | -3.1   | 67.7  | 3247 |
| 2004 | 3753.3  | 1494.6  | 13.7  | 19.37  | 19.18 | 9.17   | 87.8  | 3492 |
| 2005 | 4515.1  | 1936.6  | 10.53 | -3.34  | 17.95 | 6.38   | 112.2 | N/A  |
| 2006 | 7172.9  | 2528.6  | 9.74  | -0.37  | 16.9  | 8.71   | 145.4 | 3233 |
| 2007 | 10981.7 | 4732.9  | 10.29 | 11.61  | 16.94 | 10.37  | 166.5 | 4200 |
| 2008 | 15919.6 | 7649.6  | 11.97 | 4.19   | 15.48 | 0.08   | 208.1 | 4952 |
| 2009 | 17522.9 | 9357.6  | 13.3  | 23.71  | 18.36 | 5.06   | 169.5 | 5436 |
| 2010 | 17331.6 | 8828.4  | 6.52  | -42.31 | 17.59 | 5.79   | 369.1 | 5809 |
| 2011 | 19396.6 | 9101.2  | 5.7   | 5.94   | 16.02 | 5.55   | 411.7 | 5454 |
| 2012 | 21288.1 | 9775.1  | 8.41  | 6.88   | 16.79 | 4.98   | 461   | 5564 |
| 2013 | 24301.2 | 10767.0 | 7.95  | 10.25  | 16.72 | 4.72   | 515   | 5639 |
| 2014 | 27526.4 | 12664.7 | 9.34  | 11.36  | 16.55 | 6.55   | 568.5 | 5526 |
| 2015 | 28173.3 | 13011   | 9.15  | 13.6   | 16.85 | 8.85   | 481.1 | 5470 |
| 2016 | 31682.8 | 15855.8 | 7.5   | 6.69   | 16.87 | 7.87   | 404.7 | 5570 |
| 2017 | 31721   | 147823  | 8.9   | 8.79   | 18.12 | 7.89   | 406.8 | 5587 |

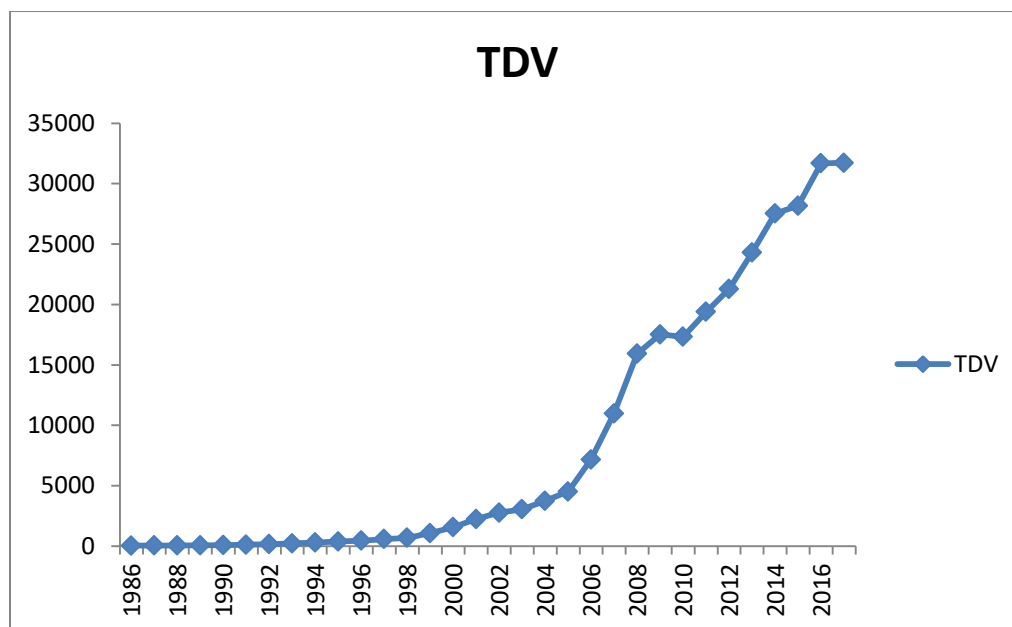
**Source: CBN Statistical Bulletin, 2018**

**Note:** *TDV* = Total Deposit Volume, *NDPR* = Nominal Deposit Rate, *RDPR*= Real Deposit Rate, *INFR* = *GDP* = Gross Domestic Product, *BRCH* = Total Bank Branches, *LOA* = Loan and Advances, *NLNR* = Nominal Lending Rate and *RLNR*= Real Lending Rate.

### **Total Deposit Volume Trend**

From table 4.1 above, the report made by the central bank of Nigeria (CBN), recorded the total deposit volume of commercial banks value of N39,679million at the beginning of the deregulation period in 1986. The later part of the late 1980s particularly 1987, total deposit volume recorded N49,828million, representing a drastic rise of 25.60% when compared to the 1986's figure. Umoh (2005) contends 'that The Structural Adjustment Programme (SAP) introduced in 1986 led to the robust growth rate of the intermediation function of Nigerian commercial banks. It continued to rise minimally from 1988 to 2009 showing maximum 58% rise in the year 2006 at a value of N7,172,932 million from the previous year. Umoh's assertion perfectly conformed to the upward movement of deposit volume in the figure 4.1 especially from 1999, depicting that increased economic activities culminated into higher amounts of mobilized deposits.

In addition to the aforementioned economic scenario, the 2004 re-capitalization reform also reinvigorated competitiveness in banking business that resulted in rapid growth of financial intermediation, vis a vis, growth in Deposits with the ultimate goal of achieving corresponding growth in Output. It fluctuated downward in 2010 with a decrease of 1.09 and no doubt, this reflects the recessionary effect of the global financial crises commonly referred to as 'global meltdown. Deposit volume increased again in 2011 and 2012 to a value of N18,767,438 million and N20,477,372 million at an increase of 8.3% and 9.1% respectively. See figure 4.1 for more details on the trend exhibiting a quick recovering from 2010 assumed influence of the global meltdown on banks' intermediation function.



**Figure 4.1: Graphical Representation of Commercial Banks’ Total Deposit Volume from 1986-2017**

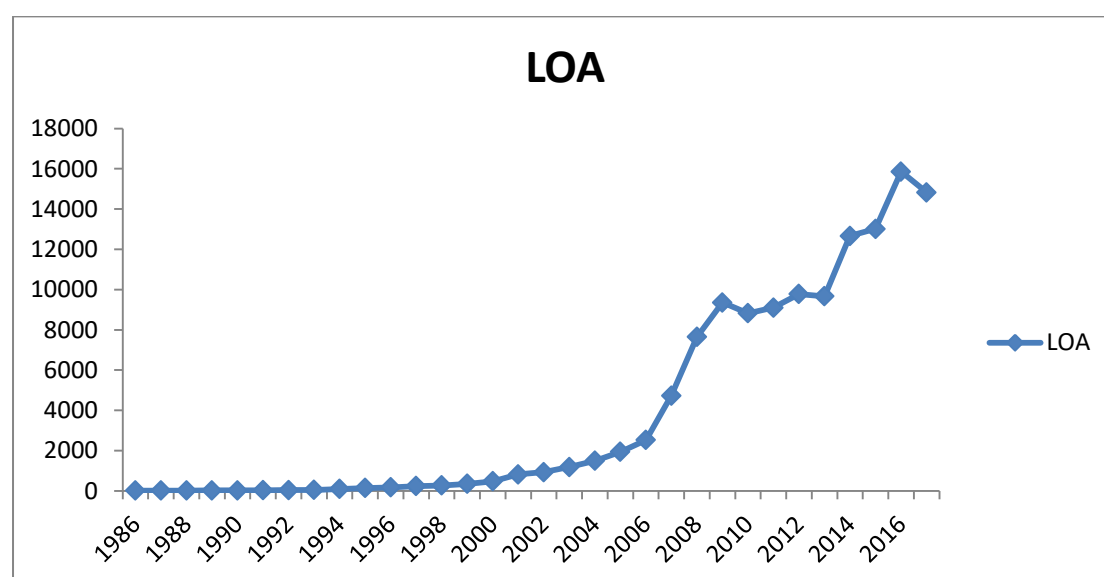
**Source: Researcher’s Microsoft Excel Result, 2018**

#### **Loan and Advances Trend**

From table4.1 above, the report made by the central bank of Nigeria (CBN), recorded the total Loan and Advances of commercial banks value of N15,702million at the beginning of the deregulation period in 1986. In 1987, Loan and Advances recorded N17,532million, representing rise of 11.7% when compared to the 1986’s figure. Umoh (2005) contends ‘that The Structural Adjustment Programme (SAP) introduced in 1986 led to the robust growth rate of the intermediation function of Nigerian commercial banks. It continued to rise with fluctuation in some years especially from 1989 to 1997 showing an unprecedented 127% rise in the year 1997 at a value of N385,551million from the previous year. This could be explained by the fact that in recognition of the need for enhanced efficiency of resource allocation in the economy, the prolonged use of policy of sectoral credit allocation was phased out in stages in 1996, and was replaced by an incentive system which encourages banks’ voluntary lending to the priority sectors. In line with the need to realign the interest rate regime with the policy of financial market deregulation, the cap on interest rates which was imposed since 1994, was removed with effect from 1st October, 1996. The abolition of mandatory bank credit allocation to the preferred sectors remained in force since

1997. However, banks were enjoined to continue to provide adequate credit to the growth sectors of the economy, including loans to rural borrowers and small-scale enterprises.

In 1998, the total loan and advances fell by -29.2% to a value N272, 896 million but after that continually witness a positive increase till 2009. The fall in lending volume in 1998 may not be far from the closure of 26 commercial banks by the CBN. Most of the banks were liquidated as a result of fraud, mismanagement, undercapitalization and the country economic crises. In addition to the aforementioned economic scenario, the 2004 re-capitalization reform also reinvigorated competitiveness in banking business that resulted in rapid growth of financial intermediation, vis a vis, growth in Lending with the ultimate goal of achieving corresponding growth in Output. It fluctuated downward in 2010 and 2011 with a decrease of -13.5 and -4% at a value of N7, 706, 430 million and N7, 400, 028 million respectively and no doubt, this reflects the recessional effect of the global financial crises commonly referred to as 'global meltdown. Loan and Advances increased again in 2012 to a value of N7,800,899 million at an increase of 5.4%. This trend continue till 2017. See figure 4.2 for more details on the trend.



**Figure 4.2: Graphical Representation of Commercial Banks' Loan and Advances from 1986-2017**

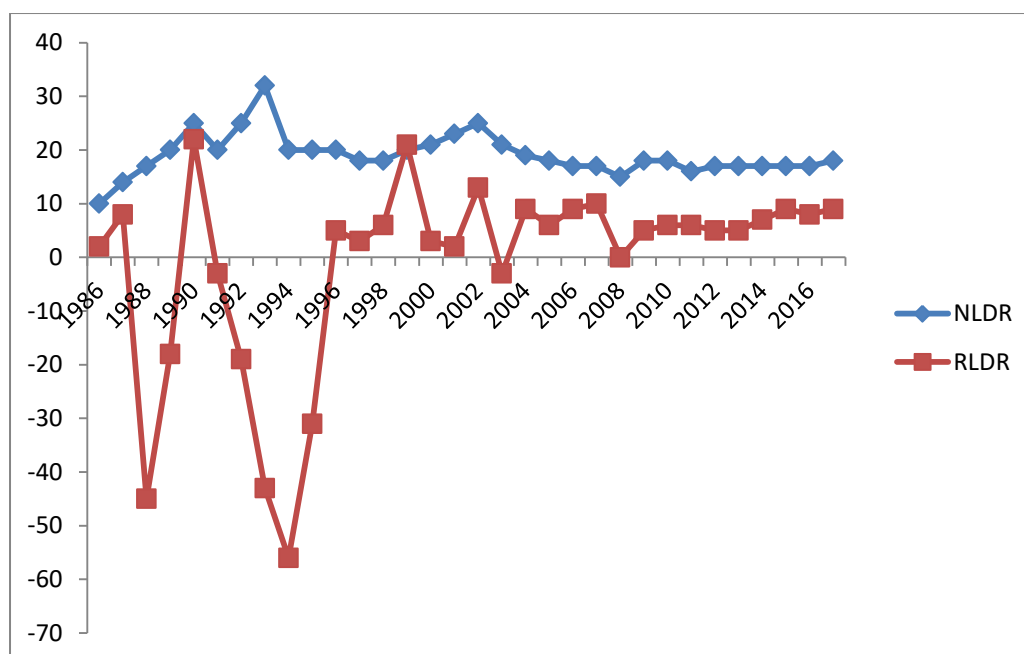
**Source: Researcher's Microsoft Excel Result, 2018**

### **Nominal Deposit Rate and Real Deposit Rate Trend**

From table 4.1 the nominal deposit rate was at 9.50% and the real deposit rate 1.29% in the beginning of the deregulation period of 1986. The later part of the late 1987 to 1990 saw a consistent increase in value of nominal deposit rate and may be possibly as a result the CBNs minimum rediscount rate, which was reduced from initial 15 percent to 12.75percent. The reduction in the minimum rediscount of the lending rate meant a reduction of the lending rate of commercial banks by anything between 2 and 3 percent points. The real deposit rate rose in 1987 to 4.31% from the previous year. It plummeted in 1988 and 1989 to -46.71% and -28.27% respectively but increased again in 1990 to 15.19%. After 1990 real deposit rate continuously remained on the negative part till 2017 although with fluctuations in values and this may be caused by periods of unprecedented level of inflation in the country.

The nominal deposit rate fell in 1991 to 14.29% from the previous year and this is accounted by the CBN introduction limits to interest rates which generally moved downward as a result of the policy. The nominal deposit rate increased in 1992 and 1993 to 16.10% and 16.66% respectively and began to fall from 1994 value of 13.50 to 1997 values of 4.80%. In 1994, some measures of regulation were introduced in the management of the interest rates. Deposit rates were set at 12-15 percent per annum. In 1995, the central bank maintained the interest rates regime introduced in 1994 with minor modifications to make for flexibility. In 1996 and 1997, the previous interest rate policy measures were retained with indication that effort would be made to create an enabling environment for the full deregulation of interest rate later.

In 1998, the nominal interest rate rose a little above the previous year with an average value 5.49% but started to fall again from 1999 with a value of 5.33% to a lowest value of 1.41 in 2011-2016. The implications of the “tunnel-like” structure of interest rates or the low deposit rates are that savings will likely be discouraged, and this will negatively affect funds mobilisation by the banks. See figure 4.2 for diagrammatical representation.



**Figure 4.3: Graphical Representation of Commercial Banks' Nominal and Real Deposit Rate Trend from 1986-2017**

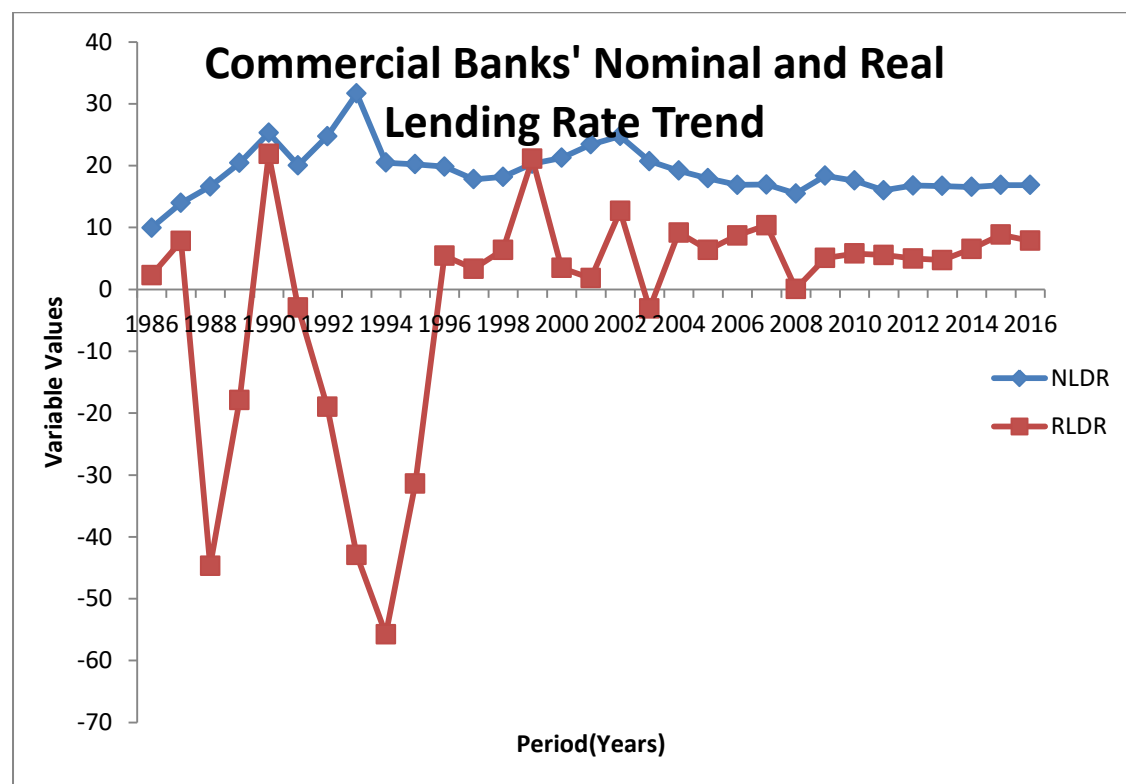
**Source: Researcher's Microsoft Excel Result, 2018**

#### **Nominal Lending Rate and Real Lending Rate Trend**

From table 4.1 the nominal lending rate was at 10.5% and the real lending rate 2.29% in the beginning of the deregulation period of 1986. The later part of the late 1987 to 1990 saw a consistent increase in value of nominal lending rate and may be possibly as a result the CBNs minimum rediscount rate, which was reduced from initial 15 percent to 12.75percent. The reduction in the minimum rediscount of the lending rate meant a reduction of the lending rate of commercial banks by anything between 2 and 3 percent points. The real lending rate rose in 1987 to 7.81% from the previous year. It plummeted in 1988 and 1989 to -44.71% and -17.87% respectively but increased again in 1990 to 21.89%.

After 1990 real lending rate continuously remained on the negative part till 1995 although with fluctuations in values and this may be caused by periods of unprecedented level of inflation in the country. It rose from 1996 to 2002 and could be explained by the removal of compulsory lending to some priority sector of the economy in 1996 which continued till late 1998. The real lending rate fell again in 2003 by -3.1% but started on the positive from 2004 to 2016

In 1995, the central bank maintained the interest rates regime introduced in 1994 with minor modifications to make for flexibility. In 1996 and 1997, the previous interest rate policy measures were retained with indication that effort would be made to create an enabling environment for the full deregulation of interest rate later. All this allowed the nominal rate to remain positive and this continued till 2012. See figure 4.4 for diagrammatical representation.



**Figure 4.4: Graphical Representation of Commercial Banks' Nominal and Real Lending Rate Trend from 1986-2017**

**Source: Researcher's Microsoft Excel Result, 2018**

## 4.2. Diagnostic Test

Before regression analysis and hypothesis testing, heteroskedasticity, autocorrelation and normality are tested to know if the assumptions of CLRM are violated or not. Accordingly, the output of the tests which are displayed by EViews software are presented and interpreted.

### 4.2.1 Multicollinearity test.

The results for the test for severe multicollinearity are presented in the correlation matrix in table 4.2:

The results showed that the problem of multicollinearity did not exist because all the correlation coefficients were within the recommended range of no multicollinearity which is -0.8 to 0.8. Hence all the variables were retained for use in estimations. In the above correlation matrix there is no pair-wise relation that exceeds 0.8 which compels the researcher to reject the alternative hypothesis (H0) which supposes that pair-wise relationship among regressors exists and we do not reject the null hypothesis (H1) which supposes that there is no perfect pair-wise relation among regressors. The correlation matrix shows tests results for multicollinearity where diagonal entries shows a variable's own correlation whilst the off-diagonal entries shows pair-wise correlations between different explanatory variables (multicollinearity). All of the off-diagonal entries are below 0.8 which is not suggestive of multicollinearity.

**Table 4.2: Correlation matrix**

|           | NDPR   | RDPR  | NLDR   | RLDR  | LOG<br>(TDV) | LOG<br>(GDP) | LOG<br>(BRCH) |
|-----------|--------|-------|--------|-------|--------------|--------------|---------------|
| NDPR      | 1.000  |       |        |       |              |              |               |
| RDPR      | -0.313 | 1.000 |        |       |              |              |               |
| NLDR      | 0.364  | 0.356 | 1.000  |       |              |              |               |
| RLDR      | -0.108 | 0.970 | -0.023 | 1.000 |              |              |               |
| LOG(TDV)  | -0.804 | 0.234 | 0.222  | 0.285 | 1.000        |              |               |
| LOG(GDP)  | -0.589 | 0.224 | 0.336  | 0.225 | 0.914        | 1.000        |               |
| LOG(BRCH) | -0.576 | 0.326 | 0.326  | 0.263 | 0.905        | 0.980        | 1.000         |

**Source:** Researcher's Eview Result 2018

#### 4.2.2 Heteroskedasticity Test

The test of heteroskedasticity is a test of the second assumption of OLS estimator that says the variance of errors is constant. The researcher uses Breusch Godfrey test (BG test) to test for heteroskedasticity.

$H_0$ : The assumption that there exists homoskedasticity

$H_1$ : There is no homoscedasticity (there is heteroskedasticity)

**Table 4.3: Heteroscedasticity Test for the First and Second Hypothesis**

White Heteroskedasticity Test:

|               |          |             |          |
|---------------|----------|-------------|----------|
| F-statistic   | 1.346650 | Probability | 0.332634 |
| Obs*R-squared | 11.98807 | Probability | 0.285856 |

**Source:** Researcher's Eview Result 2018

From the table 4.3 above, it is observed that the Obs ( $R^2$ ) of 11.98 is not significant at a probability value of 0.29 at a critical value of 0.05 hence the model is free from heteroscedasticity and it is correctly specified.

**Table 4.4: Heteroscedasticity Test for the Third and Fourth Hypothesis**

White Heteroskedasticity Test:

|               |          |             |          |
|---------------|----------|-------------|----------|
| F-statistic   | 1.300966 | Probability | 0.303780 |
| Obs*R-squared | 9.891977 | Probability | 0.272690 |

**Source:** Researcher's Eview Result 2018

From the table 4.4 above, it is observed that the Obs ( $R^2$ ) of 9.89 is not significant at a probability value of 0.27 at a critical value of 0.05 hence the model is free from heteroscedasticity and it is correctly specified as shown in table 4.4 above.

**4.2.3. Autocorrelation Test**

The Durbin-Watson test only tests the first order autocorrelation. For further test of autocorrelation the researcher uses Breusch-Godfrey test so that the autocorrelation that are not detected by DW test will be found. Moreover, BG tests the autocorrelation of the residual and several lagged values of it.

Ho: There is no autocorrelation

H1: There is autocorrelation

**Table 4.5: Autocorrelation Test for the First Hypothesis**

Breusch-Godfrey Serial Correlation LM Test:

|                    |          |             |          |
|--------------------|----------|-------------|----------|
| F-statistic        | 3.805360 | Probability | 0.202175 |
| Obs*R-squared      | 5.669322 | Probability | 0.202924 |
| Durbin-Watson stat | 1.988684 |             |          |

**Source:** Researcher's Eview Result 2018

From the table 4.5 above, we observe a DW test value of 1.9 which falls in the no autocorrelation zone (see table 4.9) and that leads us to conclude there is no evidence of the presence of autocorrelation. The test of autocorrelation of the residuals and two lagged value of it, Breusch-Godfrey test(BG test) with the observed  $R^2$  valued of 5.66 with a probability of 0.20 and this proved that there is no autocorrelation at an AR(2). The two type of test both fails to reject the null hypothesis of no autocorrelation. Therefore, given these result in table 4.5, it can be concluded that there is no evidence for the existence of autocorrelation.

**Table 4.6: Autocorrelation Test for the Second Hypothesis**

Breusch-Godfrey Serial Correlation LM Test:

|                    |          |             |          |
|--------------------|----------|-------------|----------|
| F-statistic        | 5.82395  | Probability | 0.300020 |
| Obs*R-squared      | 4.73482  | Probability | 0.356383 |
| Durbin-Watson stat | 2.191384 |             |          |

**Source:** Researcher's Eview Result 2018

From the table 4.6 above, we observe a DW test value of 2.1 which falls in the no autocorrelation zone (see table 4.9) and that leads us to conclude there is no evidence of the presence of autocorrelation. The test of autocorrelation of the residuals and two lagged value of it, Breusch-Godfrey test(BG test) with the observed  $R^2$  valued of 4.73 with a probability of 0.35 and this proved that there is no autocorrelation at an AR(2). The two type of test both fails to reject the null hypothesis of no autocorrelation. Therefore, given these result as presented in table 4.5, it can be concluded that there is no evidence for the existence of autocorrelation.

**Table 4.7: Autocorrelation Test for the Third Hypothesis**

Breusch-Godfrey Serial Correlation LM Test:

|                    |          |             |          |
|--------------------|----------|-------------|----------|
| F-statistic        | 0.769412 | Probability | 0.475910 |
| Obs*R-squared      | 1.843408 | Probability | 0.397841 |
| Durbin-Watson stat | 1.627791 |             |          |

**Source:** Researcher's Eview Result 2018

From the table 4.7 above, we observe a DW test value of 1.6 which falls in the indecision zone (see table 4.9) and that leads us to conclude there is no evidence of the presence of autocorrelation. The test of autocorrelation of the residuals and two lagged value of it, Breusch-Godfrey test(BG test) with the observed  $R^2$  valued of 1.8 with a probability of 0.39 and this proved that there is no autocorrelation at an AR(2). The two type of test both fails to reject the null hypothesis of no autocorrelation. Therefore, given these result as outline in table 4.8, it can be concluded that there is no evidence for the existence of autocorrelation.

**Table 4.8: Autocorrelation Test for the Fourth Hypothesis**

Breusch-Godfrey Serial Correlation LM Test:

|                    |          |             |          |
|--------------------|----------|-------------|----------|
| F-statistic        | 0.494120 | Probability | 0.673911 |
| Obs*R-squared      | 1.543508 | Probability | 0.527840 |
| Durbin-Watson stat | 2.185837 |             |          |

**Source:** Researcher's Eview Result

From the table 4.8 above, the DW test value is 2.1 which falls in the no autocorrelation zone (see table 4.9) and that leads us to conclude there is no evidence of the presence of autocorrelation. The test of autocorrelation of the residuals and two lagged value of it, Breusch-Godfrey test(BG test) with the observed  $R^2$  valued of 1.5 with a probability of 0.52 and this proved that there is no autocorrelation at an AR(2). The two types of test both fails to reject the null hypothesis of no autocorrelation. Therefore, given these result it can be concluded that there is no evidence for the existence of autocorrelation.

**Table 4.9: Durbin Watson Autocorrelation Test Decision Zone**

| Positive autocorrelation    | Zone of indecision            | No autocorrelation            | Zone of indecision            | Negative autocorrelation    |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|
| 0 $\longleftrightarrow$ 0.7 | 0.8 $\longleftrightarrow$ 1.8 | 1.9 $\longleftrightarrow$ 2.1 | 2.2 $\longleftrightarrow$ 3.8 | 3.9 $\longleftrightarrow$ 4 |

**Source:** Gujarati and Porter (2009)

#### 4.2.4 Normality Test

Ho: The residuals are normally distributed

H1: The residuals are not normally distributed

Bera-Jarque normality tests have been used for normality test. Jarque-Bera's of the variables indicates that the residuals are normally distributed having p-values which are greater than 0.05. The p-value given at the middle of the normality test table showed that the variables are bigger than 0.05 to fail to reject the null hypothesis at the 5% level (Brooks, 2008). So we accept the null hypothesis of the presence of normality therefore rejecting the alternate of no normality presence.

**Table 4.10: Normality test of the multiple regression models**

|                    | LOG (TDV) | LOG (LOA) | NDPR | RDPR | NLDR | RLDR | LOG (GDP) | LOG (BRCH) |
|--------------------|-----------|-----------|------|------|------|------|-----------|------------|
| <b>Jarque-Bera</b> | 1.5       | 1.7       | 2.2  | 2.2  | 0.4  | 3.1  | 1.8       | 0.2        |
| <b>Probabiliy</b>  | 0.5       | 0.4       | 0.3  | 0.3  | 0.8  | 0.2  | 0.4       | 0.9        |
| <b>Observ</b>      | 21        | 21        | 21   | 21   | 21   | 21   | 21        | 21         |

**Source:** Researcher's Eview Result 2018

### 4.3 Test of Hypotheses

The hypotheses stated earlier in this research are subjected to testing using regression method. Three steps are used to test the hypotheses. In step one; the hypotheses are restated in null and alternate forms. In step two, the results are analysed while in step three, decisions were made. The decision rule involved the rejection or acceptance of the null or alternate hypotheses based on criterion of the techniques of analysis.

#### 4.3.1 Test of Hypothesis One

##### Restatement of the Hypothesis in Null and Alternate forms:

$H_{01}$ : Nominal interest rate does not have positive and significant impact on commercial bank deposit mobilization in Nigeria.

$H_{a1}$ : Nominal interest rate has positive and significant impact on commercial bank deposit mobilization in Nigeria.

##### Decision Rule

The decision rule that  $H_{01}$  should be rejected if the coefficient is positive, and the probability less than 0.05.

##### Presentation and Analysis of Result

To test for this hypothesis we shall use table 4.11 which evaluate the impact of Nominal interest rate on commercial bank deposit mobilization in Nigeria. The table showed the variables, the coefficient, standard error, t-statistics and probability as so analyzed.

**Table 4.11: Regression Result of Hypothesis One**

Dependent Variable: LOGTDV

Method: Least Squares

Date: 09/07/19 Time: 06:50

Sample: 1986 2017

Included observations: 31

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | -155.3252   | 56.05626              | -2.770880   | 0.0100   |
| RDPR               | -0.839944   | 0.665616              | -1.261903   | 0.2178   |
| LOGGDP             | 165.9590    | 72.32572              | 2.294605    | 0.0298   |
| LOGBRACH           | -15.98505   | 68.88454              | -0.232056   | 0.8182   |
| R-squared          | 0.854926    | Mean dependent var    |             | 332.8387 |
| Adjusted R-squared | 0.838807    | S.D. dependent var    |             | 152.7720 |
| S.E. of regression | 61.33628    | Akaike info criterion |             | 11.19053 |
| Sum squared resid  | 101577.7    | Schwarz criterion     |             | 11.37556 |
| Log likelihood     | -169.4533   | Hannan-Quinn criter.  |             | 11.25085 |
| F-statistic        | 53.03725    | Durbin-Watson stat    |             | 2.304182 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

**Source:** Researcher's Eview Result 2018

Clearly, the result of the regression above showed that NDPR, LOG (GDP) and LOG (BRCH) are directly related to LOG (TDV). It shows that as nominal deposit rate increases by 1 unit, volume of deposit increases by 0.13 units, as gross domestic product increase by 1 unit volume of deposit increases by 4.7 units and as the number of bank branches increases by a unit volume of deposit increases by 3.1 units. These results conform to economic a priori expectation because it is naturally expected that an increase in NDPR will motivate depositors to postpone immediate consumption and save their financial wealth and LOG (GDP) and LOG (BRCH) shows that as the economy grows and branches increases, the volume of deposits increases in commercial banks. It is important to note that NDPR, LOG (GDP) and LOG (BRCH) are statistically significant with a p-value of 0.005, 0.000 and 0.005 which is less than 0.05 critical values signifying that the impact of the variables has been strongly or possibly the coefficient not statistically equal to zero.

The  $R^2$  is the summary measure that tells us how well the sample regression line fits the data. From the model above,  $R^2$  of 0.85 means that 85% variation in volume of deposit was explained by changes nominal deposit rate, GDP and number of bank branches and the remaining 8% were explained by variables not included in the model. The adjusted  $R^2$  take account of more number of regressors if included and it explains 91% variations in the dependent variable. The F-value of (62.5) which follows the F distribution with a degree of freedom numerator of 3 and a degree of freedom denominator of 20 is significant (P-value = 0.000) at a critical value of 0.05. This implies that the entire model is significant.

### **Decision**

We refer to our decision that  $H_{01}$  should be rejected if the coefficient is positive, and the probability less than 0.05. Based on decision rule the researcher accepts the alternate and rejects the null hypothesis. The researcher therefore concludes that nominal interest rate has positive and significant impact on commercial bank deposit mobilization in Nigeria.

#### 4.3.2 Test of Hypothesis Two

##### Step One: Restatement of the Hypothesis in Null and Alternate forms:

**H<sub>02</sub>:** Real interest rate does not have positive and significant impact on deposit mobilization in Nigeria

**H<sub>a2</sub>:** Real interest rate has positive and significant impact on deposit mobilization in Nigeria

##### Step Two: Decision Rule

The decision rule that **H<sub>02</sub>** should be rejected if the coefficient is positive and the probability less than 0.05.

##### Step Three: Presentation and Analysis of Result

To test for this hypothesis we shall use table 4.12 which evaluate the impact of Nominal interest rate on commercial bank deposit mobilization in Nigeria. The table showed the variables, the coefficient, standard error, t-statistics and probability as so analyzed.

**Table 4.12: Regression Result of Hypothesis Two**

Dependent Variable: LOGTDV

Method: Least Squares

Date: 09/07/19 Time: 06:50

Sample: 1986 2017

Included observations: 32

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | -155.3252   | 56.05626              | -2.770880   | 0.0100   |
| RDPR               | -0.839944   | 0.665616              | -1.261903   | 0.2178   |
| LOGGDP             | 165.9590    | 72.32572              | 2.294605    | 0.0298   |
| LOGBRACH           | -15.98505   | 68.88454              | -0.232056   | 0.8182   |
| R-squared          | 0.854926    | Mean dependent var    |             | 332.8387 |
| Adjusted R-squared | 0.838807    | S.D. dependent var    |             | 152.7720 |
| S.E. of regression | 61.33628    | Akaike info criterion |             | 11.19053 |
| Sum squared resid  | 101577.7    | Schwarz criterion     |             | 11.37556 |
| Log likelihood     | -169.4533   | Hannan-Quinn criter.  |             | 11.25085 |
| F-statistic        | 53.03725    | Durbin-Watson stat    |             | 2.304182 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

**Source:** Researcher's Eview 9 Result output 2018

Clearly, the result of the regression above showed that RDPR, LOG (GDP) and LOG (BRCH) are directly causally related to LOG (TDV). It shows that as nominal deposit rate increases by 1 unit, volume of deposit increases by 0.006 units, as gross domestic product increase by 1 unit volume of deposit increases by 1.7 units and as the number of bank branches increases by a unit volume of deposit increases by 3.1 units. These results conform to economic *a priori* expectation because it is naturally expected that an increase in RDPR will motivate depositors to postpone immediate consumption and save their financial wealth having in mind they will gain in real interest and LOG (GDP) and LOG (BRCH) shows that as the economy grows and branches increases, the volume of deposits increases in commercial banks. It is important to note that NDPR is not statistically significant; while LOG (GDP) and LOG (BRCH) are statistically significant with a p-value of 0.5, 0.02 and 0.01 which is less than 0.05 critical values.

The  $R^2$  is the summary measure that tells us how well the sample regression line fits the data. From the model above,  $R^2$  of 0.85 means that 85% variation in volume of deposit was explained by changes in nominal deposit rate, GDP and number of bank branches and the remaining 17% were explained by variables not included in the model. The adjusted  $R^2$  take account of more number of regressors if included and it explains 80% variations in the dependent variable. The F-value of (26.7) which follows the F distribution with a degree of freedom numerator of 3 and a degree of freedom denominator of 20 is significant (P-value = 0.000) at a critical value of 0.05. This implies that the entire model is significant.

#### **Step Four: Decision**

We refer to our decision that  $H_0$  should be rejected if the coefficient is positive, and the probability less than 0.05. Based on decision rule the researcher accepts the null and rejects the alternate hypothesis. The researcher therefore concludes that Real interest rate does not have positive and significant impact on deposit mobilization in Nigeria.

### 4.3.3 Test of Hypothesis Three

#### Step One: Restatement of the Hypothesis in Null and Alternate forms:

**H<sub>03</sub>:** Nominal interest rate does not have positive and significant impact on commercial bank lending in Nigeria

**H<sub>a3</sub>:** Nominal interest rate has positive and significant impact on commercial bank lending in Nigeria

#### Step Two: Decision Rule

The decision rule that **H<sub>03</sub>** should be rejected if the coefficient is positive and the probability less than 0.05.

#### Step Three: Presentation and Analysis of Result

To test for this hypothesis we shall use table 4.13 which evaluate the impact of Nominal interest rate on commercial bank lending in Nigeria. The table showed the variables, the coefficient, standard error, t-statistics and probability as so analyzed.

**Table 4.13: Regression Result of Hypothesis Three**

Dependent Variable: LOGLOA

Method: Least Squares

Date: 09/07/19 Time: 07:06

Sample: 1986 2017

Included observations: 32

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 0.602652    | 0.100085              | 6.021398    | 0.0000    |
| LOGGDP             | 0.157155    | 0.064464              | 2.437856    | 0.0214    |
| LOGTDV             | 0.002326    | 0.000411              | 5.659113    | 0.0000    |
| LOGNLDR            | 1.264585    | 2.543839              | 0.864764    | 0.3948    |
| R-squared          | 0.936342    | Mean dependent var    |             | 1.880968  |
| Adjusted R-squared | 0.931795    | S.D. dependent var    |             | 0.516503  |
| S.E. of regression | 0.134890    | Akaike info criterion |             | -1.076945 |
| Sum squared resid  | 0.509471    | Schwarz criterion     |             | -0.938172 |
| Log likelihood     | 19.69265    | Hannan-Quinn criter.  |             | -1.031708 |
| F-statistic        | 205.9259    | Durbin-Watson stat    |             | 2.151817  |
| Prob(F-statistic)  | 0.000000    |                       |             |           |

**Source:** Researcher's Eview Result 2018

The result of the regression in table showed that LOG (NLDR) is negatively related to LOG (LOA) while LOG (GDP) and LOG (TDV) are directly causely related to LOG (LOA). It shows that as nominal lending rate increases by 1 unit, loan and advances decreases by 0.53 units, as gross domestic product increase by 1 unit, loan and advances increases by 0.13 units and as volume of deposit increases by a unit loan and advances increases by 0.90 units. These results conform to economic *a priori* expectation because it is expected that an increase in NLDR will discourage borrowers from obtaining credit in consideration of marginal increase in cost of doing business increase in LOG (GDP) will actually envisage greater opportunity for profit making the economy and LOG (LOA) shows as volume of deposits increases, commercial banks will be willing to give out loans. It is important to note that LOG (NLDR) and LOG (TDV) are statistically significant while LOG (GDP) is non – significant with a p-value of 0.001, 0.000 and 0.005 respectively which is less than 0.05 critical values signifying that the impact of the LOG (NLDR) and LOG (TDV) has been strong or possibly the coefficient is not statistically equal to zero while that of GDP is as good as being zero.

The  $R^2$  is the summary measure that tells us how well the sample regression line fits the data. From the model above,  $R^2$  of 0.602 means that 62% variation in volume of deposit was explained by changes nominal lending rate, GDP and volume of deposit and the remaining 2% were explained by variables not included in the model. The adjusted  $R^2$  take account of more number of regressors if included and it explains 60.2%% variations in the dependent variable. The F-value of (1932.1) which follows the F distribution with a degree of freedom numerator of 3 and a degree of freedom denominator of 20 is significant (P-value = 0.000) at a critical value of 0.05. This implies that the entire model is significant.

#### **Step Four: Decision**

We refer to our decision that  $H_{03}$  should be rejected if the coefficient is positive, and the probability less than 0.05. Based on decision rule the researcher accepts the null and rejects the alternate hypothesis. The researcher therefore concludes that nominal interest rate has negative and significant impact on commercial bank lending in Nigeria.

#### 4.3.4 Test of Hypothesis Four

##### Step One: Restatement of the Hypothesis in Null and Alternate forms:

**H<sub>04</sub>:** Real interest rate does not have positive and significant impact on lending of commercial banks in Nigeria

**H<sub>a4</sub>:** Real interest rate has positive and significant impact on lending of commercial banks in Nigeria

##### Step Two: Decision Rule

The decision rule that **H<sub>04</sub>** should be rejected if the coefficient is positive and the probability less than 0.05.

##### Step Three: Presentation and Analysis of Result

To test for this hypothesis we shall use table 4.14 which evaluate the impact of Nominal interest rate on commercial bank lending of commercial banks in Nigeria. The table showed the variables, the coefficient, standard error, t-statistics and probability as so analyzed.

**Table 4.14: Regression Result of Hypothesis Four**

Dependent Variable: LOGLOA

Method: Least Squares

Date: 09/07/19 Time: 07:09

Sample: 1986 2017

Included observations: 32

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 0.602652    | 0.100085              | 6.021398    | 0.0000    |
| LOGGDP             | 0.157155    | 0.064464              | 2.437856    | 0.0214    |
| LOGTDV             | 0.002326    | 0.000411              | 5.659113    | 0.0000    |
| LOGRLDR            | 3.126585    | 3.142839              | 0.864764    | 0.3948    |
| R-squared          | 0.936342    | Mean dependent var    |             | 1.880968  |
| Adjusted R-squared | 0.931795    | S.D. dependent var    |             | 0.516503  |
| S.E. of regression | 0.134890    | Akaike info criterion |             | -1.076945 |
| Sum squared resid  | 0.509471    | Schwarz criterion     |             | -0.938172 |
| Log likelihood     | 19.69265    | Hannan-Quinn criter.  |             | -1.031708 |
| F-statistic        | 205.9259    | Durbin-Watson stat    |             | 2.751817  |
| Prob(F-statistic)  | 0.000000    |                       |             |           |

**Source:** Researcher's Eview Result 2018

The result of the regression in table 4.14 shows that LOG (RLDR) is negatively related to LOG (LOA) while LOG (GDP) and LOG (TDV) are directly related to LOG (LOA). It shows that as real lending rate increases by 1 unit, loan and advances decreases by 0.07 units, as gross domestic product increase by 1 unit, loan and advances increases by 0.09 units and as volume of deposit increases by a unit loan and advances increases by 0.93 units. These results conform to economic *a priori* expectation because it is expected that an increase in RLDR will discourage borrowers from obtaining credit in consideration of marginal increase in cost of doing business, increase in LOG (GDP) will actually envisage greater opportunity for profit making in the economy and LOG (LOA) shows as volume of deposits increases, commercial banks will be willing to give out loans. It is important to note that LOG (TDV) is statistically significant while LOG (GDP) and LOG (RLDR) are non – significant with a p-value of 0.000, 0.47 and 0.08 respectively which is less than 0.05 critical values signifying that the impact of LOG (TDV) has been strong or possibly the coefficient is not statistically equal to zero while that of GDP and RLDR are as good as being zero.

The  $R^2$  is the summary measure that tells us how well the sample regression line fits the data. From the model above,  $R^2$  of 0.93 means that 93% variation in volume of deposit was explained by changes nominal lending rate, GDP and volume of deposit and the remaining 4% were explained by variables not included in the model. The adjusted  $R^2$  take account of more number of regressors if included and it explains 93% variations in the dependent variable. The F-value of (833.8) which follows the F distribution with a degree of freedom numerator of 3 and a degree of freedom denominator of 20 is significant (P-value = 0.000) at a critical value of 0.05. This implies that the entire model is significant.

#### **Step Four: Decision**

We refer to our decision that  $H_{04}$  should be rejected if the coefficient is positive, and the probability less than 0.05. Based on decision rule the researcher accepts the null and rejects the alternate hypothesis. The researcher therefore concludes that nominal interest rate has negative and non-significant impact on commercial bank lending in Nigeria.

#### **4.4 Implication of Findings**

This study examines the Impact of Interest Rate on Commercial Bank Lending and Deposit Mobilization in Nigeria from 1986 to 2016. Following a detailed time series data analysis, the findings revealed plausible results on the commercial bank lending and Deposit Mobilization. The implications of these findings are discussed in line with the objectives of this study.

##### **Objective One: To examine the impact of nominal interest rate on commercial bank deposit mobilization in Nigeria**

In the economy, banks and other financial institutions play a key role in the expenditure decisions of firms and households. They are among the most important alternatives of funding and means of saving. As such, banks and bank behavior are critical components of the transmission mechanism of monetary policy. In particular, the interest rate channel of monetary policy, which operates when banks transmit the changes in the monetary policy rate to their customers' interest rates, depends on the banks' reaction to different shocks and to the state of the economy. Hence, when setting monetary policy, the central bank takes into account banks' behavior under different economic conditions. The Central Bank of Nigeria over the years has adopted different monetary policy management techniques such interest rate deregulation to keep the economy in a stable state and enhance savings for investment. As revealed from the finding of this study, Nominal deposit rate had positive and significant impact on deposit mobilisation during the period under study. This is not consistent with studies by Giovannini (1983, 1985), Leite and Makonnen (1986), and Melo and Tybout (1986) on other countries but agrees with the McKinnon and Shaw hypothesis that private saving is significantly and positively interest-elastic in LDCs.

Thus, as the deposit rates of interest increases, commercial banks enjoy boosted deposit mobilization. This also suggests that commercial banks in order to boost their supply side intermediation activity should employ the pricing strategy since depositors are shown to be highly responsive to deposit rates of interest. Umoh (2005) contends 'that The Structural Adjustment Programme (SAP) introduced in 1986 led to the robust growth rate of the intermediation function of Nigerian commercial banks. This high responsiveness has been also demonstrated in a number of occasions in the

country, such as during the advent of aggressive and high-pricing finance and mortgage companies between 1990 and 1993. In addition to the aforementioned economic scenario, the 2004 re-capitalization reform also reinvigorated competitiveness in banking business that resulted in rapid growth of financial intermediation, vis a vis, growth in Deposits. This predicts that high deposit-rate-of-interest strategy should be employed to mobilise savings.

Caution should always be invoked when employing the high-deposit-rate-payment strategy to attract large deposits. High deposit-rate-of-interest strategy is a double-edge weapon that can sink a bank if proper care is not taken. For instance, when such costly funds are sourced without corresponding high-income-earning and safe investments, the outcome is always catastrophic for the bank. Generally, when commercial banks offer high rates of interest on deposits their behaviour can be described as aggressive funds mobilization behaviour. When, on the other hand, they offer lower rates, their behaviour becomes consistence with conservative funds mobilization behaviour. The decision to behave aggressively or conservatively predicates on a number of factors. These include the existence of a relatively high-income earning asset or investment outlets to channel the funds; and the volume of additional funds needed to service treasury and other valued customers.

#### **Objective Two: To examine the impact of real interest rate on deposit mobilization in Nigeria**

The regulatory induced restructuring the economy the form of liberalization was prompted by the resolve of the central bank of Nigeria to place the banking system in an international context and promote soundness, stability, enhanced efficiency, more resilient, competitiveness and dynamic banking system that support and contribute positively to the growth of the economy. One of the mechanism through which it can achieve economic growth from the banking system is interest rate liberalisation. As revealed from the finding of this study, real deposit rate of commercial banks have positive and non-significant impact on deposit mobilization in Nigeria. Policy shocks resulting to period of real deposit rate continuously remaining on the negative part from 1991 till 2012 and with fluctuations in values and which may be caused by periods of unprecedented level of inflation in the country. Also low level of

transparency and accountability leading to poor communication and so did not help the public to understand the goals of central banks may have contributed to it. It comes as no surprise that financial savings in Nigeria are not significantly responsive to the real deposit rates as their behaviour generally reflected other developments in the economy. The period before the gulf war oil crisis of 1990 was one of sustained real financial growth with real M2 increasing. The oil crisis which were also observed 2001, 2004 and 2008 may have contributed to the poor financial savings in Nigeria responsiveness to the real deposit rates

**Objective Three: To determine the impact of nominal interest rate on commercial bank lending in Nigeria**

The vast majority of developed and developing countries rely on dynamism, resourcefulness and risk tasking of monetary policy to trigger and sustain process of economic growth. In overall economic growth, a critical important role is played by the financial. Calderon and Liu (2003) noted that a higher M2GDP ratio implies a larger financial sector and greater financial intermediary development while a CPGDP indicates more financial services and also a greater financial intermediary development.. Financial deepening implies the ability of financial institutions to mobilize savings for investment and it is influenced by the interest rate passed through by the lending rate (Popiel 1990).

As revealed from the study the fact that in recognition of the need for enhanced efficiency of resource allocation in the economy, the prolonged use of policy of sectoral credit allocation was phased out in stages in 1996, and was replaced by an incentive system which encourages banks' voluntary lending to the priority sectors. In line with the need to realign the interest rate regime with the policy of financial market deregulation, the cap on interest rates which was imposed since 1994, was removed with effect from 1st October, 1996. The abolition of mandatory bank credit allocation to the preferred sectors remained in force since 1997. However, banks were enjoined to continue to provide adequate credit to the growth sectors of the economy, including loans to rural borrowers and small-scale enterprises. Period of financial liberalization through interest rate may have accounted for the growth of loan and advances from commercial banks over the period.

Statistical findings show nominal lending rate has a negative and significant impact on commercial banks loan and advances in Nigeria. It is difficult to tell a priori the extent to which the increase in the cost of borrowing has reduced investment in the private sector, with investment measured from capital formation in traditional and modern dwellings, non-residential buildings and construction works, land improvement, breeding stock and dairy cattle, transport, machinery, other equipment and stocks. But casual empiricism suggests that this may have been substantial.

**Objective Four: To determine the impact of nominal interest rate on commercial bank lending in Nigeria**

Banks as financial intermediaries are expected to provide avenue for people to save incomes not expended on consumption. It is from the savings they so accumulate that they are expected to extend credit facilities to entrepreneurs and other industrialists.

As revealed by the study, Real interest rate had negative and non-significant impact on lending of commercial banks in Nigeria. Policy shocks resulting to period of real deposit rate continuously remaining on the negative part from 1991 till 2012 and with fluctuations in values and which may be caused by periods of unprecedented level of inflation in the country. Also low level of transparency and accountability leading to poor communication and so did not help the public to understand the goals of central banks may have contributed to it.

It comes as no surprise that lending in Nigeria is not significantly responsive to the real lending rates as their behaviour generally reflected other developments in the economy. The period before the gulf war oil crisis of 1990 was one of sustained real financial growth with real M2 increasing. The oil crisis which was also observed 2001, 2004, and 2008 may have contributed to the poor financial savings in Nigeria responsiveness to the real deposit rates.

Nigeria's domestic constraints and a tightening competitive global environment may also have led to the non-significant impact observed from this study. Also due to the global economic meltdown witnessed within the period of this study, it may have resulted in increased cost of borrowing due to inflation eroding the real gain from lending as reflected in the falling investor demand.

## REFERENCES

- Calderon, C. & Liu, L (2002). The direction of causality between financial development and economic growth. *Working Paper* No. 184.
- Giovannini, A. (1983). The interest rate elasticity of savings in developing countries: The existing evidence. *World Development*, 11 (7), 1221-1236.
- Giovannini, A. (1985). Saving and the rate of interest in LDCs. *Journal of Development Economics*, 18(9), 67-92
- Leite, S.P. & Makonnen, D. (1986). Saving and interest rates in BCEAO countries: an empirical analysis. *Savings and Development*, 10(3), 2121-2134
- Melo, J. & Tybout, J. (1986). The effects of financial liberalization on savings and investment in Uruguay. *Economic Development and Cultural Change*, 34(5), 301-325
- Popiel, P.A. (1994). Financial systems in Sub-Saharan Africa: A comparative study. World Bank *Discussion papers*, Africa Technical Department Series no. 260, Washington DC: World Bank.
- Umoh, O. J. (2003). An empirical investigation of the determinants of aggregate national savings in Nigeria, *Journal of Monetary and Economic Integration*, 3(2), 113-132

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary of Findings**

The findings from the specific objectives of this study are as follows:

1. Nominal interest (deposit) rate had positive and significant impact on commercial bank deposit mobilization in Nigeria.
2. Real interest (deposit) rate had positive and non-significant impact on commercial bank deposit mobilization in Nigeria.
3. Nominal interest (lending) rate had negative and significant impact on commercial bank lending in Nigeria.
4. Real interest (lending) rate had negative and non-significant impact on commercial bank lending in Nigeria.

#### **5.2 Conclusion**

The results emanating from this study are quite revealing for Nigerian commercial banks. Commercial banks decisions on deposit mobilization and involve the commitment and allocation of funds to short and long-term assets that yield benefits in the future. Nigerian deposit money banks remain dominant in the banking system in terms of their shares of total assets and deposit liabilities. Their total loans and advances, a major component of total credits to the private sector are still on the increase in spite of the major constraints posted by the government regulations, institutional constraints and other macroeconomic factors. We concludes that, both government and deposit money banks should be mindful of the facts that the environments in which they operate are important factors in the bank performance. Where the environment is conducive and supportive, performance of banks is enhanced and good mobilization and lending behaviour is guaranteed. But where the environment is unstable and harsh, the bank's performances suffer. Deposit money banks should note that they need to do a lot in order to ensure good lending behaviour even where a good measure of macroeconomic stability is achieved. The study shows that interest rate regime is an important factor to determine the direction and volume of deposit and advances. Nominal interest (deposit) rate has positive and significant impact on commercial bank deposit mobilization in Nigeria. Real interest (deposit) rate has positive and non-significant impact on commercial bank deposit mobilization

in Nigeria. Nominal interest (lending) rate has negative and significant impact on commercial bank lending in Nigeria. Real interest (lending) rate has negative and non-significant impact on commercial bank lending in Nigeria.

### **5.3 Recommendations**

In line with the specific objectives of this study, we recommend as follows:

1. Since the main source of funds for commercial banks is deposit banks, due emphases should be given to its deposit mobilization. Banks should increase their deposit interest rates in order to mobilize more deposits since there exists a positive casual relationship between savings and deposit interests rates.
2. The monetary authority should enact policies that will reduce inflation to the barest minimum in order motivate depositors to give up on the present consumption.
3. There should be determined efforts by the monetary authorities to bridge the widening gap existing between lending rate and savings rate, so that the people will be fully motivated to save in a bid to generate needed loanable funds for investment in Nigeria.
4. There is need for government to pursue financial sector development because financial deepening will encourage increase in deposits. When the size of saving is increased, more bank loans will be available for both the private and public sector which will enhance economic growth (thus increasing GDP per capita).

### **5.4 Contributions to Knowledge**

This study radically lends credence to earlier works in this area of Impact of Interest Rate on Commercial Bank Lending and Deposit Mobilization in Nigeria thereby contributing significantly to literature by looking majorly on nominal deposit rate, real deposit rate, nominal lending rate and real lending rate impact on Commercial Bank Lending and Deposit Mobilization. Our attempt in this research is to contribute to the existing empirical literature on Interest Rate on Commercial Bank Lending and Deposit Mobilization models. The study expanded the data set to 32 years. Again, the study modified some models used by each researchers. Some of these includes Ajakaiye and Odusola 1995 model of credit mobilization, Ezirm *et al.*, (2002) and

Usman (1999). The study also contributed to knowledge in area of methodology by applying econometric method in establishing long term effect of bank lending.

### **5.5 Recommendation for Further Studies**

The pursuit of knowledge is inexhaustible. This, study recommends the following for further studies. These are:

2. Similar study done on the same topic with panel data with all the commercial banks in Nigeria in a five financial years.
3. Further analysis of other qualitative and quantitative factors/variables that influence banks' lending and deposit mobilization behaviour in Nigeria e.g. Ability/Willingness.
4. A study undertaken on the impact of monetary policies on Commercial Bank Lending and Deposit Mobilization in Nigeria

## BIBLIOGRAPHY

- Adam B. A (2005). Are banks really special? New evidence from the fdic induced. failure on healthy Banks. *American Economic Review*, 32(6),1712-1734
- Adofu, M. I. & Audu, S. I. (2010). An assessment of the effect of interest rate deregulation in enhancing Agricultural production in Nigeria. *Current Research Journal of Economic Theory*, 2(2), 82-86
- Agboluaje, A.A., & Lawal, A. F. (2013). Comparative Study between Granger Causality and Forecast Error Variance Decomposition Analyses on the Effect of Deposit Interest Rate on Savings in Nigeria. *Transnational Journal of Science and Technology*, 3(1),45-67.
- Agu, C.C. (1988). Interest rates policy in Nigeria and it attendant distortions” savings and development. *American Economic Review* XII(1), 19-33.
- Ajakaiye O. & Odusola A.F (1995). Real deposit rates and financial savings mobilization in Nigeria: An empirical tests. *Journal of Economic Management*, 2(2), 34-56
- Ajayi D. (1978). Deposit Rates in a deregulated Regime and its implications. *Transnational Journal of Science and Technology*, 3(3), 55-67
- Akpan I, (2009). *Cross channel integration and optimization in Nigerian banks*. Telnet Press Release, 20 (1), 1-4.
- Alao (2010). Interest rates determination in Nigeria: An econometric X-ray. *International Research Journal of Finance and Economics*, (47).
- Alasia, T. W. O. (2003). *Development of a model for predicting deposit mobilization of commercial banks in Nigeria*. Doctoral Dissertation, University of Nigeria, Enugu Campus.
- Angbazo, L. (1997). Commercial bank net interest margins, default risk, interest rate risk and off–balance sheet banking. *Journal of Banking and Finance*, 21(3), 55–87.
- Anil K. K., R. Rajan & Stein, J.C (2002). Banks as liquidity providers: an explanation for the coexistence of lending and deposit taking. *The Journal of Finance*, XXXIV(4)1123-1167
- Anyanwu, J. C. (1993). *Monetary economics: Theory, policy and institutions*. Onitsha: Hybrid Publishers Ltd.
- Anyanwu, J.C. (1995). Structural Adjustment Programme, Financial Deregulation: The Nigeria Case. *The Nigerian Economic and Financial Review* 1(1), 12-34

- Arrieta, C.M.G. (1988). Interest rates, savings, and growth in LDCs: an assessment of recent empirical research. *World Development*, 16(5), 589-605.
- Athukorala (1998). *Interest Rates, Savings and Investment: Evidence from India*, Oxford Development Studies.
- Athukorala, P & Sen, R. I. (1993). Liberalization of the domestic financial market: theoretical issues with evidence from Sri-Lanka. *International Economic Journal* 7(4), 67-83
- Bakaert, G., Campbelrh,R., & Christian, L. (2003). Does financial liberalization spur growth. *Journal of Financial Economics* 77 (5), 3–55
- Balassa, B. (1981). Structural policies in developing economies. *World Bank Working Paper* 464.
- Balassa, B. (1989). Financial liberalization in developing countries. Policy, planning and research *working papers*, World Bank
- BaquiKhalily M., Richard L. Meyer, & Hushak, L.J (1987). Deposit mobilization in Bangladesh: Implications for rural financial institutions and financial policies. *The Bangladesh Development Studies*, 15(4), 85-117
- Barajas, A., Steiner, R., & Salazar, N. (2000). *Interest spreads in banking in Columbia, 1974- 6*. IMF Staff Papers, 46(2), 196-224.
- Berger, A.N. & Udell, G.F. (2004). The institutional memory hypothesis and the procyclicality of bank lending. *Journal of Financial Intermediation*, 13(4), 458-495.
- Bernanke, B. & A. Blinder (1988). Credit, money and aggregate demand. *American Economic Review*, 78 (2), 435-439
- Bhatt V. (1970), Some aspects of deposit mobilization. *Economic and Political Weekly*, 5(36), 1495-1497.
- Bonfiglioli, A. & Mendicino, C. (2004), Financial Liberalization, Banking Crisis and Growth: Assessing the Links", *SSE/EFI Working Paper No 567*
- Borio, C & Fritz, W (1995). The response of short-term bank lending rates to policy rates: a cross-country perspective. *BIS Working Papers*, No 27.
- Boudriga, A., Boulila, N., & Jellouli, S. (2009). Does bank supervision impact nonperforming loans: cross-country determinants using aggregate data. *American Economic Review*, 45(4), 234-257.
- Brock, P.L, & Rojas-Suárez, F, (2000). Understanding the behavior of bank spreads in Latin America. *Journal of Development Economics*, 63(3), 113–134.

- Brooks C. (2008). *Introductory econometrics for finance*. 2<sup>nd</sup> Ed, New York: Cambridge University Press
- Calderon, C. & Liu, L (2002). The direction of causality between financial development and economic growth. *Working Paper* No. 184.
- Carletti, E., Cerasi, V. & Daltung, S. (2006). Multiple-bank lending: diversification and free-riding in monitoring, *Working Paper*, department of statistics: UniversitadegliStudi di Milano-Bicocca.
- Carroll, C, & Weil, D., (1994). Saving and growth. a reinterpretation. *Carnegie-Rochester Conference series on Public policy*. 40(2),133-192
- Chete, L.N. (1999), *Macroeconomic Determinants of Private Savings in Nigeria*”, NISER Monograph Series, 7,1-4.
- Chinn, M. and Ito, H. (2003). What matters for financial development? capital controls, institutions and interactions. *Journal of Development Economics*, 12(4), 67-83
- Chodechai, S. (2004). *Determinants of bank lending in Thailand: an empirical examination for the years 1992 – 1996*, Unpublished Thesis
- Cookey, A. E. (1997a), Commercial Banks’ loan portfolio and monetary policy in Nigeria: An empirical analysis. *The Journal of Business Industrial and Economic Research*. 1(2), 226-237.
- Crowley, J., (2007). *Interest rate spreads in english-speaking Africa*. *IMF Working Paper*. April 123-45
- De Gregorio, J. & Sturzenegger, F. (1997). Financial markets and inflation under imperfect information. *Journal of Development Economics*, 54(1), 149-168.
- Degryse H., Masschelein, N. & Mitchell, J. (2004). SMEs and bank lending relationships: The impact of mergers. *National Bank of Belgium Working Paper*, No. 46.
- Demirgüç-Kunt, Asli, and Harry Huizinga, (1998). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, 13(7), 379–408.
- Desinga R. N. (1975). Deposit mobilization by co-operative banks; A comparison. *Economic and Political Weekly*, 29(8), 1098-1100
- Devinaga R. (2010). Theoretical framework of profitability as applied to Commercial Bank in Malaysia. *European Journal of Economics, Finance and Administrative Sciences*, 25(5), 35-51

- Dorothee H & Schertler, A (2009). Why do savings banks transform sight deposits into illiquid assets less intensively than the regulation allows?. *Discussion Paper*
- Edmister, R.O. (1982), Margin analysis for consumer deposit interest rate policy. *Journal of Bank Research*, Autumn 1982, 179-84.
- Edwards S. (2001). Capital mobility and economic performance: are emerging economies different. *NBER.P. 8076*.
- Ehrmann, M., L Gambacorta, J Mart'inez-Pag'es, P Sevestre, P. & Worms, A. (2003). *Financia lsystems and the role of bank in monetary transmission in the Euro area*. In Angeloni,I, Kashyap, A., &Mojon, B., editors, *Monetary Transmission in the Euro Area: A Study by the Eurosystem Monetary Transmission Network*, pages 235-269. Cambridge University Press, Cambridge.
- Eichengreen, B. & Leblang, D. (2003). Capital account liberalization and growth: was Mr Mahathir right. *International Journal of Finance and Economics*, 8(5),205-224.
- Elser L., Alfred H., & Wisniwski, S (2005). Competitive analysis of savings mobilisation strategies, consultative group to assist the poorest (CGAP) Working Group on Savings Mobilisation, Eschborn. 8.
- Ene, E. E., Atong, A. S and Ene, J. C (2015). Effect of interest rates deregulation on the performance of deposit money Banks in Nigeria. *International Journal of Managerial Studies and Research*, 3(9), 164-176.
- Erna R. & Syamsulhakim, E (2004). Factors affecting Mudaraba deposits in Indonesia. *Working Paper in Economics and Development Studies*. Padjadjaran University, Indonesia.
- Eustacius N.B. & Leatham, D.J (1995). factors affecting commercial bank lending to agriculture. *Southern Agricultural Economics Association*.
- Evan G., T. Schuermann & Strahan, P. E. (2006). Managing bank liquidity risk: how deposit-loan synergies vary with market conditions. *Federal Reserve Bank of New York*.
- Ezirim B. C. & Emenyonu, E. N. (1997). the financial market, intermediation function and economic efficiency: A paradigmatic Analysis. *Journal of Industrial, Business and Economic Research*, 1(1), 2-17
- Felicia O. O (2011). Determinants of Commercial Banks' lending behavior in Nigeria. *International Journal of Financial Research* 2(2), 13-25
- Finger H, & Hesse, H (2009). Lebanon-Determinants of commercial banks Deposits in a Regional Financial Center" *IMF Working paper, WP/09/19*.

- Fouopi-Djiogap C. & Ngomsi, A (2012), Determinants of bank long-term lending behavior in the Central African Economic and Monetary Community. *Review of Economics & Finance*, 2(1), 23-32
- Franklin Allen & Elena C. (2008). *The roles of banks in financial systems*” University of Pennsylvania. University of Frankfurt and CFS.
- Freixas, X. & Jean-Charles, R (2008) . *Microeconomics of Banking*. Cambridge, Massachusetts, MIT Press
- Friedman, M. (1957). *A Theory of the Consumption Function*, NBER, Princeton University Press, Princeton.
- Fry, M (1995). *Facts about the Co-operative movement*. Nairobi, Kenya National Federation of Co-operatives
- Fry, M., (1988). *Money, Interest, and Banking in Economic Development*. Johns Hopkins University Press, Baltimore, MD
- George G. K (1972). Deposit variability and bank size. *The journal of financial and pp quantitative analysis*, 7(5), 2087-2096.
- Giedeman D. C. (2005). *Branch banking restriction and finance constraints in early 65*. *The Journal of Economics History*, 65(1), 129-151.
- Giovannini, A. (1983). The interest rate elasticity of savings in developing countries: The existing evidence. *World Development*, 11 (7), 345-367
- Giovannini, A. (1983). The interest rate elasticity of savings in developing countries: The existing evidence. *World Development*, 11 (7), 1221-1236.
- Giovannini, A. (1985). Saving and the rate of interest in LDCs,” *Journal of Development Economics*, 18(10), 1356-1372
- Giovannini, A. (1985). Saving and the rate of interest in LDCs. *Journal of Development Economics*, 18(9), 67-92
- Godlewski C. J. & Ziane, Y. (2008). How many banks does it take to lend? Empirical Evidence from Europe. *Working Paper*, Laboratoire de Recherche en Gestion & Economie
- Grilli, V. & Milesi-Ferretti, H (1995). Economics effect and structural determinants of capital controls. *IMF Staff papers*, 42:3.
- Gropp, R., KokSorensen, C. & Lichtenberger, J. (2007). The dynamics of bank spreads and financial structure. ECB Working Paper No. 714.
- Gujarati, D. N. & Porter D. C. (2009). *Basic econometrics*. Fifth Edition, Singapore: New Delhi: McGraw- Hill International Edition

- Hanson, J. A, (2001). Indonesia and India: Contrasting approaches to repression and liberalization. In *Financial Liberalization*, ed. by Caprio, Honohan, and Stiglitz (Cambridge: Cambridge University Press)
- Hanweck, G. A & Ryu, L. (2004). The sensitivity of bank net interest margins and profitability to credit, interest rate, and term-structure shocks across bank product specializations. *Working paper*, retrieved from [http://www.fdic.gov/bank/analytical/working/wp2005/WP2005\\_2.pdf](http://www.fdic.gov/bank/analytical/working/wp2005/WP2005_2.pdf). Accessed on 12/11/13)
- Harold L. S. (1946), The Problem of Excessive Commercial Bank Earnings. Oxford University Press, *The Quarterly Journal of Economics*, 60(3), 365 -389
- Haron S. & W. N. W. Azmi, (2006). Deposit determinants of commercial banks in Malaysia. *Working Paper Series* 009.
- Hasan I. & Sarkar S. (2002), Banks' option to lend, interest rate sensitivity, and credit availability. *Bank of Finland Discussion Paper*, retrieved from <http://www.suomenpankki.fi/pdf/104461.pdf> assessed on 12/11/13)
- Hassan, O. M. (2016). Effect of interest rate on Commercial Bank deposits in Nigeria (2000-2013). *First American Academic Research Conference on Global Business, Economics, Finance and Social Sciences (AAR16 New York Conference)*. [www.globalbizresearch.org](http://www.globalbizresearch.org), New York, USA. 1-17
- Hellmann T., K. Murdock & Stiglitz, J (1995). *Financial restraint: Toward a new paradigm,* forthcoming in *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis*", eds. M. Aoki, M. Okuno-Fujiwara and H. Kim, Oxford University Press
- Herald F. & Heiko H (2009). Lebanon-determinants of commercial banks deposits in a regional financial center. *IMF Working paper*, WP/09/195
- Hubbard, G. (1994). *Is there a 'credit channel' for monetary policy?*. Prepared for Presentation at the Economic Policy Conference, FRB of St. Louis.
- Jappeli T., & Pagano M (1994). Savings, growth and liquidity constraints. *Quarterly Journal of Economics*. 107(12), 1342-1351
- Jayaraman, T. & Sharma, R. (2003). Determinants of interest rate spread in the Pacific island countries: Some evidence from Fiji. *USPEC working paper*, 1(1), 75-104.
- Jim S. (2008). *A how-to guide: Finding and interpreting GDP statistics*. Canadian Centre for Policy Alternatives
- Kasekende, L.A. & Ating - Ego, M. (1999). Impact of liberalization and its implications in sub Saharan Africa: The case of Uganda. *Journal of International Development*, 12(3), 56-78

- Katherine S. (2004). the evolving roles of Commercial Banks in US Credit Markets. *Federal Deposits Insurance Corporation, USA Herald*
- Kelvin A.S (2001). *The role of commercial banks in financing growth and economic development in Trinidad and Tobago and the Caribbean: a perspective from the royal bank of Trinidad and Tobago*. Central Bank of Belize.
- Kerlinger, F.N. (1973). *Foundations of behavioural research techniques in business and economics*. Eleventh Edition, Boston: McGraw-Hill Irwin
- Khat, K.D.R. & Bathia, F.J (1993). Financial intermediation, savings mobilization and entrepreneurial development, the African experience. *Journal of Money, Credit and Banking*, 3(20), 205-218.
- Killick, T. & Martin, M (1990), Policies for financial liberalisation. *ODI Working Paper*, No.35. London: Overseas Development Institute.
- Kraay, A. (2000). In search of the macroeconomic effects of capital account liberalization. *World Bank, Mimeo*.
- Kraft, E (2000). The lending policies of croatian banks: results of the 2nd CNB bank interview project. Croatian National Bank
- Leite, S.P. & Makonnen, D. (1986). Saving and interest rates in BCEAO countries: an empirical analysis. *Savings and Development*, 10(3), 2121-2134
- Levine, R. (2001). International financial liberalization and economic growth. *Review of International Economics* 9(2), 688-702.
- Lorenzo C. A., C. Sorensen & Protopapa M. (2010). Do bank loans and credit standards have an effect on output? A panel approach for Euro Area. *Working Paper Series*, European Central Bank.
- Maddala G.S. (1977). *Econometrics*. New York: McGraw-Hill.
- Mahendra V. P. (2005). Impact of self-help groups on formal banking habits. *Economic and Political Weekly*. 40(17), 1705-1713
- Maria S. M. Peria & Schmukler, S. L. (2001). Do depositors punish banks for bad behavior? Market discipline, deposit insurance, and banking crises. *The Journal of Finance*, 56(3), 1029-1051
- Mark C. & Mitcheer, K. S (2006), Branch credit banking, bank banking, competition, and financial stability. Ohio State University, *Journal of Money*, 38(5), 1293-1328
- Masson, P.,T Bayoumi, & Samiei, H. (1998). International evidence on the determinants of private saving. *World Bank Economic Review*, 12(3), 483-501

- McConnell, C.R. & Bruce, S.L. (1995), *Economics*. New York: McGraw-Hill Professional.
- Mckinnon, R.I. (1973), *Money and capital in economic development*. Washington: The Brookings Institution.
- Mckinnon, R.I. (1973). *Money and capital in economic development*. Washington: The Brookings Institution.
- Medhat T. (2004). A Comparison of Financial Performance in the Banking Sector: Some Evidence from Omani Commercial Banks. *International Research Journals of Finance and Economics* 34(12), 101-134
- Meenakshi T (1975), Expansion of commercial banking: An assessment. *Economic and Political Weekly*, 10(47), 1819-1824.
- Melo, J. & Tybout, J. (1986). The effects of financial liberalization on savings and investment in Uruguay. *Economic Development and Cultural Change*, 34(5), 301-325
- Mishkin, F. S. (2007). Symposium on the monetary transmission mechanism. *Journal of Economic Perspectives*, Fall, 8(1), 3-10.
- Modigliani, F. (1966). The life-cycle hypothesis of savings; The demand for wealth, and the supply of capital. *Social Research* 33(6), 160-217.
- Modigliani, F. (1986). The monetarist controversy or, should we forsake stabilization policies ? *American Economic Review*, March, 12(1), 1-19.
- Mohammad N. & Mahdi S. (2010). The role of inflation in financial repression: evidence from Iran. *World Applied Sciences Journal* 11(6), 653-661.
- Monti, M. (1972), *Deposit, credit and interest rate determination under alternative bank objective functions*. In G.P. Szego and K. Shell (eds), *Mathematical methods in investment and finance*, North-Holland, Amsterdam, 430-454
- Muoghalu, M. & Ezirim, C.B (2002a). Financial markets' operations and aggregate economic activity: an econometric investigation of the Nigerian experience. *The Journal of Banking and Finance*, 5(2), 25-42.
- Mustafa K. M & Younus, S (2009). An analysis of interest rate spread in Bangladesh. *The Bangladesh Development Studies*, Applied Finance Journal, 21(5), 90-102
- Mwega, F. & Ngola, S. (1991). The role of interest rates in the mobilization of private savings in Africa: A case study of Kenya. *Ife Journal of Economics and Finance*, 1(1), 1-14
- Nada M (2010). *Can banks provide liquidity in a financial crisis?* Federal Reserve Bank of Kansas City, Economic Revision

- Ndekwe, E.C. (1991). *Interest rates, bank deposits and growth of the Nigerian Economy*. NISER Monograph Series, No. 4.
- Ndung'u, N. & Ngugi, R.W. (2000), Banking Sector Interest Rate Spreads in Kenya, Kenya Institute for Public Policy Research and Analysis *Discussion Paper*, No. 5
- Ngugi R. (2001). An empirical analysis of interest rate spread in Kenya. *African Economic Research Consortium*.
- Nnanna, O.J., Englama, A. & Odoko, E. O. (2004). *Finance, investment and growth in Nigeria*. central bank of Nigeria, corporate Headquarters, Abuja, FCT.
- Nwaobi, G.C. (2003), Solving the Poverty Crisis in Nigeria: An Applied General Equilibrium Approach. *Quantitative Economic Research Bureau*. Gwagwalada, Abuja
- Ogunbiyi, S. S. & Ihejirika, P. O (2014). Interest rates and deposit money banks' profitability nexus: the nigerian experience. *Arabian Journal of Business and Management Review*, 3(11), 133-148
- Ojo, J.A.T. (1976). *The Nigerian financial system*. University of Wales Press, Cardiff.
- Ojo, M.O. (2001). Principles and practice of monetary management in Nigeria. *Central Bank of Nigeria*, 31.
- Ojo, O. (1984). *Financial intermediation and growth*. University of Ife Inaugural Lecture; University of Ife Press, Ile-Ife. Odedokun
- Okpara G. C. (2010). The effect of financial liberalization on selected macroeconomic variables: Lesson from Nigeria. *International Journal of Applied Economics and Finance*, 4(4), 53-61.
- Ongena S. & Smith, D. C. (2000), What determines the number of Bank relationships?: Cross country evidence. *Journal of Financial Intermediation*, 9(6), 26-56
- Onwumere J.U.J, Okore O. A & Ibe I. G. (2011). The impact of interest rate liberalization on savings and investment: Evidence from Nigeria. *Research Journal of Finance and Accounting*, 3(10), 20-32.
- Onwumere, J.U. J. (2005). *Business and economic research method*. Lagos: Don-Vinton Limited
- Osamor, I. P., Akinlabi, H. & Osamor, V. C (2013). An empirical analysis of the impact of globalisation on performance of Nigerian Commercial Banks in post-consolidation period. *European Journal of Business and Management*, 5(5), 37 – 45.

- Padilla, A.J. & Pagano, M. (1997). Endogenous communication among lenders and entrepreneurial incentives. *Review of Financial Studies*, 10(11), 205-236
- Paul O. & Omosefe, O (2014). The impact of interest rate on bank deposit: Evidence from the Nigerian Banking Sector. *Mediterranean Journal of Social Sciences*, 5(16), 134-149.
- Phylaktis, K. (1997). Capital market integration in the Pacific-Basin region: An analysis of real interest rate linkage. *Pacific-Basin Finance Journal*, 5(2), 195-213
- Popiel, P.A. (1994). Financial systems in Sub-Saharan Africa: A comparative study. World Bank *Discussion papers*, Africa Technical Department Series no. 260, Washington DC: World Bank.
- Quaden, G (2004). *Efficiency and stability in an evolving financial system*. ([www.bnb.be/Sg/En/Contact/pdf/2004/sp040517en.pdf](http://www.bnb.be/Sg/En/Contact/pdf/2004/sp040517en.pdf) assessed on 12/11/13)
- Ramful, P. (2001). The determinants of interest rate spread: empirical evidence on the mauritian banking sector. *Central Bank of Mauritius Working paper*
- Richard E. B. (1971). Deposit composition and commercial bank earnings, *The Journal of Finance*, 26(1), 39-50
- Riechel (1991). *Savings, investment and growth patterns in developed and developing countries NCEMA Monography*. Series No. 3.
- Robinson, P. (2002). Zimbabwe's hyperinflation: The house is on fire—but does the government know that it is dousing the flames with Petrol?" Friedrich-Ebert-Stiftung. (Available at <http://library.fes.de/pdf-files/iez/03894.pdf> assessed on 12/11/13)
- Rodrik, D. (1998). *Who needs Capital-account convertibility*. Harvard University, Mimeo. (Ed)
- Romer, C.D (2000). Does monetary policy matter? A New Test in the Spirit of Friedman and Schwartz. *NBER Macroeconomics Annual* 4(3), 121-170.
- Roubini, Nouriel & Sala-i-Martin, X (1992). Financial repression and economic growth. *Journal of Development Economics* 39(3), 5-30.
- Russell O.C & Bamindele M.(2009). The impact of macroeconomic banking, instability on the banking sector lending behavior in Nigeria. *Journal of Money, Investment*, 13(7), 134-156.
- Saunders A & Schumacher L (2000). The determinants of bank interest rate margins: international study. *Journal of international money and finance*, 21(6), 813-832

- Seck, D. and Nil El, Y. (1993), Financial liberalization in Africa. *World Development*, 21(5), 1867-1881
- Shaw E. A. (1995). Operational Results of commercial banks in Jamaica (1991-1993). *Social and Economic Studies*, 44(4), 23-40
- Shaw, E. (1973). *Financial deepening in economic development*. New York: Oxford University Press.
- Sheku A. & Bangura, F (2005). Statistical information and the banking sector. For Presentation at the Fourth meeting of the Committee on Development Information (CODI-IV)-Sub-Committee on Statistics, Plenary Session 1: Information in Key Economics Sector, *United Nations Conference Centre (UNCC)*, Addis Ababa, Ethiopia.
- Shrestha, M. B. & Chowdhury, K (2007). The impact of financial liberalisation on welfare: evidence from Nepal, *Working Paper*, Applied Econometrics and International Development
- Shubik M. & Sobel M. (1992). On matching book: A problem in banking and corporate finance. *INFORMS, Management Science*, 38(6), 827-839
- Singh, P. (2010). Technical and scale efficiency in district central co-operative banks of punjab - a non parametric analysis. *Indian Co-operative Review*, 47(1), 56-72.
- Sologoub, D. (2006). The determinants of Bank Interest Margins and Profitability: Case of Ukraine. ([www.bof.fi/bofit/seminar/bofcef06/sologub.pdf](http://www.bof.fi/bofit/seminar/bofcef06/sologub.pdf) assessed on 12/11/13).
- Stiglitz, J. E., & Weiss, A. (2001). Credit rationing in markets with imperfect information. *American Economic Review*, 26(7), 393-410.
- Turtelboom, B. (1991). interest rate liberalization: Some lessons from Africa. *IMF Working Paper*, WP/91/121.
- Umoh, O. J. (2003). An empirical investigation of the determinants of aggregate national savings in Nigeria. *Journal of Monetary and Economic Integration*, 3(2), 113-132
- Uremadu S. O. (2002). *Introduction to finance*. Benin: Mindex Publishing Company Limited.
- Usman, S. (1999). *Bank regulation and supervision in Nigeria*. *The Nigerian Banker*, 13(5):67-81
- Valverde, S. C., Del Paso, R. L. & Fernandez, F. R. (2004). Banks, financial innovations and regional growth. *European Journal of Economics, Finance and Administrative Sciences*, 23(5), 101-115.

- Voon-Choong Y., H.B Ong, K.T Chan & Ang, S (2010). Factors affecting banks' risk exposure: Evidence from Malaysia. *European Journal of Economics, Finance and Administrative Sciences*.
- Walsh M. (2003). *Monetary theory and policy*. MIT Press Canbridge Massachussetts United States.
- Yanne G, P Schepelmann & Isabel V.S (2007). Alternative progress indicators to gross domestic product (GDP) as a means towards sustainable development. *European Journal of Economics, Finance and Administrative Sciences* 23(5),87-101
- Yomere, G. O. & Agbonifoh, B. A. (1999). *Research methodology in the management and social sciences*. Benin: Uniben Press