UNIVERSITY OF GHANA

TOPIC:

MONETARY POLICY MECHANISMS AND ITS EFFECT ON LENDING RATES OF COMMERCIAL BANKS IN GHANA: A CASE OF CAL BANK LIMITED.

SUBMITTED BY

JOHN CARL TAGBOR

(10593990)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE EMBA FINANCE DEGREE

DECEMBER 2017

DECLARATION

This is to certify that this thesis is the product of research undertaken by JOHN CARL TAGBOR in partial fulfilment of requirements for the award of an EMBA IN FINANCE in the Department of Finance, College of Humanities, University of Ghana, Legon. All references used in this work have been accordingly acknowledged.

I bear sole responsibility for any shortcomings.

……...

JOHN CARL TAGBOR

(10593990)

CERTIFICATION

I hereby certify that this thesis was supervised in accordance with the procedures laid down by the University of Ghana.

……...

DR CHARLES ANDOH

(SUPERVISOR)

DEDICATION

This study is dedicated to the Almighty God. I would be nowhere without Him.

ACKNOWLEDGEMENTS

I am thankful the Almighty God for His grace and mercy, without which I would not have completed this work.

Special gratitude goes to every member of my family for their support during the course of my EMBA programme.

I am also thankful to Dr. Charles Andoh of the Finance Department of University of Ghana Business School for his advice, guidance, and critiques during the study. I also thank Dr. Emmanuel Sarpong - Kumankoma and Dr. Saint Kuttu all of the Finance department of University of Ghana for their comments and recommendations during the study.

Final gratitude goes to all my colleagues of the EMBA class of 2017 who in one way or another supported me throughout the pursuance of my degree.

ABSTRACT

This study examines the impact of monetary policy mechanisms on the lending behaviour of Cal Bank Ltd. To operationalize this objective, secondary data was sourced from the Bank of Ghana data centre and some Officials at Cal Bank were also interviewed. The study estimated an econometric model using a time series regression to explain the relationship between the monetary policy rate and the Bank's lending rates. The interview was also used to answer other research questions as well as validate the statistical outcomes. This study found that Bank of Ghana's Monetary policy rate does not have a strong effect on Cal Bank's lending policies because it is not a variable in the base rate formula enforced by the Central Bank on all Banks. Also, the cash reserve ratio affects the cost of funds of Cal Bank which ultimately affects the bank's lending rates. Open Market Operations also affect Cal bank's lending behaviour. It is therefore essential for the Central Bank to structure the Monetary Policy Rate into the Base rate computation of Banks if its effect on the lending rates of Banks is desired.

Keywords: Monetary Policy, Lending rates, InterBank Rate, Open Market Operations, Cash reserve ratio.

Table of Contents

CHAPTER THREE - METHODOLOGY

CHAPTER FOUR - DATA ANALYSIS

CHAPTER FIVE - SUMMARY, CONCLUSION & RECOMMENDATIONS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE
INTRODUCTION

1.1. Background of the Study

The ultimate objective of monetary policymakers is to promote the health of their economy by pursuing their mandated goals of price stability and maximum sustainable output and employment (Ajie & Nenbe, 2010). Monetary policy can be described as the measures taken by the monetary authorities to influence the quantity of money with a view to achieving stable prices, full employment and economic growth (Ioannidis & Kontonikas, 2006). Monetary policy is an aspect of macroeconomics which deals with the use of monetary instruments designed to regulate the value, supply and cost of money in an economy, in line with the expected level of economic activity (Ubi, Lionell& Eyo, 2012). It covers gamut of measures or combination of packages intended to influence or regulate the volume, prices as well as direction of money in the economy per unit of time (Olokoyo, 2011; Bernanke, 2003). The effectiveness of monetary policy and its relative importance as a tool of economic stabilization varies from one economy to another, due to differences among economic structures, divergence in degrees of development in money and capital markets resulting in differing degree of economic progress, and differences in prevailing economic conditions (Akhtar, 2006; Bernanke, 2005).

Olokoyo (2011) expressed that commercial banks decisions to lend out loans are influenced by a lot of factors such as the prevailing interest rate, the volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio, prestige and public recognition to mention a few. Ajie and Nenbee (2010) contended that reserves of the banks are influenced by the Central Bank

through its various instruments of monetary policy. These instruments include the cash reserve requirement, liquidity ratio, open market operations and primary operations to influence the movement of reserves. All these activities affect the banks in their operations and thus influence the cost and availability of loanable funds (Mohammed & Simon, 2008). Thus, monetary policy instruments are critical in the demand for and supply of reserves held by depository institutions and consequently on availability of credit (Addo & Seyram, 2013).

In developing countries such as Ghana, underdevelopment, shallowness of financial markets and the transmission process dominated by bank lending channel, make the structure of financial markets play an important role in transmission process (Mishra et al. 2010; Acheampong, 2005). Mishra and Montiel (2012) concluded that monetary policy transmission in such economies tends to be weak at best. A number of studies have examined potential structural basis why the transmission mechanism is effective in some countries and weak or non-existent in others; mostly with a focus on advanced economies. (Saxegaard, 2006). Cottarelli and Kourelis (1994) and Ehrmann and Worms (2001), suggest that an economy's financial structure, as well as its underlying regulatory and institutional quality is the key for the effectiveness of transmission.

High interest rates in Ghana have resulted in public outcry and the call for regulation (Acheampong, 2005). Despite the pressure from interest and pressure groups, cost of borrowing has not dropped, even though the high level of interest rate in the country continues to be a source of worry; as it inhibits investment, economic growth and development (Sarpong, Winful& Ntiamoah, 2013; Bawumia, Belnye & Ofori 2005; Amidu, 2006). A specific policy issue that is of concern to policy-makers relates to the apparent lack of downward responsiveness of commercial banks' lending rates. This apparent intractable position by the banks has complicated policy issues concerning lending rates at a time when the government wants to promote private sector-driven

growth (Baah-Wieredu, 2007). The question still remains as to why commercial banks fail to reduce their base rate as aresponse to the decrease in Central Bank's Policy rate. An analysis of bank interest rate spreads is therefore central to the understanding of the financial intermediation process and the macroeconomic environment in which banks operate especially in Ghana.

1.2. Statement of Research Statement

The effectiveness of monetary policy on the real economy is still an issue under intense debate particularly related to the efficacy of the transmission. Several research studies have been done in relation to commercial banks in Ghana**.**Obeng and Sakyi (2017) examined macroeconomic determinants of interest rate spreads in Ghana for the period 1980-2013 and found that exchange rate volatility, fiscal deficit, economic growth, and public sector borrowing from commercial banks, increase interest rate spreads in Ghana in both the long and short run. Addo and Seyram (2013) found a statistically significant strong positive relationship between policy rate and lending rates of the sampled banks; indicating that commercial banks' lending rate behaviour is affected by the Central Bank's policy rate and inflation rate. Acheampong (2005) found that interest rates in Ghana respond sluggishly to changes in the money market rates.

Sarpong, Winful and Ntiamoah (2013) found in their study that operating cost, market share and previous year's non-performing loans are sensitive to the definition of interest rate spreads. Adu and Adu (2016) found evidence of a long-run equilibrium relationship between the average lending rate charged by commercial banks and its determining factors. Churchill, Kwaning and Ababio (2014) found that factors affecting the determination of interest rate spread in Ghana are GDP,

exchange rate, prime rate, treasury bill rate, liquidity, overhead costs, loan loss provisioning and profit margin.

Several gaps have been identified in the current literature and research with respect to monetary policies. The literature reveals while there is much effort by the government to influence the money supply by instituting various policies but an analysis on the effectiveness of these tools which mainly depends on the reaction of commercial banks is lacking. This study is therefore motivated to fill the knowledge gap by undertaking a detailed study on effects of the monetary policy mechanism on the lending behaviour of Cal Bank Ltd.

1.3. Research Objectives

The general objective of this study is to assess the impact of monetary policy mechanisms on the lending behaviour of Cal bank Ltd. Specifically, this study seeks to:

i. Examine the relationship between Monetary Policy Rate and Lending Rate of Cal Bank.
ii. Establish the effects of cash reserve ratio on lending behavior of Cal Bank.
iii. Find out the extent to which open market operations affect lending behavior of Cal Bank

1.4. Research questions

This study seeks to answer the following research questions;

i. What is the relationship between Monetary Policy Rate and Lending Rate of Cal Bank?
ii. What are the effects of cash reserve ratio on lending behaviour of Cal Bank?
iii. To what extent does open market operations affect lending behaviour of Cal Bank?

1.5. Significance of the Study

The significance of this study can be seen from several perspectives. From the perspectives of Ghanaian commercial banks, the findings of the study would be important to commercial banks, as they would be able to establish the impact of the various monetary policy tools on their lending behaviour and hence understand their role in attainment of desired economic growth for the country. The study would also be of importance to various stakeholders in the banking sector among them bank's customers who are keen to know why the cost of borrowing has suddenly increased in the recent past. Understanding the effect of monetary policy on cost of borrowing would help the consumers to make borrowing decisions.

The study would also benefit the government as it would provide an insight to the effect of monetary policies on lending behaviour of commercial banks. The government partners with banks to ensure price, interest rates and exchange rates stability and enhance economic development through provision of affordable credit. Also, the results of this study would also be valuable to researchers and scholars, as it would form a basis for further research. Further, this study would contribute to the pool of knowledge into the relationship between of monetary policies and lending behaviours of commercial banks in Ghana and therefore contribute to academic reference materials.

1.6. Scope and Limitation of the Study

The study focuses solely on monetary policy mechanisms and its effect on lending rates of Cal Bank Ltd. In effect, this study adopts the case study approach which does not lend itself to generalization of findings (Yin, 2003). Cal Bank was selected for detailed analysis due to easy

access to information and key decision makers. The limitations of the study may include the difficulty of obtaining primary information from the bank and their uncooperative attitude for fear of information falling into wrong hands may adversely affect primary data collection. However, the top management of the bank would be assured that this study is only for academic purposes and that information provided will be held in the strictest of confidence.

1.7. Structure of the Study

This study comprises five chapters. Chapter one serves as the introduction to the research and it gives a synopsis of the rationale for the study, its objectives, significance and specifies the problem statement. Chapter two on the other hand is a review of literature pertaining to the subject area under study. The third chapter four presents a detailed account of the methodology used in conducting the study. The methodology comprises of the data type and the methods used in analyzing collected data. Furthermore, in this chapter the justification of the choice of analysis tools are stated and explained. It also contains the sampling techniques used, the sample size, and the data source. Chapter four examines the results of the study in relation to the stated objectives. It refers to the analysis of the survey and other data collected. The final chapter which is chapter five is dedicated to conclusions, recommendations, and potential research topics emanating from this research.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter contains a review of literature as presented by various authors and scholars based on the objectives of the study. The literature review provides an explanation of theoretical rationale of the problem being studied as well as what research has already been done and how the findings relate to the problem at hand. The chapter discusses the theoretical review, literature review and empirical review on monetary policy.

2.2. Theoretical Review

This section of the chapter reviews literature on key concepts and theories such as the concept of monetary policy, the objectives and goals of monetary policies, monetary policy tools, loanable funds theory, loan pricing theory, credit market theory and the meaning of lending rates.

2.2.1. Concept of Monetary Policy

Several researchers have defined Monetary policy pertaining to their economic environment but these definitions do not differ much from each other. Monetary policy is an aspect of macroeconomics which deals with the use of monetary instruments designed to regulate the value, supply and cost of money in an economy, in line with the expected level of economic activity (Ubi et al. 2012). It covers a range of measures or combination of packages intended to influence or regulate the volume, prices as well as direction of money in the economy per unit of time (Olokoyo, 2011; Bernanke, 2003). Monetary policy refers to the combination of measures designed to

regulate the value, supply and cost of money in an economy. It can be described as the art of controlling the direction and movement of credit facilities in pursuance of stable price and economic growth of a nation. (Chowdhury, Hoffman & Schabert, 2003). Monetary policy can also be described as the measures taken by the monetary authorities to influence the quantity of money with a view of achieving stable prices, full employment and economic growth (Ioannidis & Kontonikas, 2006).

Monetary policy refers to the actions of the Central Bank to regulate the money supply which could be through discretional monetary policy instruments such as the open market operation(OMO), discount rate, reserve requirement, moral suasion, direct control of banking system credit, and direct regulation of interest rate (Loayza & Schmidt-hebbel, 2002). Finally, monetary policy comprises the formulation and execution of policies by the central bank to achieve the desired objective or set of objectives; the policies and decisions are aimed at guiding bank lending rates to levels where credit demand and money growth are at a level consistent with aggregate supply elasticity ((Ubi et al. 2012).

The management of the expansion and contraction of the volume of money in circulation for the explicit purpose of attaining a specific objective such as full employment (Ubi et al. 2012). In effect, monetary policy is a policy to regulate the flow of monetary resources in the economy to attain certain specific objectives (Ioannidis & Kontonikas, 2006). As pointed out by Chowdhury, Ibrahim, Hoffmann (2003), monetary policy implies those measures designed to ensure an efficient operation of the economic system or set of specific objectives through its influence on the supply, cost and availability of money. Further, it also deals with the distribution of credit between uses

and users and also with both the lending and borrowing rates of interest of the banks. In developed countries, the monetary policy has been usefully used for overcoming depression and inflation as an anti-cyclical policy (Olokoyo, 2011; Bernanke, 2003).

2.2.2. The Objectives and Goals of MPCs

It is important to understand the distinction between objectives or goals, targets and instruments of monetary policy (Kuttner and Mosser 2002). Whereas goals of monetary policy refer to its objectives which, as mentioned above, may be price stability, full employment or economic growth, targets refer to the variables such as supply of money or bank credit, interest rates which are sought to be changed through the instruments of monetary policy so as to attain these objectives. The various instruments of monetary policy are changes in the supply of currency, variations in bank rates and other interest rates, open market operations, selective credit controls, and variations in reserve requirements. The objectives and goals that the central bank seeks to achieve generally are low inflation (usually targeted), protection of value of currency, while the Government arm aims at full employment and sustainable economic output (economic growth) (Bernanke, 2003).

Price Stability or Control of Inflation

Price stability is considered the most genuine objective of monetary policy. Stable prices repose public confidence because cyclical fluctuations are totally eliminated (Olokoyo, 2011). It promotes business activity and ensures equitable distribution of income and wealth. As a consequence, there is general wave of prosperity and welfare in the community. Price stability also impedes economic progress as there is no incentive left with the business community to increase production of

qualitative goods. It discourages exports and encourages imports. But it is admitted that price stability does not mean 'price rigidity' or price stagnation'. A mild increase in the price level provides a tonic for economic growth. It keeps all virtues of a stable price. Achieving price stability remains the dominant objective of monetary policy of developing countries. It may however be noted that price stability does not mean absolutely no change in price. In a developing economy like that of Ghana, where structural changes take place during the process of economic growth some changes in relative prices do occur that generally put upward pressure on prices. Therefore, some changes in price level or, in other words, a certain rate of inflation is inevitable in a developing economy. Thus, price stability means reasonable rate of inflation (Olokoyo, 2011).

Economic Growth:

Promoting economic growth is another important objective of the monetary policy (Abaker, 2009). Economic growth is the process whereby the real per capita income of a country increases over a long period of time. It implies an increase in the total physical or real output, production of goods for the satisfaction of human wants.

In other words, it means utilization of all the productive natural, human and capital resources in a manner as that ensures sustainable increase in national and per capita income over time. Therefore, monetary policy promotes sustained and continuous economic growth by maintaining equilibrium between the total demand for money and total production capacity and further creating favourable conditions for saving and investment (Adam, 2009). For bringing equality between demand and supply, flexible monetary policy is the best course. In other words, monetary authority should follow an easy or tight monetary policy to suit the requirements of growth. Again, monetary policy

in a growing economy, has to satisfy the growing demand for money. Thus, it is the responsibility of the monetary authority to circulate the proper quantity and quality of money.

Exchange Rate Stability:

In order to prevent large depreciation and appreciation of foreign exchange rate Reserve, countries and their central banks have to take suitable monetary measures to ensure foreign exchange rate stability (Bernanke, 2003). It must be noted that if there is instability in the exchange rates, it would result in outflow or inflow of gold resulting in unfavorable balance of payments. Therefore, stable exchange rates play a key role in international trade. Thus, it is clear from this fact that: another main objective of monetary policy is to maintain stability in the external equilibrium of the country.

Equilibrium in the Balance of Payments:

Equilibrium in the balance of payments is another objective of monetary policy which emerged significant in the post war years (Faure, 2007). This is simply due to the problem of international liquidity on account of the growth of world trade at a faster speed than the world liquidity. It was felt that increasing of deficit in the balance of payments reduces, the ability of an economy to achieve other objectives. As a result, many less developed countries have to curtail their imports which adversely effects development activities. Therefore, monetary authority makes efforts that equilibrium should be maintained in the balance of payments.

2.2.3. Monetary Policy Tools

To achieve the desired stabilization in an economy, central banks use various monetary policy instruments which may differ from one country to another according to differences in political

systems, economic structures, statutory and institutional procedures, development of money and capital markets and other considerations (Bernanke, 2003). The set of instruments available to monetary authorities may differ from one country to another, according to differences in political systems, economic structures, statutory and institutional procedures, development of money and capital markets and other considerations (Faure, 2007). In most advanced capitalist countries, monetary authorities use one or more of the following key instruments: changes in the legal reserve ratio, changes in the discount rate or the official key bank rate, exchange rates and open market operations (Abaker, 2009). In many in-stances, supplementary instruments are used, known as instruments of direct supervision or qualitative instruments.

Although the developing countries use one or more of these instruments, taking into consideration the difference in their economic growth levels, the dissimilarity in the patterns of their production structures and the degree of their link with the outside world, many resort to the method of qualitative supervision, particularly those countries which face problems arising from the nature of their economic structures (Adam, 2009). Although the effectiveness of monetary policy does not necessarily depend on using a wide range of instruments, coordinated use of various instruments is essential to the application of a rational monetary policy. Some of the commonly used monetary policy tools include: Open Market Operations (OMO), Repo rate; Interest rates; Money supply; Exchange Rates; Balance of Payment (Handa, 2005).

2.2.4. Loanable Funds Theory

Under the loanable Funds theory of interest, the rate of interest is calculated on the basis of demand and supply of loanable funds present in the capital market (Faure, 2007). The loanable funds theory

of interest advocates that both savings and investments are responsible for the determination of the rates of interest in the long run while short-term interest rates are calculated on the basis of the financial conditions prevailing in an economy. The determination of the interest rates in case of the loanable funds theory of the rate of interest depends on the availability of loan amounts. The availability of such loan amounts is based on factors like the net increase in currency deposits, the amount of savings made, willingness to enhance cash balances and opportunities for the formation of fresh capitals (Bibow, 2000). The nominal rate of interest is determined by the interaction between the demand and supply of loanable funds. Keeping the same level of supply, an increase in the demand for loanable funds would lead to an increase in the interest rate and the vice versa. An increase in the supply of loanable funds would result in fall in the rate of interest. If both the demand and supply of the loanable funds change, the resultant interest rate would depend much on the magnitude and direction of movement of the demand and supply of the loanable funds (Gertler &Gilchrist, 2003).

The demand for loanable funds is derived from the demand from the final goods and services which are again generated from the use of capital that is financed by the loanable funds. The demand for loanable funds is also generated from the government (Bernake & Blinder, 2002). The Loanable Funds Theory of the Rate of Interest has similarity with the Liquidity-Preference Theory of Interest in the sense that both of them identify the significance of the cash balance preferences and the role played by the banking sector to ensure security of the investment funds (Gertler & Gilchrist, 2003).

Wray (1992) in his work titled alternative theories of the Rate of Interest criticizes the liquidity preference theory by pointing out that the rate of interest is not purely a monetary phenomenon. Real forces like productivity of capital and thriftiness or saving by the people also play an important role in the determination of the rate of interest which is ignored by the Keynes liquidity preference theory. Wray adds that liquidity preference is not the only factor governing the rate of interest. There are several other factors which influence the rate of interest by affecting the demand for and supply of investible funds. The liquidity preference theory does not explain the existence of different rates of interest prevailing in the market at the same time. Wry (1992) further notes that Keynes ignores saving or waiting as a means or source of investible fund. To part with liquidity without there being any saving is meaningless. The Keynesian theory only explains interest in the short-run and gives no clue to the rates of interest in the long run. He finally says that Keynes theory of interest, like the classical and loanable funds theories, is indeterminate as one cannot know how much money will be available for the speculative demand for money unless they know how much the transaction demand for money is (Faure, 2007).

2.2.5. Loan Pricing Theory

Banks cannot always set high interest rates, e.g. trying to earn maximum interest income. Banks should consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship (Faure, 2007; Stiglitz & Weiss, 1981). If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour also called borrower moral hazard since they are likely to take on highly risky projects or investments (Chodecai, 2004). From the reasoning of Stiglitz

and Weiss, it is usual that in some cases we may not find that the interest rate set by banks is commensurate with the risk of the borrowers.

2.2.6. Credit Market Theory

A model of the neoclassical credit market postulates that the terms of credits clear the market. If collateral and other restrictions (covenants) remain constant, the interest rate is the only price mechanism. With an increasing demand for credit and a given customer supply, the interest rate rises, and vice versa. It is thus believed that the higher the failure risks of the borrower, the higher the interest premium (Ewert et al, 2000). The increase in demand for credit brought about by low interest rates eventually may lead to depreciation of currency. Central bank therefore must adjust the interest rate to increase the cost of borrowing. Commercial banks in their turn must increase their rates and therefore lending is lowered as credit becomes expensive (Gertler and Gilchrist, 2003).

2.2.7. Lending rate

Lending rates are the charges made to borrowers when they take loans from the bank. This impacts borrowers and the banks differently. The banks have in recent times reacted differently to changes in policy rate and base rate, fees and commissions (Van de Heuvel, 2000). There are arguments that lending rate are high and scare away borrowers and other investors. Banks also argue that operational cost and cost of providing efficient services are exorbitant, and there need to recover these costs, in order to stay in business. Thus, the total revenue must be greater than the total cost (Van de Heuvel, 2000; 2002).

Borrowing and output by bank and dependent firms, often decrease more than the borrowing and output by firms with access to public debt market (Gertler & Gilchest, 1994). Every bank is built to create awareness to the customer on the amount of charges made; either in real values or percentages, as well as interest to be debited on borrowers' accounts 14 days in advance. The full list of charges and lending rates are to be displayed at bank's branch offices or must be provided to customers on demand. The main channels that influence banks' interest rates include loan and deposit demand and high volatility of the money market rate(s) (Zafar, Urooj & Durrani 2008).

2.3. The Relationship between Monetary Policy Rate and Lending Rate

There is general agreement among economists and policymakers that monetary policy works mainly through interest rates (Keeton, 2001; Stiglitz and Weiss, 2001; O'Hara, 2005). When the central bank policy is tightened through a decrease in reserve provision, for instance, interest rates rise. Interest rate rise means that the banks have to adjust their lending rates upwards. The rise in interest rates leads to a reduction in spending by interest sensitive sectors of the economy, such as housing and consumer purchases of durable goods. Therefore, the cost of credit becomes high and in most cases, it becomes unaffordable reducing demand for credit (Crowley, 2007). Some economists and policymakers have argued that an additional policy channel works through bank credit (Keeton, 2001; Stiglitz & Weiss, 2001). In this view, monetary policy directly constrains the ability of banks to make new loans, making credit less available to borrowers who depend on bank financing. Thus, in the credit channel, restrictive monetary policy works not only by raising interest rates, but also by directly restricting bank credit (Kashyap & Stein, 2000).

In economic theory, interest is the price paid for inducing those with money to save it rather than spend it, and to invest in long-term assets rather than hold cash. Rates reflect the interaction between the supply of savings and the demand for capital; or between the demand for and the supply of money (O'Hara, 2005). The Central Bank's principal objective is formulation and implementation of monetary policy directed to achieving and maintaining stability in the general level of prices. The aim is to achieve low inflation and to sustain the value of the currency. In addition, the Central Bank aims to support Government economic policy of economic growth and employment (Simpasa, Nandwa & Nabassaga 2015). Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007).

A number of studies have examined how banks adjust loans, securities, and deposit and non-deposit liabilities to changes in monetary policy. Kashyap and Stein (2000), among others, suggest that the impact of monetary policy on lending behavior is stronger for banks with less liquid balance sheets. In response to a tightening of policy, bank transactions deposits or core deposits fall immediately, then total bank loans decline, but only after a significant lag of two to three quarters. Subsequently, banks are able to maintain lending in the face of a decline in core deposits by selling securities and issuing managed liabilities such as time deposits and Eurodollar borrowings (Bernanke & Blinder, 2002; Gertler & Gilchrist, 2003).

Simpasa, Nandwa and Nabassaga (2015) explored the effect of monetary policy on the lending behaviour of commercial banks in Zambia using bank-level data. Contrary to received evidence, the authors found that the bank lending channel in Zambia operates mainly through

large banks. The effect of monetary policy on medium-sized banks is moderate while it is virtually non-existent for smaller banks. Furthermore, the data does not show evidence of relationship lending for smaller banks. Overall, the findings of this investigation suggest that price signals, rather than quantity aggregates, matter the most in the transmission of monetary policy in Zambia.

Van den Heuvel (2005) in his study shows that monetary policy affects bank lending through two channels. They argued that by lowering bank reserves, contractionary monetary policy reduces the extent to which banks can accept reservable deposits, if reserve requirements are binding. The decrease in reservable liabilities will, in turn, lead banks to reduce lending, if they cannot easily switch to alternative forms of finance or liquidate assets other than loans. A study by Punita and Somaiya in 2006 on the impact of monetary policy on profitability of banks in India between 1995 and 2000 provided some dissenting evidence that lending rate has a positive and significant influence on banks' profitability, which indicates a fall in lending rates will reduce the profitability of the banks. It was also found out that bank rate, cash reserve ratio and statutory ratio significantly affect profitability of banks negatively. Their findings were the same when lending rate, bank rate, cash reserve ratio and statutory ratio were pooled to explain the relationship between bank profitability and monetary policy instruments in the private sector.

Amidu and Wolfe (2008) examined the constrained implication of monetary policy on bank lending in Ghana between 1998 and 2004. Their study revealed that Ghanaian banks' lending behaviour are affected significantly by the country's economy also supported by change in money supply. Their findings also support the finding of previous studies that the central bank prime rate

and inflation rate negatively affect bank lending. Prime rate was found statistically significant while inflation was insignificant. Based on the firm level characteristics, the study revealed that bank size and liquidity significantly influence bank's ability to extend credit when demanded.

Carrera (2011) found that tight monetary policy reduces the bank loan supply. Bernanke and Blinder (1992) justified this negative relationship as monetary tightening affects bank loan supply because banks refuse to make new loan contracts when old are expired. Kashyab and Stein (1995) compared the behavior of large and small banks against tight monetary policy. They concluded that small banks reduce their lending more as compared to large banks because large banks have power to neutralize the impact of monetary tightening. They get funding from issuance of commercial paper, equity etc. Addo and Seyram (2013) sought to examine the problem of high interest rates in Ghana and establish the strength of association between the Central Bank's policy rate and the lending rate of commercial banks. The study established a statistically significant strong positive relationship between policy rate and lending rates of the sampled banks; indicating that commercial banks' lending rate behaviour is affected by the Central Bank's policy rate and inflation rate. The study further discovered that the lending behaviour of the commercial banking institutions has been influenced by the monetary policies of the Central Bank. Efforts made by the Central Bank of Ghana to implement strict monetary policies resulted in reduction in policy rates and inflation.

2.4. Effects of Cash Reserve Ratio (CRR) on Bank Lending Behaviour

In recent years, some Central Banks have actively used cash reserve requirements on bank deposits and other bank liabilities in a cyclical manner to address systemic risk (Ajayi &Atanda, 2012).

Globally, CRR is applied as a liquidity and credit policy tool with a macro- prudential perspective (Dancourt, 2012). This is a long-held view that considered CRRs on deposits and lending capability of deposit money banks and as a supplemental monetary policy tool for macroeconomic purposes (Soludo, 2005). In several countries, the CRR with the implementation of inflation-targeting frameworks and short-term interest rates became the main monetary policy instrument and central banks' policy toolkit (Terrier, Valdes, Tovar, Chan-Lau & Fernandez. 2011).

CRRs are regulatory tool that requires banking institutions to hold a fraction of their deposits/liabilities as liquid reserves (Palley, 2004). These are normally held at the central bank in the form of cash or highly liquid sovereign paper. When applied to deposits, the regulation usually specifies the size of the requirement according to deposit type (demand or time deposit) and its currency denomination (domestic or foreign currency). The regulation also sets the holding period relative to the reserve statement period for which the CRR is computed, and whether they are remunerated or unremunerated. When they apply to new deposits from a reference period only they are referred to as marginal CRRs can apply to domestic or foreign (non-deposit) liabilities of bank's balance sheets. CRRs can also be applied on assets rather than on liabilities (Palley, 2004).

The active management of banks' CRRs can serve different macro prudential purposes (Zhang, 2011). They can serve as a tool for credit allocation to ease liquidity pressures. Central Banks have relied more on this tool to withdraw domestic liquidity surpluses, as a cheaper substitute for open-market operation instruments. Reserve requirement system has also become more embracing and been used to address a range of other policy objectives apart from credit policy such as macroeconomic management and financial stability. The monetary effects of reserve requirements

need to be explored in conjunction with other policy actions and not in isolation. Depending on the policy mix, higher reserve requirements tend to signal a tightening bias, to squeeze excess reserves of banks, to push market interest rates higher, and to help widen net interest spreads, thus tightening domestic monetary conditions (Palley, 2004).

CRR serves a countercyclical role for managing the credit cycle in a broad context in banks. In the upswing, hikes in CRRs may increase lending rates, slowdown credit and limit excess leverage of borrowers in the economy, thus acting as a speed limit (Ajayi & Atanda, 2012). In the downswing, they can ease liquidity constraints in the financial system, thus operating as a liquidity buffer. In this regard, CRRs can serve as a flexible substitute for other macro-prudential tools aiming at reducing credit dynamics. They are an alternative to more distortive quantitative restrictions such as credit ceilings.

Younus and Akhta (2009) examined the significance of cash Reserve Requirement (CRR) as a monetary policy instrument in Bangladesh. Using descriptive analysis techniques (trend analysis and summary statistics), they found CRR has experienced frequent changes and past evidence has shown that reduction in CRR produced positive impact on bank credit and investment especially prior to the 1990s. Cash Reserve Requirement (CRR) was found to be significant tools in lending to small and medium businesses, thus creating a significant relationship with banks' lending behavior to funding of SMEs. Olukoyo (2011) investigated the determinants of Commercial Banks' Lending Behavior in Nigeria employing multiple regression analysis and suggests that minimum cash reserve ratio has positive functional relationship with commercial banks loans and advances. The regression coefficients show that every 1% increase in cash reserve requirement for

commercial banks caused the loans and advances to change by 0.12%. This indicates that stipulated cash reserve requirement ratio of commercial banks may not necessarily translate into poor lending performance or lower proportion of commercial banks' funds available for lending respectively.

2.5. Effect of Open Market Operations Affect Bank Lending Behaviour

An open market operation (also known as OMO) is an activity by a central bank to buy or sell government bonds and bills on the open market (Kimani, 2013). A central bank uses them as the primary means of implementing monetary policy and the usual aim of open market operations is to control the short-term interest rate and the supply of base money in an economy, and thus indirectly control the total money supply (Markus, 2009). This involves meeting the demand of base money at the target interest rate by buying and selling government securities, or other financial instruments Gertler and Gilchrist, 2003). Monetary targets, such as inflation, interest rates, or exchange rates, are used to guide this implementation. Central banks use OMOs to adjust the supply of reserve balances so as to keep the federal funds rate around the target federal funds rate established Open market operations are the principal instrument in affecting the full range of credit and monetary conditions (Ngumi, 2006).

As the ultimate source of liquidity to the economy, the System cannot control total bank reserves precisely in the very short run because the monetary system of a modern economy must be able to respond flexibly to wide week-to-week changes in the demand for currency, bank deposits and credit that are imperfectly predictable as to timing and amount (Ngumi, 2006). But the System can and does exert a strong influence over the growth path of total bank reserves, deposits and credit

by varying over time the division between reserves provided without strings through open market operations and those provided with strings through the discount window (Markus, 2009).

Through open market operations, a central bank influences the money supply in an economy directly. Each time it buys securities, exchanging money for the security, it raises the money supply. Conversely, selling of securities lowers the money supply (Madura, 2003). Buying of securities thus amounts to printing new money while lowering supply of the specific security. The main open market operations are: Temporary lending of money for collateral securities ("Reverse Operations" or "repurchase operations", otherwise known as the "repo" market) (Gertler & Gilchrist, 2003). These operations are carried out on a regular basis, where fixed maturity loans (of one week and one month for the ECB) are auctioned off; Buying or selling securities ("direct operations") on adhoc basis and foreign exchange operations such as forex swaps (Markus, 2009). Treasury bills are the least risky and the most marketable of all money market instruments used by the government to raise money by selling bills to the public. T-bills have a maturity period of 91- and 182-day (Madura, 2003).

Principally, sales are conducted via auction, at which investors can submit competitive or non-competitive bids (Gertler & Gilchrist, 2003). A competitive bid is an order for a given quantity of bills at a specific offered price. If the bid is high enough to be accepted, the bidder gets the order at the bid price (Madura, 2003). Individuals can purchase T-bills directly at auction or on the secondary market from a government securities dealer. T-bills are sold at a discount from face value (cash payment at maturity) and pay no explicit interest payments (Markus, 2009). At the maturity of the bills, the holder receives from the government a payment equal to the face value of

the bill (Gertler & Gilchrist, 2003). T-bills are highly liquid, which means that they can easily be converted to cash and sold at low transaction cost with low price risk. It is therefore a preferred option by the banks to invest in (Markus, 2009).

Repurchase agreements on the other hand, play a crucial role in the efficient allocation of capital in financial markets. With a repurchase agreement (REPO), one party sells securities to another for cash with an agreement to repurchase the securities at a specified date and price. In essence, the repo transaction represents a loan backed by the securities (Madura, 2003). The lender has claim to the securities, in the case that the borrower defaults on the loan. Most REPOs are overnight transactions, with the sale taking place one day and being reversed the next day (Markus, 2009).

Ngumi (2006) employed a model of real economy with a single consumption to analyze corporate finance and the monetary transmission mechanism. The findings of the study were that, monetary policy through OMO does not affect bank lending through changes in bank reserves; rather, it operates through changes in the spread of bank loans over corporate bonds, which induce changes in the aggregate, composition of financing firms and in banks equity capital base. Kimani (2013) employed descriptive research design and analyzed data using descriptive analysis to assess the effects of monetary policies on lending behaviour of commercial banks in Kenya. The study found that Open market operations provides the bank with low risk investments with certainty in pay off and therefore, banks may prefer OMO and that OMO also controls the short-term market interest rate of base money in an economy.

Moreover, Borio (2012) used a model of monetary policy implementation in a corridor system to include the new liquidity regulation. The analysis of the study found that, correctly anticipating an open market operations effect on interest rates will require central banks to consider not only the size of the operation, but also the way the operation is structured and how it impacts on bank balance sheets.

2.6. Effect of Uncertainty Arising from Expected Change in Monetary Policies.

Due to financial crises, such as the one between 2007 and 2008, macroeconomic uncertainty has been given increasingly much attention (Markus, 2009). A common definition of uncertainty is that it is a non-measurable risk, which is not to be confused with risk that can be foreseen (Gatev & Strahan, 2003). Looking at this from an economic perspective, uncertainty is often generally defined as the conditional volatility of an unforecastable disturbance (Ng et al. 2015). To find a measure for macroeconomic uncertainty is in practice a challenge and there are numerous methods to approach this task. Macroeconomic change can reach commercial banks in several different ways (Kashyap et al. 2004). One is through central banks' policy decisions. The fact that there exists a connection between policy decisions and macroeconomic uncertainty is widely proven and accepted. This connection can go both ways, meaning that macro events can alter central banks' policy decisions, but similarly a central bank can contribute to macroeconomic uncertainty in a country (Gatev & Strahan, 2003).

Banks' lending to the private sector may be influenced not only by monetary policy actions and the movements of macroeconomic aggregates, but also may vigorously respond to variations in

macroeconomic uncertainty stirred by expected variation in monetary policies (Bloom, 2013). In particular, macroeconomic uncertainty will affect the cross–sectional distribution of commercial banks' loan–to–asset ratios (Baum & Evans, 2005). If banks are profit–maximizing enterprises which must acquire costly information on borrowers, then the decision to extend loans to new or existing customers will be affected by both the current and near–term expected state of the macro-economy as dictated by variation in monetary policies (Baum et al. 2005). Greater uncertainty about future economic conditions caused by change in monetary policies (and the likelihood of loan default) will have a clear effect on banks' lending strategies (Beaudry& Portier, 2001).

Thus, it is expected that there will be variations in macroeconomic uncertainty over the business cycle will affect the banking sector's asset allocation between loans and securities (Kashyap & Stein, 2004). Although the common characterization of monetary policy as ―pushing on a string highlights the importance of bankers' sentiment toward the economy's prospects, these linkages between macroeconomic uncertainty and the supply of loanable funds are more general questions than those of how banks behave during monetary policy contractions or expansions (Kashyap et al., 2006). Monetary policy changes directly constrain bank lending to borrowers. Borrowers who depend on bank lending are affected in that any change in banks' willingness to lend immediately affects their investment and spending decisions (Stever and Wilcox 2007). When it is not certain on the changes in the monetary policies, banks might be forced to withhold credit in fear that it might result to non-performing loans (Kashyap et al. 2004).

The uncertainty may lead to herding behaviour by commercial banks. The banks therefore in the uncertainty mimic the behaviour of the leading institutions (Markus, 2009). According to Kashyap

et al. (2004), herding refers to the cases where banks make the same or similar risk-taking, management, and asset holding decisions. They further explained that herding can occur either when banks sharing the same information or facing similar circumstances rationally make similar decisions, or when banks intentionally mimic the lending behavior of each other. Herding among banks may create or facilitate a number of potential problems, given the important role of banks in the economy. These problems include deterioration of lending standards, misallocation of lending resources, asset price bubbles, increased systemic risks, and exacerbation of the business cycle (Stever and Wilcox 2007).

Quagliariello (2007) who used a sample from Italy for the years 1990Q1- 2005Q1 including approximately the entire Italian banking system and found that uncertainty in macroeconomic conditions does influence banks' investments strategies. During increasing macroeconomic uncertainty, the banks will obtain more volatile signals on the expected returns of loans, hence they will operate more homogeneously. Furthermore, Bynoe (2010) have investigated the impact of macroeconomic uncertainty on commercial bank lending behaviour in Barbados during the period 1996Q1 until 2009Q4. The author defines the dependent variable as the cross-sectional variance of the loan-to-asset ratio. The result shows that there is a negative relation between the loan-to-asset ratio of commercial banks and macroeconomic uncertainty. Moreover, Talavera et al. (2006) investigated the macroeconomic uncertainty and bank lending in Ukraine and found a negative relationship between bank loan to capital ratio and macroeconomic uncertainty as proxy by the conditional variance of consumer or producer inflation or volatility in money supply (M1 and M2) and its component (demand and time deposit) with banks increasing their lending ratios when macroeconomic uncertainty decreases.

In effect, it can be surmised that the reaction of banks to changes in uncertainty is not uniform and depends on bank-specific characteristics particularly bank size and profitability. For the bank-specific factors, changes in monetary aggregates which can be related to macroeconomic policies are relatively more important for large banks than for small banks counterparts. This shows that small banks are less able to change their behaviour over time in response to changes in monetary policy and their lending depends to a much greater extent on capital. Also, monetary policy uncertainty factor is significant for bank lending behaviour in the case of more profitable banks but less significant for the less profitable (Talavera et al. 2006).

2.7. Summary

In summary, there are a number of empirical studies on the effects of monetary policies on bank rates determination of interest rate margins and spreads, focusing on different set of factors (bank-specific, industry-related and/or macroeconomic factors) and methodologies (time series and panel data methods), depending on the type of data, frequency and coverage (panel of banks, countries or country-specific analyses). That notwithstanding, there is still paucity of empirical studies on determination of interest rate spreads with respect to African countries, particularly at the bank-level or industry level, despite the fact that a number of African countries like Kenya continue to grapple with the challenge of higher interest rate spreads. Moreover, due to data constraints most empirical studies generally limit the empirical analyses of interest rate spreads to ex post computation of spreads based on the balance sheets of banks and income statements, typically using net interest margin as a measure of spreads. There are comparatively fewer studies that directly compute the interest rate spreads based on the observed actual interest rates charged on loans vis-a-viz interest rate on deposits as has been undertaken in this study.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter concentrates on the research methodology used in obtaining the data. These include the research design, sampling, data collection and analysis techniques among others.

3.2. Research Approach

To achieve the objectives of this study, both qualitative and quantitative research approaches were adopted. The choice of the qualitative approach was to allow for a deeper understanding of the impact of the monetary policy rate on the lending rate of Cal Bank. This approach was considered because it enables the researcher to collect information in a manner that is systematic and comprehensive and this is helpful in obtaining in-depth understanding of issues for the addressing of the set objectives. Qualitative approaches also afford the researcher an opportunity to be involved in a sustained and intensive interaction with the participants. Another advantage of the qualitative approach is that, it makes use of multiple sources of data and this is enriches the study.

3.3. Sampling Technique

The purposive sampling method was used in obtaining our sample for the study. This method selects the sample based on defined characteristics of the population. The sample selected were chosen due to their direct influence in the decision process of what the base rate of the Bank should be. This technique was judged to be the most appropriate in order to gain first-hand information from the right stakeholders in Cal Bank as well as eliminate ambiguous assumptions from Officers who may not understand the base rate process.

3.4. Sample Size

The population of respondents for this study includes all the members of the Asset and Liability Management Committee of the Bank who are the decision making and approving body for what pricing strategy should be deployed for the Bank. The population size is thirteen (13) however, due to time and resources availability constraints, the study narrowed the sample to 5 of the total of 13.

3.5. Instrumentation

The research instrument used for this study was a questionnaire as well as an interview guide. These methods were chosen because the research is a case study and therefore requires instruments that afford the respondents the opportunity to provide in depth and unrestricted information about the subject. This also enables the researcher to probe further on issues that require further clarification. The interview guide was designed taking into consideration the research questions and objectives. The purpose of the guide was to ensure that the researcher does not deviate from the topic so that all issues related to the study is be covered in each interview session.

3.6. Sources of Data

The study makes use of both primary and secondary data. By using both sources of data, the study makes a solid comparison between the results garnered from the questionnaires and interviews, and the analysis of the secondary data.

The primary data is first-hand information that is be obtained from the respondents being interviewed.

3.6.1. Primary Data

A questionnaire was deployed to gather information on what processes lead to the tabulation of lending rates and how that the monetary policy rate influences this process. Primary data is the raw information before the processing is done. It mainly consists of numerical collections of raw information to be analyzed and evaluated. The term primary data may sometimes be used to refer to first-hand information. Carefully crafted but wide-ranging questionnaires aimed at eliciting right responses were constructed. With the questionnaires, each respondent was asked to respond to the same set of questions. Questionnaires provide an efficient way of collecting responses from a large sample prior to quantitative analysis. The advantage of using questionnaires is that it is a written proof of how the data was gathered from the respondents. According to Yin (1994), questionnaires are the most appropriate method in gathering data from large number of respondents in different locations. Also, Bryman (2004) suggests that, the appeal of the questionnaire partly stems from its cheapness and quickness in terms of administration, the absence of the interviewer effect and its convenience for correspondence. Apart from these advantages, questionnaire also enables one to collect standardized information in respect of the same variables for everyone in the sample selected Parfitt (1997) as cited in Zahari, (2007). From this, questionnaires becomes an indispensable tool in gathering primary data about people, their behavior, attitudes, opinions and awareness of specific issues.

The questionnaires were semi-structured, containing both open-ended and closed-ended questions. The closed-ended questions required the respondents to make choices from alternative responses. These types of questions are in the form of multiple choices, either with one answer or with check-all-that-apply, but also can be in scale format, where respondent decide to rate the situation along the scale continuum. The open-ended questions are unstructured questions in which possible

answers are not suggested, and the respondent answers it in his or her own words. The open-ended questions provided space for the respondents to give their own answers to questions where appropriate. An advantage of the semi-structured questionnaire is that while the closed-ended questions make the questionnaire easy to complete, the open-ended questions provide the opportunity for respondents to give more detail information about the issues being investigated. Once the data was gathered from the respondents, the researcher analyzed and discussed it. Primary data was also collected using interviews.

3.6.2. Secondary Data

The study made use of data from the Bank of Ghana Data Centre available on its web page. The Data Centre provides information on a wide variety of economic indicators however only those pertaining to this study was obtained. Monthly data was obtained on Monetary Policy rates, Treasury Bill rates and Average Interbank Rates from the beginning of 2010 to the end of 2017.

3.7. Econometric Model

As mentioned earlier in this chapter, this study made use of both quantitative and qualitative methods.

As part of the quantitative methods employed in the study, an econometric model was estimated with the bank's lending rate as the dependent variable. This is in line with the model used by Kelilume (2014) to explain the relationship between the monetary policy rate and the bank lending rates.

The model is:

$$BLR_t = \beta_0 + \beta_1 MPR_{t-1} + \beta_2 TBR_{t-1} + \beta_3 IBR_{t-1} + \varepsilon_t$$

where;

BLR_t = Monthly Lending rate of Cal Bank

MPR_{t-1} = Monetary Policy Rate at time t-1

TBR_{t-1}= 91 Day Treasury Bill Rate at time t-1

IBR_{t-1} = Interbank Lending Rate at time t-1

β_0 is a constant; β_1, β_2 and β_3 are Beta coefficients and ε represents the error term.

The regression is a one-timed regression model in that the outcome of the dependent variable is explained by the data from the previous month. Apart from the monthly Lending rate of Cal Bank which is obtained from the Bank, all other variables are measured by obtaining the monthly estimate reported by the Bank of Ghana data centre. Each variable is represented as a percentage and so the basis for comparison is justified. All the independent variables MPR_{t-1}, TBR_{t-1} and IBR_{t-1} are expected to show a significantly positive relationship with the dependent variable, BLR_t.

3.8. Estimation Technique

The model will be estimated using the Ordinary Least Squares method to estimate the time series model. The model is a time series model because it has many observations taken over a period of 84 months for a single cross section (Cal Bank).

3.9. Limitations of the methodology

There are many other macroeconomic variables such as Inflation and Exchange rates that affect the lending rates of Banks but all these are factored into the Monetary policy decision and expressed in the Monetary policy rate. A more expanded model that includes these other factors could have been expressed in the model but the study chose to focus on only the variables that would meet the objectives of the study.

3.10. Conclusion

This chapter has outlined the methodology that was employed in analysing the data that was gathered in the study. It also outlined the sources of data, the types of data used and the research design. In chapter four, the analysis of the data will be presented.

CHAPTER FOUR

DATA ANALYSIS

4.1. Introduction

This chapter presents the findings of the study and includes a detailed discussion of the results obtained employing the methodology outlined in the chapter three. The remainder of the chapter is split into three: the first part deals with the results obtained from the questionnaires and the interview that were conducted using staff as respondents. The second part presents the results obtained from our econometric model and the final part is a discussion of the results obtained within the context of the literature. The study was carried out to achieve the following objectives:

i. Examine the relationship between Monetary Policy Rate and Lending Rate of Cal Bank.
ii. Establish the effects of cash reserve ratio on lending behavior of Cal Bank.
iii. Find out the extent to which open market operations affect lending behavior of Cal Bank

The analyses conducted herein are done within the context of the objectives stated above.

4.2. Summary of Responses Obtained from Staff of Cal Bank

Using the questionnaire attached in the appendix, the researcher interviewed 5 Asset and Liability Committee Members with the Treasurer and the Financial Controller being key in the initial computation of the Base rate of the Bank. The aim of the questionnaire was to gain the perspective of the bank on what the effect of the monetary policy rate is on the lending rate of the bank, and to also ascertain the impact of the cash reserve ratio on the lending behavior of the bank. The questionnaire also included a section on the impact of open market operations by the central bank, on the lending behavior of Cal Bank. The chapter presents an analysis of the responses garnered

from the 5 officers on the impact of the central bank's monetary policy on the lending behavior of Cal Bank Ghana Limited.

4.2.1. Demographic characteristics of respondents

This section of the study presents findings on the demographic information of the respondents. The demographic characteristics of respondents provide vital information about the respondents who took part in the study. Demographic variables captured in the study were gender, age, number of years at Cal Bank, number of years in the banking industry.

4.2.2. Gender of respondents

Table 4.1 below presents a breakdown of the gender of respondents surveyed. Out of the 2 staff within the Asset and Liability Management Committee of the bank, 1 was female representing 20% of the total number of respondents while the remaining 4 were male representing 80% of the sample. This sample is not representative of the demographic breakdown of staff in the entire Bank and this may be considered as one of the limitations of the study. Due to time constraints and work schedules coupled with the availability of people, the interview took precedence over finding a representative gender sample.

Table 4.1 Gender of Respondents

Gender	**Frequency**	**Percentage**
Female	1	20
Male	4	80
Total	**5**	**100**

Source: Field Data, 2017

4.2.3. Age of respondents

Table 4.2 Age Profile of Respondents

Age Range	Frequency	Percentage
25-34	1	20
35-44	1	20
45+	3	60
Total	**5**	**100**

Source: Field Data, 2017

Respondents were also asked for their ages using a range rather than an absolute age value. This is because respondents may want to keep their age private but are less likely to reject a range as it does not reveal the actual age. Based on previous studies identified in the literature, the ages were broken down into three categories as follows: 25-34 Years, 35-44 Years, 45+ Years. From table 4.2 above, it shows that the majority of the respondents were in the 45+ age group with 60% (3) of the respondents falling in that age range. Both the 25-34 age range and the 35-44 age range had one respondent each, individually, this represented 20% of the sample, together they represent 40% of the sample.

4.2.4. Number of Years at Cal Bank

To give additional credence to the findings of our study, the study asked respondents for the number of years that they had been working at Cal Bank. The study posits that, a larger number of years spent working at Cal Bank will mean a greater likelihood of understanding the topic at hand. Given that banks are heterogeneous in their lending practices, and also that this study is focused on Cal Bank, we feel justified in asking this question of our respondents. Table 4.3 below presents

a summary of the number of years spent in Cal Bank from our respondents. The table shows that in total, the number of years working at Cal Bank for all our respondents is 41 years. This gives an average of more than 8 years per respondent. The least number of years spent at the bank was 5 years, while the longest number of years spent there was 12 years.

Table 4.3 Number of Years at Cal Bank

Respondent	**Number of Years at Cal Bank**
A	7
B	5
C	12
D	9
E	8
Total	**41**

Source: Field Data, 2017

4.2.5. Number of Years in the Banking Industry

The questionnaire also sought to determine the number of years in total that our respondents had worked in the banking industry; this is in-line with the decision to ask about the number of years in which the respondents had worked in the bank. Although admittedly, all banks have different methods and models to determine their lending behavior, the impact of monetary policy on bank lending decisions can be generalized to a large extent. Thus, by further asking our respondents about the length of their experience in the banking sector as a whole, we would also be able to give additional credence to our results because our respondents will be in a better position to speak to

the impact of monetary policy on lending behavior of banks in general, and would thus be able to further elaborate on what pertains at Cal Bank.

Table 4.4 Respondents' Years in Banking Industry

Respondent	**Number of Years in Banking Industry**
A	10
B	5
C	19
D	14
E	10
Total	**58**

Source: Field Data, 2017

Table 4.4 above shows that, taking the respondents as a whole, they had between them some 58 years of experience in the banking industry, on average; each respondent had 11.6 years working experience in the banking sector. Thus, clearly, we can say that our respondents had a fair idea of what are main area of interest in this study is. However, using the average figure hides the fact that while one respondent had only 5 years' working experience in the banking industry, another respondent had 19 years' work experience in the same industry.

4.3. Monetary Policy Rate and Lending Rate of Cal Bank.

This section presents and discusses the findings in relation to the first objective of examining the relationship between monetary policy rate and lending rate of Cal Bank.

4.3.1. Regression Analysis Results

Table 4.5 Summary Statistics of Variables

Variable	Observations	Mean (%)	Std. Deviation (%)	Minimum (%)	Maximum (%)
Cal Base Rate	84	26.55238095	1.893805768	24	31.9
MPR	84	17.79761905	4.595780574	12.5	26
TBR	84	19.51272619	5.569563281	9.13	25.83
IBR	84	18.10238095	5.632281872	6.35	25.51

Source: Cal Bank Risk Department & Bank of Ghana Data Centre, 2017

Table 4.5 above presents the summary statistics of the variables used in the regression. There were 4 variables in all as pointed out in the Methodology. According to the table above, there were 84 observations for all the variables. The mean Cal Base rate was 26.55%, while the standard deviation was 1.89% suggesting that the base rate of the bank did not change very often during the period under consideration but stayed fairly close to the mean. The minimum base rate was 24% which was recorded in August of 2011 when the InterBank rate was also lower than its recorded average.

The maximum of 31.9% was recorded at a time when interest rates were on the rise and the InterBank rate was also high at around 16.11%. The InterBank rate recorded a mean value of

18.10% which is much lower than the average Cal Bank base rate for the same period under review. It had a high standard deviation which was expected given that it had many periods where there were considerable increase and decreases in the rate during a short time period.

The Monetary Policy Rate (MPR) recorded an average value of 17.80% and a standard deviation of 4.6% showing that the rate changed often but not as frequently as the InterBank rate did. It recorded a low figure of 12.5% between July of 2011 and January 2012. The maximum value was 26%. The Treasury bill rate also recorded an average of 19.1% for the period of the study with a standard deviation of 4.6% and a minimum value of 11%. It also recorded a maximum value of 25.83%.

Table 4.6. Summary Results of One-time lagged regression model

R Square	0.706202486
Adjusted R Square	0.695185079
Standard Error	1.000810761
Observations	84

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	22.12419699	0.553837481	39.94709234	1.3014E-54
MPR	0.079973512	0.065450239	1.221897947	0.22533446
TBR	-0.139741076	0.045725049	-3.056116513	0.00304693
IBR	0.311673188	0.078904154	3.950022535	0.00016733

Regression Results

Table 4.6 above shows the results after of the estimated regression model outlined in the Methodology. It shows that a total number of observations regressed are 84 (monthly observations from January 2010 to December 2016). The high R-squared (≈0.71) and Adjusted R-squared

(≈0.70) that was computed confirms that all the independent variables (IntBkWAve, TBR-91 day, MPR) used in the model for predicting the monthly lending rate of Cal Bank at time, t are very significant. They altogether explain over 70% of the variation in the monthly lending rate of Cal Bank.

The Table also summarizes the coefficients of the independent variables in the model, their standard errors, their t-statistics and their respective p-values. With reference to the p-values, it is clear that the most significant variable in the model after the intercept (constant) is the IBR (Interbank Lending Rate at time, t-1) and has a positive slope which implies that an increase in the Interbank Lending Rate at time t-1 would result in an increase in the monthly lending rate of Cal Bank at time, t. The next significant variable within the model after the IBR is the TBR (91 Day Treasury Bill Rate at time, t-1) which however has a negative slope implying that an increase in the TBR would have a decreasing effect on the monthly lending rate of Cal Bank at time, t. The least significant variable in the model is MPR (Monetary Policy Rate at time, t-1) and has a positive slope. This turned out to defy the expectation of a strong positive relationship.

Discussion of Regression Results

The theoretical underpinnings from this study are derived from classical macroeconomics, where it is expected that a rise in the policy rate is likely to lead to a rise in the base rate of commercial banks who borrow from the central bank at the policy rate (Olokoyo, 2011; Bernanke, 2003). However, in the case of Cal Bank, we observed that the base rate of the bank stayed the same for a long period of time while the policy rate changed many times. Responses obtained from the qualitative part of the study suggest that, out of the four main components of the base rate

calculation, only one component includes the monetary policy rate. This finding implies that BoG's monetary policy rates do not play a crucial role in the final determination of lending rates at Cal Bank.

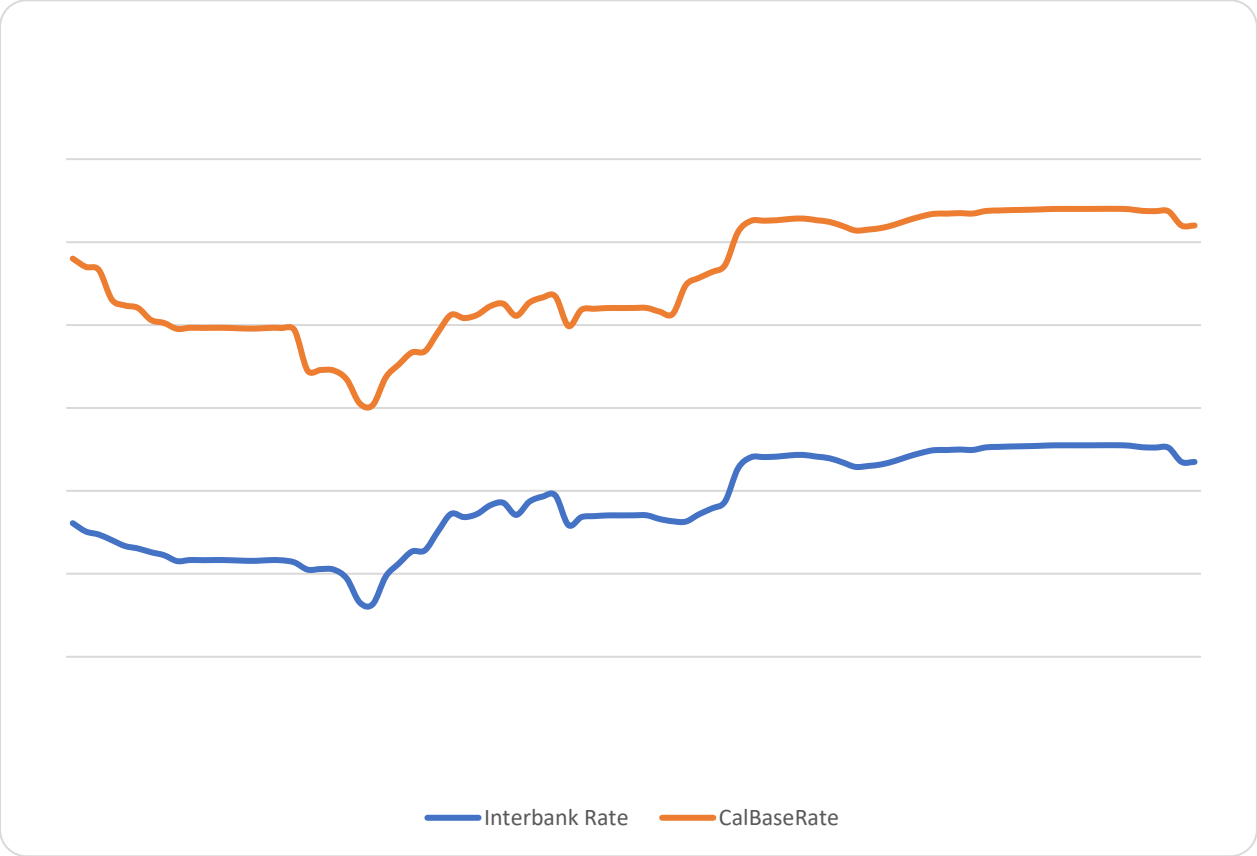
This observation however supports the findings of Mishra et al. (2010) that the ideal situation is that changes in monetary policies should be accompanied by changes bank lending rates all things being equal. However, due to fundamental structural inefficiencies and underdevelopment of financial markets, banks do not only rely on monetary policies in setting their lending rates. This finding further support what Mishra and Montiel (2012) concluded to the effect that monetary policy transmission in developing countries tends to be weak and as such, banks tend to use factor into the equation several components in setting their lending rates.

The relationship between the component and the policy rate is such that each time the policy rate rises, the component and the Cal Base Rate rise as well, which is arguably the reason why the coefficient of the MPR variable in our model above has a positive sign. The Interbank Rate seems to be a better determinant of the base rate than the monetary policy rate. Aside from its high statistical significance (less than 1%), a plot of the two rates shown in figure 4.1 below establishes a near identical path for both rates. Given that in practice, banks borrow more frequently from each other especially in the Overnight Market than from the Central Bank for example, we can support our findings with the practical banking operations.

This finding corroborates what Olokoyo (2011) found to the effect that commercial banks' lending behaviours are largely determined and influenced by a lot of factors such as the prevailing interest

rate, the volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio, prestige and public recognition. This finding further echoes what Adam (2009) concluded to the effect that using one only monetary policy especially in developing countries does not work and that the effectiveness of monetary policy depends on a well-orchestrated and coordinated utilization of various instruments such as Open Market Operations (OMO), Repo rate; Interest rates; Money supply; Exchange Rates; Balance of Payment.

Figure 4.1 Cal Bank Base Rate versus the InterBank Rate (2010-2016)



Source: Field Data, 2017

4.3.2. Results from Respondents on relationship between MPR and Cal Bank Base Rate

This section presents the results obtained from questions that focused on the first objective of the study, which is to examine the relationship between the monetary policy rate and the bank's (Cal Bank) lending rate. The first question sought to establish whether the respondents felt that the monetary policy rate had any relationship with banks' lending rate. The results obtained showed that all the respondents were in agreement that the monetary policy rate had a relationship with the banks' lending rate. The prime rate is the rate at which the central bank lends to the commercial bank, theoretically, a fall in the prime rate should lead to a fall in the lending rates of banks. However, from the interviews with the respondents, the study established the following:

i. The bank computes its own base rate in line with the Central Bank's standardized Base computation formula.

ii. The Base rate which is the minimum lending rate of the Bank is reserved for its premium customers.

iii. The main inputs of the base rate computation formula are:

- Cost of Funds
- Cost from Operational Expenses
- Profit Margin
- General Provision for Loss

iv. Of these four components, only the profit margin component contains the 91- Day Treasury bill rate, which is directly impacted on by the monetary policy rate.

4.4. Effects of Cash Reserve Ratio on Lending Behavior of Cal Bank

In section 4.3 above, the study found the four main components of Cal Bank's base rate computation model. Of the four components, the cash reserve ratio directly affects only one particular element, this is the cost of funds component of the base rate computation. The respondents revealed that, the bank applies the following formula in computing its cost of funds:

Cost of funds is equal to the total annualized interest payable, divided by (total average deposits-primary reserve requirement-cash in vault) which is represented mathematically as:

$$\textbf{Cost of funds} = \frac{\textbf{Total Annualized Interest Payable}}{(\textbf{Total Average Deposits} - \textbf{PRR} - \textbf{Cash in Vault})}$$

From this formula, it can be inferred quantitatively that as the reserve requirement increases, the cost of funds increases because the denominator will get small and thus, the entire fraction will get bigger. The cost of funds can be looked at as a cost which must be covered, thus when it rises, the lending rate will ultimately also rise. It is also clear on the other hand that, when the primary reserve ratio falls, then the cost of funds will also fall because the denominator will be comparatively larger. This finding supports what Younus and Akhta (2009) and Olokoyo (2011) found to the effect that minimum cash reserve ratio has positive functional relationship with commercial banks loans and advances.

4.5. Impact of Open Market Operations on Lending Behavior of Cal Bank

To answer operationalize the third objective, the study asked the respondents about how the central banks' open market operations affect the lending behavior of the bank. The responses obtained showed that the main policy tool used in open market operations in Ghana is the Treasury bill rate. The Treasury bill rate is the rate at which the central bank borrows money from the public. In the computation of the bank's base rate, the profit margin component which is one of the four components of the base rate for Cal Bank is set out in equation form below:

$$\textbf{Profit Margin} = \textbf{Risk Premium} + \textbf{Risk Free Return}$$

$$\textbf{Risk Premium} = \frac{\textbf{Expected Return on Equity} * \textbf{Capital Adequacy Ratio}(10\%)}{(1 - \textbf{Corporate Tax}\ (30\%)}$$

Risk free Return = Prevailing Treasury Bill Rate x Capital Adequacy Ratio

What the above equations show is that, when the central bank conducts its OMO to inject liquidity into the system, the central bank invariably increases the prevailing Treasury bill rate because it will have to offer a higher rate to buy back the bills from the public. Thus, the right-hand side of the Profit Margin Equation increases. Central banks conduct open market operations to achieve their monetary policy objectives (Kimani, 2013; Markus, 2009). Generally, open market operations are conducted to either mop-up excesses liquidity in the system, or to improve liquidity in the system. In Ghana, open market operations are either in the form of the central bank selling treasury bills or buying back treasury bills. Each of these actions has an effect on the lending behavior of banks and is explained briefly below:

- Selling of Treasury Bills: The sale of treasury bills is done generally to mop-up excess liquidity in the system by reducing the supply of money in the economy. By selling treasury bills, the central bank takes money from the general public and offers them treasury bills instead, reducing the amount of demand deposits for example, since people may go for their demand deposits and purchase treasury bills instead. Additionally, it is not only the individuals who purchase treasury bills, banks and other large corporate organizations purchase treasury bills primarily as an investment but also as a risk management measure.
- Buying Treasury Bills: The central bank buys treasury bills when it wants to inject some liquidity into the system. By buying treasury bills, the bank puts cash into the pockets of the purchasers of the bills who may now decide either to spend the cash received or deposit the money in bank. When the central bank buys back treasury bills, banks and other corporate institutions who own treasury bills are also going to receive money from the central bank as payment for the bills. This creates an amount of liquidity in the system.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

Having analyzed and discussed the data collected in the previous chapter, this chapter essentially focuses on the summary, the conclusions and the recommendations.

5.2. Summary of the study

This study had sought to determine the impact of monetary policy mechanisms on the lending behaviour of Cal bank Ltd. This study used both primary and secondary data to operationalize the stated objectives. The study used the purposive sampling technique to collect data from five key and relevant officials of Cal Bank as well as the use of a regression model with data obtained both from Cal Bank and the Bank of Ghana Data Centre. The summary of the main findings are as follows:

With respect to the first objective of examining the relationship between monetary policy rate and lending rate of Cal Bank, this study found that BoG's MPR does not have a strong effect on Cal Bank's lending policies and therefore supporting what authors such as Bernanke (2005) and Akhtar (2006) that the effectiveness of monetary policy and its relative importance as a tool of economic stabilization varies from one economy to another, due to differences among economic structures, divergence in degrees of development in money and capital markets resulting in differing degree of economic progress, and differences in prevailing economic conditions. In relation to the second objective of establishing the effects of cash reserve ratio on lending behaviour of Cal Bank, this study found that cash reserve ratio affects the cost of funds of Cal Bank and therefore ultimately

affecting the bank's lending rates. With respect to the third objective of investigating the extent to which open market operations affect lending behaviour of Cal Bank, this study found that OMO especially Treasury bill rates affect Cal Bank's lending behaviours.

5.3. Conclusion of the study

Cal Bank's lending behaviour is determined by a multiplicity of factors and components such as cash reserve ratio, Treasury bill rates but BoG's monetary policy rate does not significantly affect the bank's lending behaviour. It is also undeniable that the cash reserve ratio has an effect on the bank's lending behaviour.

The study also resoled that reserve requirements cause immediate liquidity problems for the bank thereby influencing its cost of funds and ultimately, its lending behaviour. Cal Bank participates in open market operations to a great extent and this factor influences the bank's lending behaviour. The study also postulates that open market operations provides the bank with low risk investments with certainty in pay off and therefore Cal Bank may prefer OMO (Treasury bills and BoG bills) and that Treasury bills also control the short-term market interest rate of base money in an economy.

Finally, this study reasons that Ghanaian commercial banks remain dominant in the banking system in terms of their shares of total assets and deposit liabilities. Their total volume of loans and advances, which is significantly deployed 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. However, both government and commercial banks should be mindful of

the facts that the environments in which they operate are important factors in the bank performance and behavior. Where the environment is conducive and supportive, performance is enhanced and good lending behaviour guaranteed. But where the environment is unstable and harsh, the bank's performances suffer. Commercial 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. It therefore follows that effort should be made by commercial banks to enforce the most easily realizable policies and good credit management in every situation.

5.4. Recommendations of the study

Based on the findings in this study, the following considerations are key for Government as well as Banks in Ghana:

i. It is key for the Central Bank to include the Monetary policy rate in the standardized base rate computation formula if it truly intends to use the Monetary Policy rate as an interest rate measure.

ii. Ghanaian commercial banks should adopt best practice credit procedures, policies and analytical capabilities for the purpose of effective risk management.

iii. Commercial banks should strategize on how to attract and retain more deposits so as to further improve on their lending performance. Government must ensure that Banks in Ghana also enjoy a fair distribution of deposits of Government agencies and State-Owned Enterprises.

iv. Closer consultation and cooperation between commercial banks and the regulatory authorities is encouraged so that the effect of regulatory measure on commercial banks will be taken into account at the stage of policy formulation.

v. The cost associated with lending to priority sectors as a national goal, should be borne by the society as a whole through the government budget instead of burdening the commercial banks with such cost. This is necessary because the commercial banks cannot afford to overprice or underprice their loans for efficient lending performance.

vi. Ghanaian commercial banks should ensure good planning which encompasses budgeting, reviews and incentives. They should formulate critical, realistic and comprehensive strategic and financial plans. This will help them be better positioned to enjoy the positive effects of macroeconomic factors such as change in gross domestic product and foreign exchange in a volatile environment such as the Ghanaian economy.

vii. It is essential for commercial banks to build system and skills in liquidity management, assets and liability management and foreign exchange management.

viii. Finally, banks should try as much as possible to strike a balance in their loan pricing decisions. This will help them to be able to cover cost associated with lending and at the same time, maintain good banking relationship with their borrowers.

5.5. Direction for further study

Other researchers could embark on this same subject as new and improved data becomes available. Other statistical methods could also be used to either support or challenge the findings of the study. In so doing, more independent variables such as the effect of Inflation and Exchange rates could be explored to examine whether they are significant im the determination of lending of Banks. The scope of the study could be expanded to other Banks in Ghana to ascertain whether the situation of Cal Bank qualifies a s a standard.

References

Acheampong, K. (2005). Bank Interest Rate Channel of Monetary Policy Transmission in Ghana. BoG Working Paper, WP/BOG-05/10. Accessed on March 1st, 2017 from https://www.bog.gov.gh/...policy.../708-bank-interest-rate-channel-of-monetary-polic...

Addo, A., & Seyram, Z. A. (2013). Central bank's policy rate on the cost of borrowing from some selected commercial banks in Ghana.

Ahokpossi, M. C. (2013). *Determinants of bank interest margins in sub-Saharan Africa* (No. 13-34). International Monetary Fund.

Ajayi, K.& Atanda, A. (2012) Effect of monetary policy instruments on banks' lending disposition, *Journal of Business and Management Research,* 7(3), 125-139

Ajie, H. A., & Nenbee, S. G. (2010). An Econometric Analysis of Monetary Policy and Stock Prices in Nigeria: 1986-2008. International Journal of Economic Development Research and Investment, 1 (1), 175, 192, 25201986-2008.

Akhtar, S. (2006). Pakistan—Economic Outlook and Prospects. Speech Delivered at the Adam Smith Institute, Thun, Switzerland, June, 27.

Amidu, M., & Harvey, S. K. (2008). The Impact of Monetary Policy on Banks' Credit in Ghana. Global and Local Dynamics in African Business and Development, 1.

Amidu, M. (2006). The link between monetary policy and banks lending behaviour: the Ghanaian case. Banks and Bank Systems, 1(4), 38-48.

Asamoah, L. A., & Adu, G. (2016). An Empirical Analysis of the Determinants of Interest Rates in Ghana. Journal of African Business, 17(3), 377-396.

Baah-Wiredu K (2007). Republic of Ghana 2007 budget. The ministry of finance, Ghana

Baum, C. F., Caglayan, M., & Ozkan, N. (2004). The second moments matter: The response of bank lending behavior to macroeconomic uncertainty.

Bernanke, B. S. (2003). Some Thoughts on Monetary Policy in Japan, *speech delivered at the Japan Society of Monetary Economics*, Tokyo, May 31.

Bernanke, B. S., & Blinder, A. S. (2002). The Federal Funds Rate and the Channels of Monetary Transmission, *American Economic Review,* September 901-21.

Bernanke, B. S., & Blinder, A. S. (1992). The federal funds rate and the channels of monetary transmission. *The American Economic Review, 82*(4), 901–921.

Bibow, J. (2000). *The Loanable Funds Fallacy in Retrospect.* History of Political Economy, Volume 14 Number 5 71.

Bloom, N (2013). Fluctuations in Uncertainty. NBER Working Paper Series, No. 19714
Borio (2012). (BIS), the Liquidity Coverage Ratio and Policy Implementation. Quarterly Review, http://.www.bis.org/press/p120108.htm/September, 2012.

Bynoe, R (2010), "The Impact of Macroeconomic Uncertainty on Commercial Bank Lending Behavior in Barbados", Caribbean Centre for Money & Finance, Annual Monetary Studies Conference

Chodechai, S. (2004), *Determinants of Bank Lending in Thailand: An Empirical Examination for the years 1992 – 1996*, Unpublished Thesis.

Chowdhury, I., Hoffman, M., & Schabert, A., (2003). Inflation Dynamics and the Cost channel of Monetary Transmission. *European Economic Review* 50(2006) 995–1016.

Chowdhury, I., Hoffmann, M., & Schabert, A. (2006). Inflation dynamics and the cost channel of monetary transmission. *European Economic Review*, *50*(4), 995-1016.

Crowley J (2007). "Interest Rate Spreads in English-Speaking African Countries". IMF working paper, WP/07/101.(Washington: International Monetary Fund).

Churchill, R.Q., Kwaning, C.O & Ababio, O. (2014). The Determinant of Bank Interest Rates Spreads in Ghana. *International Journal of Economic Behavior and Organization*, Vol. 2, No. 4, 2014, pp. 49-57.

Cottarelli C, Kourelis A (1994). Financial Structure, Bank Lending Rates, and the Transmission Mechanism of Monetary Policy, IMF Staff Papers, 41(4): 587–623.

Dancourt, O. (2012) Banking credit, policy interest rate and reserve requirements in Peru. IDEAS: Research Division of Federal Reserve Bank of St Loius.

Ehrmann, M., Gambacorta, L., Martínez-Pagés, J., Sevestre, P., & Worms, A. (2001). Financial systems and the role of banks in monetary policy transmission in the euro area.

Faure, P., (2003). *Getting to grips with the equity market.* Cape Town: Quoin Institute (Pty) Limited.

Gatev, E & Strahan, P (2003), "Banks' Advantage in Hedging Liquidity Risk: Theory and Evidence From the Commercial Paper Market", NBER Working Paper Series, No. 9956

Gertler, M., & Gilchrist, S. (1994). Monetary policy, business cycles, and the behavior of small manufacturing firms. The Quarterly Journal of Economics, 109(2), 309-340.

Ioannidis, C., & Kontonikas, A. (2006). Monetary policy and the stock market: some international evidence. Department of Economics, University of Glasgow. No. 2006_12.

Kashyap, A. K. & Stein, J. C. (2000). What do a million observations on banks say about the transmission of monetary policy? *American Economic Review*, 90(3), 407-428.

Kashyap, Anil K., Jeremy C. Stein, & David W. Wilcox, (2006). Monetary policy and credit conditions: Evidence from the composition of external finance: Reply. *American Economic Review*, 86, 310–14.

Kashyap, A. K., & Stein, J. C. (1995, June). The impact of monetary policy on bank balance sheets. In *Carnegie-Rochester Conference Series on Public Policy* (Vol. 42, pp. 151-195). North-Holland.

Keeton, W. (2001). Equilibrium Credit Rationing. New York: Garland Press

Kuttner. K. & Mosser. P. (2002) *The Monetary Transmission Mechanism: Some Answers and Further Questions*. U.S: FRBNY Economic Policy Review.

Loayza, N., & Schmidt-Hebbel, K. (2002). Monetary policy functions and transmission mechanisms: an overview. Monetary Policy: Rules and Transmission Mechanisms, 1, 1-20.

Madura, J., (2003). *Analysis and Evaluation of the Eurex Repo Market Model*. Unpublished MBA thesis s Institution / College Leopard-Franzens University, Innsbruck (Banking and Finance)

Markus K. B., (2009), Deciphering the Liquidity and Credit Crunch 2007–2008. *Journal of Economic Perspectives*—Volume 23, Number 1—Winter 2009—Pages 77–100

Montiel, M. P., Spilimbergo, M. A., & Mishra, P. (2010). Monetary transmission in low income countries (No. 10-223). International Monetary Fund.

Mishra, P., & Montiel, P. (2013). How effective is monetary transmission in low-income countries? A survey of the empirical evidence. Economic Systems, 37(2), 187-216

Mohammed, A., & Simon, W. (2008). The Impact of Monetary Policy on Banks' Credit in Ghana. AERC Paper TI-I, Nairobi Kenya.

Mugenda, O. M., & Mugenda, A. G. (1999). Research methods: Quantitative and qualitative approaches. Acts press.

Ng, S, Ludvigson, S & Jurado, K (2015), "Measuring Uncertainty", American Economic Review, Vol. 105, No. 3, pp. 1177-1216

Ngumo A. (2012). Monetary Policy and Financial Stability: What Role In prevention and Recovery. Working paper No. 440.

O'Hara, L. (2005) the implementation of monetary policy in Australia an examination of interest rate targeting and the endogeneity of liquidity. Unpublished thesis University of Western Sydney

Obeng, S.K & Sakyi, D. (2017). Macroeconomic determinants of interest rate spreads in Ghana", *African Journal of Economic and Management Studies*, Vol. 8 Issue: 1, pp.76-88,

Olokoyo, F.O. (2011). Determinants of Commercial Banks' Lending Behaviour in Nigeria. International Journal of Financial Research, 2(2): 66-72.

Quagliariello, M (2007), "Macroeconomic uncertainty and banks' lending decisions: The caseof Italy", Banca d'Italia, No. 615

Sarpong, D., Winful, E.C & Ntiamoah, J. (2013). Determinants of wide interest margins in Ghana: panel EGLS analysis. *African Journal of Business Management,* Vol. 7(35), pp. 3535-3544.

Saxegaard M (2006). Excess Liquidity and the Effectiveness of Monetary Policy: Evidence from Sub-Saharan Africa, IMF Working Paper 06/115.

Simpasa, A., Nandwa, B & Nabassaga, T. (2015) "Bank lending channel in Zambia: empirical evidence from bank level data", Journal of Economic Studies, Vol. 42 Issue: 6, pp.1159-1174

Stever, R., & Wilcox, J. A. (2007). Regulatory Discretion and Banks' Pursuit of 'Safety in Similarity'.

Stiglitz, J. E., & Weiss, A. (2001). Credit Rationing in Markets with Imperfect Information, *American Economic Review*, June, 393-410.

Talavera, O., Tsapin, A., & Zholud, O. (2012). Macroeconomic uncertainty and bank lending: The case of Ukraine. Economic systems, 36(2), 279-293.

Ubi, P. S., Effiom, L., & Eyo, E. I. (2012). Monetary Policy and Industrialization in an Emerging Open Economy: Lessons from Nigeria. International Journal of Academic Research in Business and Social Sciences, 2(8), 270-288.

Van den Heuvel, S. (2005). The Bank Capital Channel of Monetary Policy', unpublished manuscript available at URL http://repec.org/sed2006/up.31231.1139971981.pdf

Van den Heuvel, S.J. (2000). The bank capital channel of monetary policy. Working paper. New Haven, Conn.: Yale University.

Van den Heuvel, S.J. (2002). Does bank capital matter for monetary transmission? FRBNY economic policy review 8 (5):259-266.

Wray, L. R. (1992). Alternative Theories of the Rate of Interest, *Cambridge Journal of Economics*, 16(l): 69.

Younus, H.& Akhta, P.(2009) Reserve requirement as a monetary policy instrument in Bangladesh. *Journal of Business and Technology*, 4(1), 755-768

Zafar N, Urooj SF, & Durrani TK (2008). Interest rate volatility and stock return and volatility. European J. Econ., financ. Adm. Sci. 14:135-140

APPENDIX A – INTERVIEW GUIDE

UNIVERSITY OF GHANA BUSINESS SCHOOL

Dear Sir,

MONETARY POLICY MECHANISMS AND ITS EFFECT ON LENDING RATES OF COMMERCIAL BANKS IN GHANA: A CASE OF CAL BANK LIMITED

I am John Carl Tagbor, a final year student of the above-mentioned institution and I am conducting a study on ***Monetary Policy Mechanisms and Its Effect on LendingRates of Commercial Banks in Ghana*** and with Cal Bank as the bank of focus**.** I will therefore appreciate it if you spend fifteen minutes of your time to provide answers to the questions posed. Kindly note that the information sought is purely for an academic exercise and the information gathered will not be divulged to third parties under any circumstance.

1. **Your position and role at Cal Bank**
    a. Junior Officer
    b. b.Middle level Manager
    c. c. Senior Manager/Top Management

2. **How long have you been at Cal Bank?**
    a. Less than a year
    b. Between 1 and 4 years
    c. 5 years and above

3. **How important is the Monetary Policy Committee (MPC) rate to determining the Base rate of Cal Bank?**
    a. Very important
    b. Important
    c. Moderately Important
    d. Slightly important
    e. not important

4. **How would you rate the impact of Inflation in the determination of the Base rate of Cal Bank?**
    a. Very high
    b. High
    c. Low
    d. Negligible
    e. No Impact

5. **How would you rate the impact of the 91-Day Treasury Bill rate on the determination of the Base rate of Cal Bank?**
    a. Very high
    b. High
    c. Low
    d. Negligible
    e. No Impact

6. **How would you rate the effect of the Bank of Ghana 14 Day (OMO) Bill in the determination of the Base rate of Cal Bank?**
    a. Very high
    b. High
    c. Low
    d. Negligible
    e. No Impact

7. **How would you rate the effect of the Cost of funds of Cal Bank in the determination of its Base rate?**
    a. Very high
    b. High
    c. Low
    d. Negligible
    e. No Impact

8. **How would you rate the impact of the Loan loss provision of Cal Bank on the determination of its Base rate?**
    a. Very high
    b. High
    c. Low
    d. Negligible
    e. No Impact

9. **Please select from the following the extent to which cash reserve ratio affects your lending behavior?**
    a. Volume of the loan book
    b. The Cost of funds
    c. The Base rate of the Bank
    d. Others …….

10. **What other factors affect Cal Bank's lending behaviour?**

_____

_____

_____

_____

_____

11. In your estimation, does BoG's policy rate have more effect on your lending behaviour than the factors you have just mentioned? Please explain your answer

_____

_____

_____

_____

_____

12. **What are the challenges you face as a bank in setting your lending rates?*(Please select as many as are applicable)***

a. Competition from other Banks
b. Inadequate market data
c. Restrictive base rate formula
d. Management strategy
e. Uncertainties from Government
f. Risk of customer defaulting
g. Risk of not meeting profitability targets
h. High cost of funds
i. Others… (Please list below)…

_____

_____

_____

_____

_____

13. What are strategies have you put in place to overcome these challenges? *(Please select as many as are applicable*

a. Price below or close to market average
b. Seek market data from other sources/Improve market research
c. Avoid use of base rate formula
d. Use base rate formula in tandem with management decision
e. Strengthen credit policy/ Prudent risk management practices
f. Being innovative in terms of new product development, specialized marketing and using ICT to facilitate credit risk management processes
g. Adequate Provisioning

h. Exploring other investment
i. Others… (Please list below).…

_____

_____

_____

_____

_____

14. Any other comments?

_____

_____

_____

_____

_____

_____

THANK YOU FOR YOUR PARTICIPATION