

DETERMINANTS OF LENDING BEHAVIOUR OF COMMERCIAL BANKS IN KENYA

**BY
MERCY MUKHANYI**

**RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF ECONOMICS,
UNIVERSITY OF NAIROBI, IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN ECONOMICS OF THE
UNIVERSITY OF NAIROBI**

NOVEMBER, 2016

DECLARATION

This project is my original work and has not been presented for a degree in any other university.

Signature_____

Date_____

Reg. No.X50/64509/2013

Mercy Mukhanyi

This project has been submitted for examination with my approval as university supervisor.

Signature_____

Date_____

Dr. Peter Muriu

DEDICATION

I dedicate this research project to my beloved mother for her priceless sacrifice.

ACKNOWLEDGEMENTS

I take this opportunity to thank all who assisted me in many ways to prepare this research paper. First, I am greatly indebted to my supervisor Dr. Peter Muriu who made this learning process enjoyable through his valuable and knowledgeable comments throughout every stage of this research paper.

I further extend thanks the School of Economics, University of Nairobi for the resources extended my way. I also thank my fellow classmates without whom the learning process would not have been smooth.

Special mention goes to my former classmates and friends Joseph Abuga, Ann Githinji, Mercy Muturi, Cynthia Mulama, Beth Mwaniki, James Murunga, Socrates Kraido Mujune and to my colleague at Consolidated Bank of Kenya Ltd, Charles E.G. Maina who guided and supported me during my research.

I express my sincere appreciation to my family for the sacrifices they have made to enable me reach this stage in life.

Most of all I thank the Almighty God for his grace, guidance and wisdom which he granted to me through this academic journey.

Finally, I take responsibility for all comments, errors or opinions within this research paper.

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LIST OF ACRONYMS

APR:	Annual Percentage Rate
CBK:	Central Bank of Kenya
ESH:	Efficiency Structure Hypothesis
FEM:	Fixed Effects Model
GDP:	Gross Domestic Product
GFC:	Global Financial Crisis
GLS:	Generalized Least Square
GMM:	Generalized Methods of Moments
KIPPRA:	Kenya Institute for Public Policy Research Analysis
OLS:	Ordinary Least Square
REM:	Random Effects Model
RMP:	Relative Market Power hypothesis
SCP:	Structure-Conduct-Performance
TCC:	Total Cost of Credit
TLA:	Total Loans Advanced

ABSTRACT

The banking industry in Kenya has grown tremendously. Commercial banks have an advantage in providing a large variety of financial services to their clients since they are capable of mobilizing more funds. However, the industry has faced shocks such as the global financial crisis of 2008-2009 which led to some banks posting losses and decreasing their lending. The main objective of this study was to establish the determinants of lending behaviour among commercial banks in Kenya with the specific objectives of exploring the effect of bank specific characteristics and external factors on lending behaviour of commercial banks in Kenya. The study employed secondary panel data collected from 35 commercial banks in Kenya for a period of ten years (2006-2015). The Fixed Effects Model was used in estimation. Significance was evaluated at 1%, 5% and 10% levels. Estimation results showed that bank capitalization, volume of deposits, and interest rate spread were positive and statistically significant while real GDP growth rate was found to be statistically significant with negative effects respectively on total loans advanced by commercial banks in Kenya. Based on the study result, the study recommends for comprehensive review of bank's assets and investment strategies since capitalized banks are capable of mobilizing more funds. There is need for policy makers to come up with policies that enhance deposit rates in the Kenya's financial sector. Commercial banks may also reconsider its pricing strategy, offer more attractive products and maintain better banking relationships with their clients. Finally, the study recommends re-examination of good or bad project that are funded by Commercial banks during periods of economic booms or recessions.

CHAPTER ONE

INTRODUCTION

1.0 Background

Commercial banks are significant in the overall performance of an economy and acts as a financial intermediate. Commercial banks have been at the center of driving the economy as evidenced through the tremendous growth in the private sector credit over time (Olokoyo, 2011). According to Jamil (1988) and Beck, Demirguc-Kunt and Maksimovic (2004) if bank credit is not available, the expansion of productive investments in manufacturing, agriculture, real estate development, distribution, fishing, trade, tourism etc. would in many cases be impossible. Moreover, productive units would be forced to maintain larger working capital balances to meet fluctuating requirements for funds. This is uneconomical since large sums would have to be held idle for some periods while during seasonal peaks of business activity, such sums might be insufficient.

However, according to King (1986), regulation is necessary to check excessive credit creation. The economy needs adequate but not excessive supply of money, which might result in high inflation. On the other hand, if money supply lags behind production rates, the economy may suffer from deflation with equally undesirable effects (Celikoz and Arslan, 2011). Government's monetary policy instruments seek to ensure an optimal money supply commensurate with the national objectives of stable prices, sound economic growth and high employment.

Overall, it is evident that financial intermediation involving mobilization of funds from cash surplus economic agents to cash deficit agents to finance productive investment and therefore productivity is crucial in determining the pace of economic growth and development (Levine,2004).

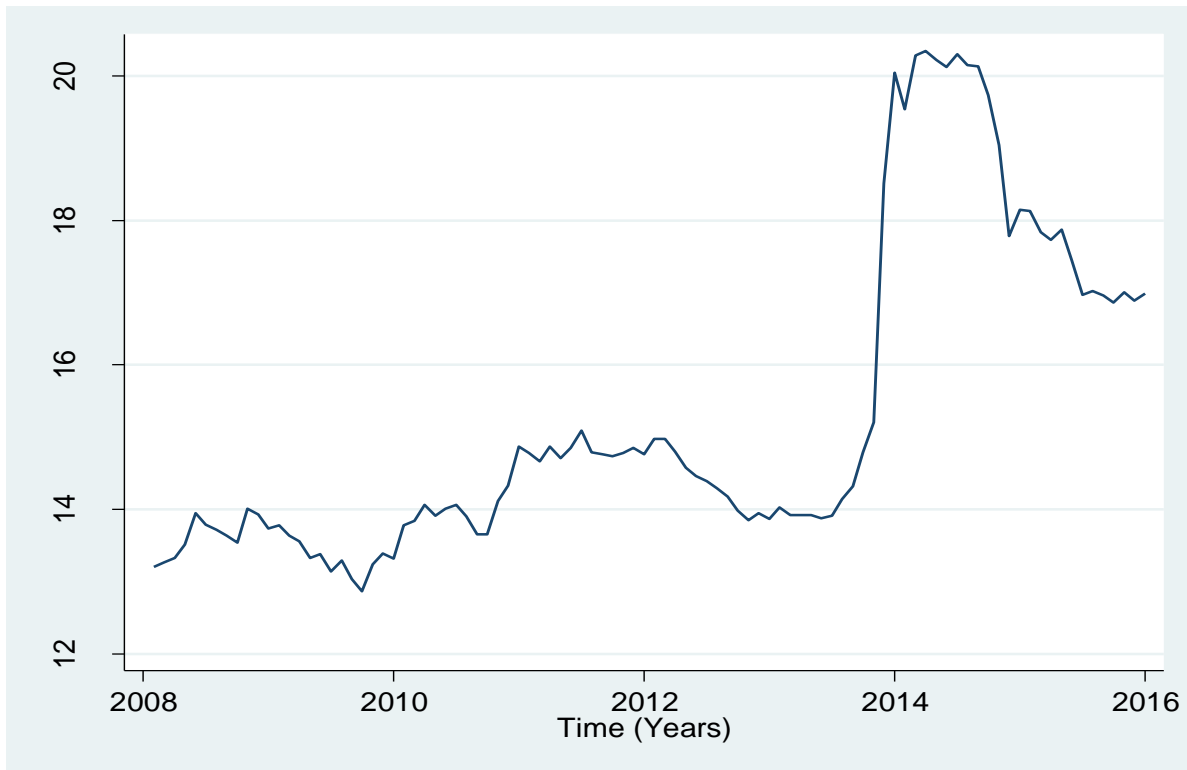
1.1 An Overview of banking sector in Kenya

Banks are significant component of the financial sector. The growth of financial sector is thus evidenced by the importance of banking industry through their balance sheet in relation to the entire economy. In the beginning of 2008, industry's balance sheet stood at approximately Kshs. 13.2 billion which has witnessed a continuous growth of up to 1.3854 trillion by the year 2015 (Central Bank of Kenya¹, 2015). This presents the fact that the banking industry balance sheet contributes more than twice the total annual government budget hence the industry's contribution to economic growth cannot be underestimated. For 2013/2014 financial year, the balance sheet experienced a rapid growth as the entire banking industry recorded a growth of up and above 2 trillion. According

¹ Henceforth referred to as CBK

to CBK, (2015) the total net loans and advances came second after the total assets. Figure 1 below shows more details of the amount of resources given in terms of loans.

Figure 1.1: Total Loans advanced to the Private Sector (2008-2015)



Source: Central Bank of Kenya (2008-2015)

Figure 1.1 tracks the growth in the total loans advanced by the commercial banks to the private sector. Growth has been on upward trend though at some points experienced marginal growth. A downward risk is evident during the end of the year 2009 and early 2013 which may be attributed to the poor economic growth as a result of Global Financial Crisis (GFC) and political turbulence respectively. Similar trend can be traced for the entire period of the year 2015 which may be due to the increased lending rates used by the commercial banks.

Banks are significant in the economy by mainly lending or giving out loans and advances. Banks have the ability to mobilize financial resources and allocate them to fruitful investments (CBK, 2012). According to Levine (2004), the three principles guiding operations of Commercial Banks include profitability, liquidity and solvency. Thus, no matter the sources of the generation of income or the economic policies of the country, banks would be concerned in giving out loans and advances to their customers. The decisions by banks to lend out loans are influenced by a lot of factors such as the prevailing interest rate, the volume of deposits, banks liquidity ratio, *inter alia* (Djiogap and Ngomsi, 2012).

On the other hand, there has been an outcry from both the government and the general public on the banks' lending behaviour mainly through debates on high interest rates charged by the commercial banks on different financial services. This is informed by the high cost of credit bearing in mind that the interest income is the largest contributor to the total income for the entire industry. This saw the formation of a task force under the office of the deputy president with the mandate of driving the interest rates below the two digit figures. It consequently saw the introduction of the Kenya Banks Reference Rate (KBRR) which came into effect on July 2014. The perception was that high base rates are the precursor to the high lending rates. The adoption of the Total Cost of Credit (TCC) and the Annual Percentage Rate (APR) as per the prudential guideline of the central bank are concerted efforts by the government to lower the lending rates in the economy, (CBK, 2015).

However, the high cost of credit (lending rate), may not necessarily arise from the high base rates or the inadequate non-disclosure of the cost of credit by the banks. For instance, Non-performing loans have adversely influenced the cost of credit with the governments' delayed payments to contractors and other suppliers of goods and services adversely contributing to their credit worthiness (Karim, Azman-Saini and Abdul, 2011). This therefore calls for a holistic investigation as to what determines the lending behaviour among commercial banks in Kenya.

1.2 Statement of the Problem

The operating environment for the Kenya's banking industry has of late become dynamic hence the need for banks to be both inward as well as outward looking in their business strategies. Challenges in the banking industry in Kenya date back to 1980s following the collapse of a number of commercial banks as well as some being bailed out by the Central Bank (Demetriades and Andrianova, 2003). In addition to that, the global financial crisis spillover effects of 2008-2009 hit the banking sector in Kenya with a number of banks posting losses especially the small and medium size banks which account for approximately 57% of the total industry (KIPPRA, 2013). This saw increased interest rates on loans which was the only source of revenue to the banks' income portfolio followed by investments in government securities (Olumuyiwa, Oluwatosin, and Chukwumeka, 2012). However, borrowers perceived the total cost of credit as a harsh judgment of banks exhorting the public.

The main debate on the aftermath has revolved around interest rates at the expense of other determinants of lending behaviour of commercial banks. Whereas a number of studies in Kenya have focused on determinants of interest rates and interest rates spread on performance of

commercial banks², the focus on determinants of banks' lending behaviour is scarce. A few studies on determinants of banks' lending behaviour are not only out of Kenya but also inconsistent on the effects of deposits, investments, cash reserve ratios and interest rates on lending behaviour of commercial banks³. The only study addressing lending behaviour of commercial banks in Kenya as per my knowledge is by Onyango (2015) but it only confines itself to volume of deposit, interest rate and liquidity ratio on total loan advanced by selected commercial banks. This is a narrow view that this study seeks to expand by establishing other determinants such as bank size, cash reserve ratio, bank capitalization, volume of deposit, interest rate spread, and Real GDP Rate on the bank's lending behaviour.

1.3 Objectives of the study

The main objective of this study was to establish the determinants of lending behaviour of the commercial banks in Kenya. The specific objectives were:

1. To determine the effect of bank specific characteristics on the commercial banks' lending behavior in Kenya.
2. To determine the effects of external factors on the commercial banks' lending behavior in Kenya.
3. To propose policy implications based on study findings.

1.4 Significance of the Study

The government has been attempting to address the problem of low lending activities in the economy. This is evidenced by the central bank's prudential guidelines requiring all the commercial banks to adopt TCC/APR for transparency in their lending (CBK, 2014). It's significant mainly to the Central Bank and other market regulators such a Treasury. Such knowledge may reaffirm to other banks whether high deposits and loans perform better in terms of profitability than banks with low deposits and loans. Thus, CBK may be able to determine whether the government must make savings attractive in order to positively influence the liquidity position of the banks and hence their lending behaviour. Secondly, the study may also aid CBK through the Monetary Policy Committee, in reviewing the Kenya Bank's Reference Rate (KBRR) an action which is done after every six months. Thirdly, this study may improve on stylized facts on the determinants of lending behaviour by commercial banks by reviewing other ignored factors such as bank size, bank capitalization and cash reserve ratio.

² Refer to (Kimura, 1997; Karimi, 2006; Olweny, 2011; Muriuki, 2013, and; Were and Wambua, 2013).

³ Refer to McCathy et al. (2010); Olokoyo (2011); Olusanya (2012) and Malede (2014).

1.5 Scope and organization of the Study

The study examined factors associated with lending behaviour of the commercial banks in Kenya for the period between 2006 and 2015 and explored the micro and macro factors comprehensively. Subsequent to chapter one, the second chapter presented both theoretical and empirical literature together with a summary of the literature at the end. The third chapter contained the methodological framework, the model specification, and review the expected relationship among the variables and the data and diagnostic tests to be used. In the fourth chapter the study comprehensively analyzed and presented the study results in form of tables. Finally, chapter five provides a summary of the study, conclusions and policy recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter covers both theoretical and empirical literature on determinants of lending behaviour among commercial banks. It concludes with an overview of the literature highlighting the research gap that the study seeks to fill.

2.1 Theoretical literature

The primary role of a bank is intermediation by way of collecting savings from depositors and making these savings available as loans to borrowers. In performing this function, banks are regulated often by the environment within which they operate. It is argued that banks cannot compensate an increased failure risk by charging higher interest rates (Stiglitz and Weiss, 1981). This therefore prompts any financial institution to request for collateral from the borrower to minimise losses that might occur from loan defaults.

However, there are challenges experienced for banks to experience growth. This is because of exposure to risks while performing their roles. By solving the problem of asymmetric information among agents and by diversifying risks, Banks manage to reduce costs that would be incurred on the exchange of financial funds. This therefore enables their efficient allocation of financial resources within the economy (King and Levine, 1993; Olusanya, 2012). Economic decisions related to consumptions and investments are thus made possible through the financial system since it is aimed at increasing productivity growth of the economy (Karimi,2006).

As posited by different theories, bank's lending behaviour is a culmination of a number of factors both external and internal to the bank. However, each theory addresses effects of a certain identical variables on lending behaviour by banks (Ewert et al., 2000). For instance, bank lending channel theory only looks at the effects of reserve requirements while pro-concentration theory focuses on how bank capitalization affects the bank's lending behaviour. Alternatively, Kashyap, et al., (1993) argues that bank lending reduces through monetary contraction as posited by the Keynesian theory. This implies credit available from the banks is reduced. Further, within finance literature, there exists several theories with regard to banks' lending behaviour. In this study, the theories reviewed are summarised as follows:

2.1.1 Loan pricing theory

This asserts that banks cannot always set high interest rates. Therefore, in trying to earn maximum interest income banks should consider the problems of adverse selection and moral hazards since it is very difficult to forecast the borrower type at the start of the banking relationship (Stiglitz and Weiss, 1981) given the high credit market information asymmetry. 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 since they are likely to take a highly risky projects or investments (Chodecal, 2004). It argued that at times it may be difficult to find interest rate set by bank which commensurate with the risk of the borrowers. This theory suggests that loans advanced to the public may or may not increase in the end.

2.1.2 Credit Market Theory

The neoclassical credit market model suggests that the terms of credits clear the market. In this model, the interest rate is the only price mechanism that can clear the credit market given that the loan collateral remains constant. With a growing demand for credit and a given loan and advances supply by the banks, the interest rate can only rise if the credit market is clear, and the reverse is true. The higher the default risks of the borrower, the higher the interest premium (Ewert et al., 2000) so as to compensate against any possible losses. 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 thus contracting their lending activities in the long run. Although, central bank requires banks to deposit a certain amount of money with them, increased cash requirement ratio also acts as a mechanism of restricting credit available taking consideration of macro-economic environment (Vazakidis and Adamopoulos, 2009). According to Bolton and Freixas, (2001), this leaves commercial banks with close to no alternative other than lowering lending volumes.

2.1.3 Quality Uncertainty Theory

The idea of quality uncertainty in financial works was introduced by Leland and Peyle (2012) and Ramakrishnan and Takor (1984). According to their representations, they give evidence that quality uncertainty also occurs on financial markets and has an effect on the market partakers. There exists information asymmetry where the participants are unsure of the quality of the service or product being offered. According to a 1970 paper by Economist George Akerlof, he points out that information asymmetry between buyers and sellers may exist in the market leading to quality of

goods traded in the market diminishing thus leaving low quality goods in the market. When there is existence of quality uncertainty, there is bound to be adverse selection leading to a situation where high quality performance or products in this case loans, to deteriorate due to comparably low pricing or lending levels. Kierner (1990) points out that provision of quality loans by financial institutions may decline due to comparably low rating or lending levels.

2.1.4 Moral Hazard Theory

Moral hazard occurs when a contract is executed among two parties. The two types of moral hazard are hidden information and hidden action (Arrow, 1985). Hidden information occurs when one contract party does not unveil the full range of his or her options and the consequent risk factors. Hidden action occurs when one contract party chooses options that are not in the interest of the counterparty and cannot be observed and managed thus moral hazard may arise. In relation to credit markets and analyzing the lender-borrower relationship in more detail, the financial institutions may not have the capacity to ensure that the borrower invests the borrowed loan in productive investments and as a result of this information asymmetry, the borrower may decide to invest in risky projects leading to defaulting. (Diamond, 1984; Breuer, 1995)

2.1.5 Signaling, Bankruptcy and Risk Return Theories

These theories were proposed by Berger (1995). Under the signalling hypothesis Trujillo-Ponce (2012) note that private information on whether there are future prospects that are good is signalled by bank management. According to signalling hypothesis, the higher the capital and volume deposited in banks, there will be a positive sign for the bank (Ommeren, 2011; Tomola, 2013). Therefore, a lesser leverage shows that banks perform better compared to other market as well as participants who cannot raise their equity without weakening commercial banks' productivity maybe through defaulting.

Berger, (1995) posits that according to the bankruptcy theory, more equity is held by a bank to avoid distress periods where bankruptcy costs are all of a sudden high. In this case, both the signalling and bankruptcy cost hypotheses maintain existence of a positive relationship between capital and resources (assets) owned by commercial bank (Ommeren, 2011; Tomola, 2013). According to Olokoyo (2011) lending behaviour is significantly influenced by deposits. Thus to enhance the lending activities, the study suggests that commercial banks should pay attention to increase mobilization of more deposits.

According to the risk-return hypothesis, higher expected returns are as a result of cumulating risks through increasing leverage of the firm. Following this theory, there is a need to take up more risks by increasing leverage and consequently increase the amount of loans to the general public (credit)

if commercial banks expect increased returns. This action is expected to lower the bank capital. Based on this theory, a negative relationship is predicted between capital and return on equity (Ommeren, 2011; Sharma and Gounder, 2012, and Tomola, 2013).

2.1.6 Market Power (MP) Theory

This theory describes the relationship between the bank size and profitability. Olweny and Shiphoh (2011) observe that the market power posits that performance of banks is influenced by the market structure of the sector. These authors claim that market power hypothesis assumes that the profitability of a commercial bank is a function of exogenous market factors. Within the market power theory, there are two different approaches that are; Structure-Conduct-Performance (SCP) and the Relative Market Power hypothesis (RMP). Following the SCP approach, the level of concentration in the banking market leads to higher potential market power by commercial banks due to increased volumes of deposits. This may raise their profitability. Commercial banks located in more intense markets are most likely to make unusual returns by their ability to lower deposits rates and to charge higher loan rates as a results of collusive or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency (Tregenna, 2009). In our case, banks will also have to determine different types of loans to be advanced to this heterogeneous population in concentrated markets. On the other hand, RMP theory postulates that market share influences bank profitability. Further, only large commercial banks characterized by differentiated products can influence interest rates, lending volumes and consequently returns earned. Therefore, commercial banks in this case are able to practice market power and earn non-competitive returns.

2.1.7 Efficiency Structure (ES) Hypothesis

This theory upholds that commercial banks earn high returns due to their efficiency compared to other firms. According to Tomola, (2013), the theory attributes the returns earned by commercial banks to internal efficiencies of the respective institutions. The theory, just like Market Power hypothesis has two distinct approaches which include the X-efficiency and Scale–efficiency hypotheses (Olweny and Shiphoh, 2011). As per the X efficiency hypothesis, efficient firms earn more returns because of their lower interest rates for the loans advanced. According to Athanasoglou *et al*, (2006), these commercial banks tend to occupy larger market shares. Alternatively, the scale efficiency approach focuses on economies of scale as opposed to differences in management or production technology employed. Commercial banks which are large in terms of capital or owned by other firms which are large in terms of assets get high profits due to increased economies of scale. They are thus able to get larger market shares and thus better returns. In our case, banks which may be owned or most of the shared are foreign based may be highly liquidated compared to locally owned banks. Such commercial banks are at a position of advancing more

loans at lower interest rates to large segments of small and medium enterprises and thus earn more profitability.

2.2 Empirical Literature Review

There is vast empirical literature on the factors associated with lending behaviour among commercial banks.

Malede (2014) explored determinants of commercial banks' lending in the Ethiopian banking industry using panel data from eight banks for the 2005 -2011 period. The results of the study indicate a significant relationship between banks' lending and banks size, credit risk, gross domestic product and liquidity ratios. On contrary, the study found out that deposit, investments, cash reserve ratios and interest rates had no significant effect on Ethiopian banks' lending activities.

Jonas, Emmanuel and Kofi (2013) conducted a study to investigate lending behaviour among the Ghanaian banks. They used the Generalized Methods of Moments (GMM) as an estimation technique. Their findings revealed that bank size and capital structure positively and statistically significantly influenced banks' lending behaviour. Also they found out an inverse relationship exhibited by exchange rate fluctuations. It was reported that a significant and negative relationship was exhibited between exchange rate and total loans advanced by commercial banks. Their findings concur to the study result of Stein (2000); and Ngomsi and Djiogap (2012) affirms that small banks have comparative advantages in producing soft information whereas large banks also have comparative advantages in lending based on hard information. The study unveiled a positive significant effect of competition in the banking industry on bank lending behaviour. In addition, Macroeconomic environment within which a bank operates determines the lending decision of the bank. For instance, during economic boom, businesses demand for loans to take advantage of expansion and banks investment opportunities equally soar.

Ngomsi and Djiogap (2012) investigated the determinants of bank long-term lending behaviour in the Central African Economic and Monetary Community. The study applied Ordinary Least Square (OLS) as an estimation technique. From the study results, it was revealed that ownership of a bank is core in determining the total loan and advances extended by a bank. The study revealed that foreign banks tend to exhibit higher long term loan ratios compared to the state owned.

Irungu, (2013) explored effect of interest rate spread on financial performance of commercial banks in Kenya. The study collected data from all 43 commercial banks in Kenya. A multiple linear regression model was adopted. It was revealed that a strong positive and significant relationship

between financial performance of commercial banks and interest rate spread. It was shown that interest rate spread affect performance asset in banks since it raised cost of borrowers.

Olusanya (2012) explored the link between banks deposits and total loans advanced by commercial banks using OLS. The study results indicated a positive impact of deposits on the commercial banks' lending volumes. This was supported by the findings of McCathy et al. (2010) who found out the presence of a positive effect of customer deposits on the banks' lending. Similarly, study by Sebastian (2009) found that demand deposits liabilities had the most significant positive effect on the banks' credit allocations in the Nigerian credit market.

Olokoyo (2011) studied the determinants of the commercial banks' lending behaviour in Nigeria for the period 1980 – 2005. The study used fixed effects regression model. From the study result, it was found out that a long-run relationship existed between banks' lending, deposits, interest rate, minimum cash reserve requirement, investment portfolio, ratio of liquidity, foreign exchange and gross domestic product. Specifically, lending rates were found to influence banks' lending performance despite being unpronounced. These affirms the finding by Karim et al (2011) who investigates the impacts of interest rates on the banks' lending in Malaysian context and contend that interest rates negatively affect lending among the banks while controlling for macroeconomic variables such as GDP and inflation.

Karim, Saini and Karim (2011) examined the effects of monetary policy channel on the banks' lending for Malaysian market using the data covering the period 1993 to 2008. From the OLS results, bank liquidity was shown to be core and significant in determining the supply of loans by banks. This is in tandem with the earlier study by Aiusen and Franken (2010) who conclude that during the 2008 financial crises, banks were ultimately faced by liquidity stress hence capping their lending ability. There exists a pro-cyclical relationship between economic growth and bank lending because in periods of economic recession, demand for credit plummets..

It is debated that a big balance sheet allows managers to invest more in different geographical and business segments to address the issues of asymmetric shocks. In a study conducted by Theodossiou (2011) revealed that the banks size measured by total assets and bank capitalization influenced commercial lending behaviours and the likelihood of long term lending. The author suggests that large banks have an advantage in providing a large variety of financial services to their clients since they are capable of mobilizing more funds. Regarding the magnitude of the bank, Cole et al (2004) found out that small banks adopt small business loan underwriting practices that are riskier than those of larger banks which ultimately determine the available credit to the public.

Vazakidis and Adamopoulos (2009) investigated the relationship between economic growth and credit market development in Italian market. The log-linear regression model indicated a positive effect of economic growth on credit market development. Further, the authors established that through the transmission mechanism, a rise in prime rate negatively affects banks' lending behaviour. This affirms a previous study by Dell'Araccia and Marquez (2006) whereby bank credit expansions lean to be pro-cyclical; that is, high rates of growth in GDP induces a high rate of growth in bank credit. This is due to the fact that in the period of economic boom, banks loosen up their criteria and lend to both good and bad projects, while in times of economic depression most loans become non-performing and thus constraining credit available to private sector.

Regarding effects of monetary policies involving liquidity requirement and cash requirement ratio, Ehrmann et al. (2003) using the OLS estimation found that financial contraction has a strict negative impact on rather undercapitalized banks' lending. The findings demonstrate a sharp contrast to study results of Olokoyo (2011) who established a positive relationship between these variables and banks' lending behaviour since banks should always ensure compliance with these policies. Other empirical studies with the same conclusion include Cargill and Meyer (2006), Montoro and Moreno (2011), Christian and Pascal (2012). In addition, Olusanya (2012) suggests that an increase in the reserve requirement has positive impact on the banks total loans and advances. However, Wilcox (2012) maintains that reserve requirement has small and statistically insignificant influence on the banks loans and advances.

Onyango (2015) examined the determinants of lending volume in the Kenyan banking industry for a period between 2002 and 2011. The study adopted an econometric approach to test the degree of correlation between the variables by employing the Ordinary Least Square (OLS) method. The findings indicated a negative and significant effect of lending interest rates on the total loans advanced. With regard to the liquidity, this study revealed that banks with more liquid assets extend more credit to borrowers. Similarly, volume of deposit in commercial banks has a significant and positive effect on the total loan advanced and that the liquidity ratio also positively and significantly affects the total loans advanced. The research findings are therefore in agreement with Olokoyo (2011) who showed that the volume of deposit has the highest impact and influence on the lending of commercial banks and a change in it will yield the highest change in banks' loans and advances. The study also revealed that liquidity ratio influences banks' ability to extend credit when demanded. The study concluded that bigger banks are in position to attract more investments in the form of deposit and this enhances their ability to extend credit.

2.3 Overview of the Literature Review

The review of both theoretical and empirical literature indicates that most of the studies on the banks' lending behaviour have been carried out in the developed financial markets. Studies reviewed here used total loan advanced, volume of deposits, bank's investment portfolio, lending rate, cash reserve ratio, liquidity ratio, credit risk, GDP, interest rate spread, investment portfolios, capital structure and exchange rate as dependent and independent variables (Olokonyo, 2011; Theodossiou, 2011; Olusanya, 2012; Jonas, Emanuel and Kofi, 2013; Irungu, 2013 and Malede, 2014).

There are however, a few studies (Olokonyo, 2011 and Olusanya, 2012) that have been done in the less developed financial markets. Similarly, studies on the determinants of lending behaviour of banks in the Kenyan financial market are hardly available with the only existing one only addressing a few variables (Onyango 2015). Majority of studies conducted in Kenya focus on the determinants of interest rate spreads among the commercial banks (Kimura, 1997; Karimi, 2006; Olweny, 2011; Muriuki, 2013, and Were and Wambua, 2013). This study intends to fill the empirical as well as the methodological gap since most studies including the one done in Kenya by Onyango adopted an OLS estimation technique without addressing the relevant estimation bias except Jones, Emmanuel and Kofi 2013 who used GMM in estimation. This study thus employed panel data analysis technique in estimation which is more dynamic compared to cross-sectional and time series data. Further, necessary tests were undertaken to validate the estimates.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter represents theoretical framework, model specification, estimation technique, definition and measurement of variables, estimation issues and data source.

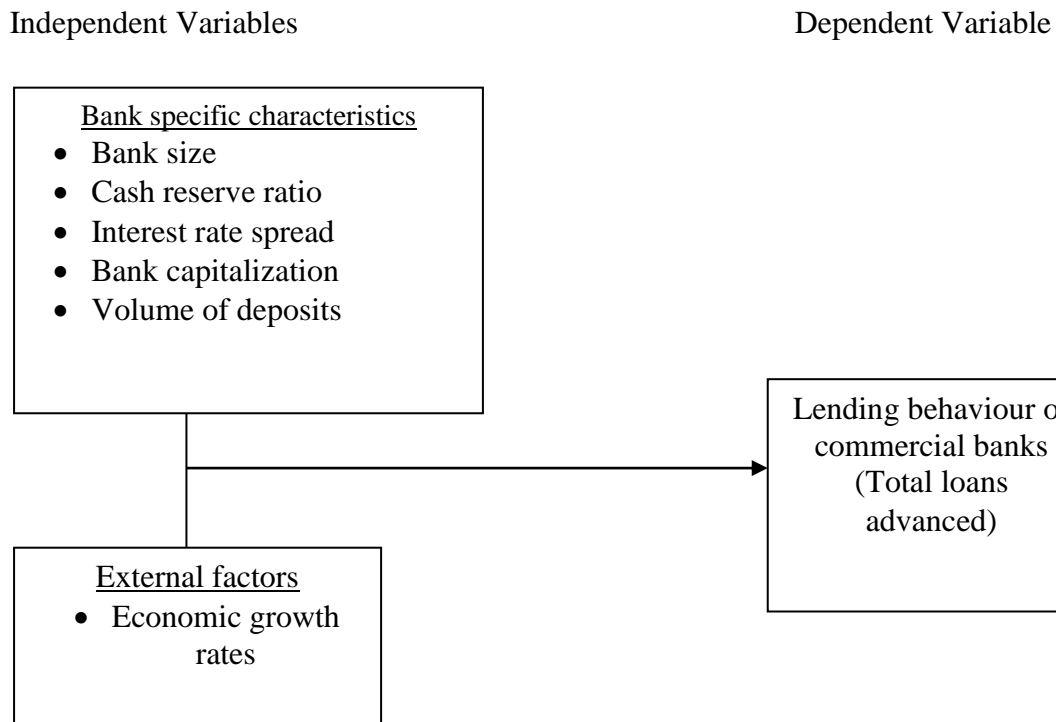
3.1 Theoretical framework

Considering theories such as Loan pricing theory, credit market theory, hold-up theory, soft budget constraint, signalling, bankruptcy and risk return theories, market power (MP) and also efficiency structure (ES) hypotheses it is clear that lending behaviour of commercial banks is attributed to bank specific characteristics and other external management factors (Berger, 1995; Li and Liang, 1997; Athanasoglou *et al.*, 2006; Tregenna, 2009; Olweny and Shipho, 2011; Olokoyo, 2011; Ommeren, 2011; Trujillo-Ponce, 2012; and Tomola, 2013). The theories show that size of the bank, capitalization, type of ownership and cash reserve ratio significantly influence lending motives of the firms. In this case, market structure aspects with regard to loan performance is subject to economies of scale, larger institutions would be more efficient and could provide service at a lower interest rates which leads to increased demand for loans from commercial banks (Theodossiou, 2011; Tomola, 2013). However, commercial banks enjoy economies of scale up to a certain level, beyond which diseconomies of scale set in. This implies that lending volumes increase with increase in size, and decreases as soon as there are diseconomies of scale. This is same for capitalization. According to Ommeren (2011), capitalization measures how much of the banks' assets are funded with owners' fund and is a proxy for capital adequacy of a bank by estimating the ability to absorb losses. However, cash reserve ratio lowers the liquidity and thus lending volumes by the commercial banks (Bolton and Freixas, 2001).

Following credit market hypothesis regarding external/macro-economic environment (economic growth rate and exchange rates), Vazakidis and Adamopoulos (2009) are of the opinion that in the period of economic boom, banks loosen up their criteria and lend to both good and bad projects, while in times of economic depression most loans become non-performing and thus constraining credit available to private sector

The following is a conceptual framework indicating the relationship of bank specific and external factors determining lending behaviour of commercial banks in Kenya.

Figure 3.1: Conceptual framework



To test the hypotheses that either banks specific characteristics or external/macroeconomic factors influence lending behaviour of commercial banks, the study conducted an econometric estimation as indicated in section 3.3.

3.2 Empirical model

This study adopted the model employed by Olokoyo (2011) and Malede (2014) whereby all commercial banks are considered for the defined period of time (10 years). The model captures how different bank specific variables as well as macroeconomic variables feed into the overall bank lending behaviour. The study specified a model linking factors influencing lending behaviour of commercial banks which includes bank specific characteristics and macroeconomic variables. For the vector of banks specific variables, we have interest rates spread, bank size, bank capitalization, cash reserve ratio and volume of deposits. For the macroeconomic variable(s) set we have real GDP growth.

3.3 Model Specification

The empirical model is defined as shown below:

$$LnLoans_{it} = \alpha + \beta_1 Size_{it} + \beta_2 Cap_{it} + \beta_3 IRS_{it} + \beta_4 Vol_{it} + \beta_5 GDP_{it} + \beta_6 Crr_{it} + \varepsilon_{it}$$

Where:

α = intercept/constant term

LnLoans is the natural logarithm of the total loans and advances by the bank to the customers.

Size is the size of the bank measured by the total assets of the bank

Cap is the bank's capitalization

IRS is the Interest rate spread

Vol is the volume of deposits

GDP is the Gross Domestic Product

Crr is the cash reserve requirement

ε is the error term of the stochastic model

Betas (β) are the parameters of the models. In addition, we note that $i = 1, 2, 3, \dots, 35$ since we are analysing 35 commercial banks while $t = 1, 2, \dots, 10$ since our analysis captures 10 years from 2006 - 2015.

3.4 Definition and measurement of variables

Within this study we defined measure and predict the expected signs of the variables to the model as follows:

3.4.1 Total loans and advances

This is the dependent variable of our model. We define it as the total annual gross loans and advances the commercial banks advances to both the public and private sector. This was obtained from the assets side of the bank's balance sheet (Ngomsi and Djiogap, 2012; Malede, 2014). The trend of the total loans and advances therefore captured the behavior of banks' lending over time thus indicating on whether banks are lending more in the current period compare to the previous periods.

3.4.2 Bank size

This refers to the total assets of the bank. It measures the base for the total resources available to the bank for lending. In the study, bank size was measured by the total assets of the bank as reported in the end of year balance sheet. Theodossiou (2011) argues that the banks size measured by total assets is among the major determinants of commercial banks' business and long term lending. Large banks have an advantage in providing a large variety of financial services to their clients since they are capable of mobilizing more funds. We expect a positive relationship between the value of the bank size and the level bank's lending since the larger the asset base of a bank the more loans that the bank's balance sheet can accommodate.

3.4.3 Interest rate spread

This is measured as the difference between interest charged on loans advanced and interest charged on deposits (Irungu, 2013). A decline in the interest rate spread therefore lowers the total lending

and advances through decreased supply from the lending institutions. We expect to have a positive effect on the total loans advanced by commercial banks.

3.4.4 Bank capitalization

It measures the bank's yield in a one-year time frame. Banks are expected to be adequately capitalized. This implies that they must have enough assets that can be readily transformed to cash to meet short-term and long-term obligations. Bank capitalization is positively associated with lending behavior of commercial banks (Theodossiou, 2011). The information on capitalization of commercial banks was obtained from Audited Bank's Financial statements. We expect a positive sign.

3.4.5 Real Gross Domestic Product growth rate

This is the total value of goods and services produced in an economy within a one-year period. It measures the total income in the economy. It is therefore one of our macroeconomic variable in the model. In the study used the real GDP growth rate reported by the Kenya National Bureau of Statistics. Dell'Ariccia and Marquez (2006) posit that bank credit expansions lean to be procyclical; that is, high rates of growth in GDP tends to bring on a high rate of growth in bank credit. The expected sign here is positive since when the economy is performing well, then there is more liquidity in the market hence more loan advances by banks.

3.4.6 Cash reserve requirement

This is the cash reserve requirement the commercial banks are required to deposit with the Central Bank. The higher the reserve, the tighter the credit market since it withdraws money from circulation. Bolton and Freixas, (2001) point out that prudential regulation establishing the minimum capital constrains on the banks' lending ability. We expect a negative sign.

3.4.7 Volume of Deposits

According to Tomola (2013), lending activity is made possible only if the banks can mobilize enough funds from their customers. Since commercial banks depend on depositor's money as a source of funds, it means that there are some relationships between the ability of the banks to mobilize deposits and the amount of credit granted to the customers. As total deposit increases the total advance and loan increases proportionally (Ajay 2007). An increase in deposit of a bank is likely to improve its ability to lend more funds to its customers. Lending and deposits move together because faster deposit growth signals growing demand for loans. We expect a positive relationship.

Table 3.1: Summary of variables and measurement

Variable	Description	Predicted Effect	Data Sources
Dependent variable			
Total loans and advances	This is the total annual gross loans and advances the commercial banks advances to both the public and private sector.		CBK
Independent variables			
Bank Size	It is the total assets of the bank	Positive	Bank's Financial statements
Interest Rate Spread	This was measured as a difference between interest advanced on loans and interest charged on deposits.	Negative	CBK
Bank capitalization	This is the total capital obtained from summation of supplementary and core capital. it represents the net worth of the bank or its value to investors	Positive	Bank's Financial statements
Volume of deposits	This was calculated as the ratio of deposit to capital.	Positive	CBK
Real GDP growth rate	Measure of the size of an economy adjusted for price changes and inflation. This was measured as the percentage of the rate of change of GDP annually.	Positive	KNBS

3.5 Data source and type

The study used secondary data collected from Central bank of Kenya (CBK) for the period 2006-2015 comprising of all 35 commercial banks of Kenya. The data contains specific bank information on bank size, interest rate spread; cash reserve requirement, and bank capitalization. Also the study extracted real economic growth rate (GDP) from the world development indicators database for the specified period.

3.6 Estimation and testing

The study used a panel data estimation technique because of its several advantages over both cross-section and time-series data sets. The technique has a greater degrees of freedom and less Multicollinearity leading to more efficient estimates and gives greater flexibility in modelling differences in behaviour across various companies participating or considered in this study which enables us to control for unobserved heterogeneity (Hsiao, 2003).

According to Baltagi (2008), both time-series and cross-section studies do not control for this unobserved heterogeneity thus increases the risk of obtaining findings which are biased. Lending behaviour of commercial banks is modelled as a function of bank size, capitalization, volume of deposits and cash reserve requirement as well as macroeconomic factors (economic growth). Although, these variables vary with firms over the study period, there are a lot of other variables that may be firm-invariant and/or time-invariant that may affect lending behaviour of commercial banks in Kenya.

In addition, some of these variables are difficult to measure or hard to obtain so that not all bank-invariant or time-invariant variables are available for inclusion in the commercial bank lending equation. This implies that omission of these variables leads to bias in the resulting estimates. Thus, panel data are able to control for these firms and time-invariant variables whereas a time-series study or a cross-section study cannot, (Baltagi, 2008).

The study thus estimated the model using one of the panel estimation approaches. Fixed effects model is said to impose testable restrictions on the parameters of the reduced form model as indicated by Chamberlain (1984) suggesting that one should check the validity of these restrictions before adopting the fixed effects model. On the other hand, Mundlak (1978) argued that the random effects model makes assumptions of exogeneity of all the regressors with the random individual effects.

However, to choose between the Random-effects GLS regression and Fixed-effects (within) regression, a Hausman test (1978) was conducted. It tested whether the unique errors are correlated with the regressors; the null hypothesis is that they are not (Greene, 2008). This study base's decision⁴ is made considering the resulting p-value. Therefore, on conducting the test, if the P-value exceeds 5% significance level, it implies that the individual level effects are best modelled using the random effects method. In other words, random effect is preferred because it is a more efficient estimator (Hausman, 1978) if the null hypothesis cannot be rejected. The specified model was estimated using statistical Programme (STATA version 13) and the study objects investigated through systematic tests described as shown below;

⁴The null hypothesis that the differences in coefficients are not systematic

3.6.1 Unit root test

To avoid change of the estimates over time due to non-stationarity, unit root tests were applied to investigate or detect non-stationarity in all the study variables. Failure to consider its presence can in turn lead to spurious estimates. We applied the Levin-Lin-Chu test for Unit Root which was used to determine if variables are non-stationary for every variable across the panels. Therefore, if variables are found to be non-stationary, first differencing or successful lagging was applied until the bias is eliminated. The null hypothesis in this case is that the variable under consideration is non-stationary or has unit root and in our case, it is stated as;

H_0 : Panels contain unit roots

H_1 : Panels are stationary

3.6.2 Correlation analysis

Following the correlation analysis, if multicollinearity was suspected, then the researcher dropped one of the correlating variables among pairs with high correlations. All those pairs of variables which exhibited high correlation coefficient of more than 0.7 in absolute terms were not considered in the model simultaneously. According to Kennedy (2008), multicollinearity is considered a problem if the correlation coefficient (r^2) is greater than 70 per cent.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the results analyzed from the consolidated data of the commercial banks in Kenya for the period between 2006 and 2015. Since the data has taken panel dimension, 35 banks were sampled based on firm level characteristics and external factors which may influence their lending behaviour. A regression analysis is undertaken to determine the impact of selected exogenous factors on bank lending behaviour.

4.1 Descriptive Statistics

Table 4.1 shows that the average of total loan advanced was Kshs 18, 193.07 million with a minimum of Kshs 126 million and a maximum of Kshs 18, 193.07 million. Bank size and bank capitalization were on average Kshs 32044.56 million and Kshs 4350.94 Million with a standard deviation of 48944.12 and 7254.50 respectively. On assessing the volume of deposit, the study found out that over time, the minimum volume of deposit reported was Kshs 73 million and the highest reported was Kshs 231755 million. This huge range implies that the variables exhibit variability given the variance in the specified basic descriptive statistics.

Table 4.1: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Total Loan Advanced	350	18193.07	29421.83	126	192839
Bank Size	350	32044.56	48944.12	491	304112
Bank Capitalization	350	4350.94	7254.50	119	44925
Volume of Deposits	350	25326.38	38345.64	73	231755
Cash Reserve Volumes	350	2558.3	4226.241	9	26998
Interest rate spread	350	14.4	2.156699	11.65	18.45
Real GDP Growth Rate	350	5.26	2.12398	0.2	8.4

Further, the cash reserve with the central bank is on average Kshs 2558.3 million with the interest rate of 14.4 on average. On external factors, the economy demonstrated a growth rate of 5.26% with a minimum and maximum growth rate reported being 0.2% and 8.4% respectively. Based on the standard deviations and the means of the percentage increase in minimum wages, there were outliers in the series since the standard deviation of the series for most variables (Total Loan Advanced, Bank Size, Bank Capitalization, Volume of Deposits and Cash Reserve Volumes) was more than their respective means (Remenyi, 2009). This implies that they can be amenable to further statistical analysis upon addressing these outliers among the panels.

4.2 Correlation analysis

Correlation analysis is used to determine the extent of the correlation of different pairs of variables under study. It measures/calculates the correlation coefficient between 1 and -1. This further predicts presence or absence of multicollinearity which is considered to exist when there is perfect linear relationship between the variables under the study. The correlation matrix was used to determine if any pair of independent variables was highly collinear through the magnitude of the correlation coefficient of the pairs of variables established. This bias arises when one or more pairs of independent variables are perfectly correlated to each other. Most pairs were found to be highly correlated leading multicollinearity.

Table 4.2: Correlation Matrix

Variables	Total Loan Advanced	Bank Size	Bank Capitalization	Volume of Deposits	Cash Reserve Ratio	Interest rate spread	Real GDP Growth Rate
Total Loan Advanced	1.0000						
Bank Size	0.9802*	1.0000					
Bank Capitalization	0.9212*	0.9363*	1.0000				
Volume of Deposits	0.9773*	0.9962*	0.9145*	1.0000			
Cash Reserve Ratio	0.8942*	0.9193*	0.8726*	0.9219*	1.0000		
Interest rate spread	0.1878	0.2148	0.2321	0.2094	0.1981	1.0000	
Real GDP Growth Rate	0.0239	0.0423	0.0389	0.0387	0.0361	-0.0296	1.0000

*Highly collinear pairs

According to Kennedy (2008), multicollinearity becomes a problem if the correlation coefficient is more than 0. As indicated in Table 4.3, the study found that some pairs had a correlation of more than 0.5 which is the threshold to permit retaining of those variables. To correct that, the collinear variables were not included in the regression simultaneously.

4.3 Unit root test

Unit root tests were applied to investigate or detect non stationary in all the study variables which in turn leads to spurious estimates. In this case, all bank and external characteristics under study were subjected to Levin-Lin-Chu unit-root test. In this test if variables are found to be non-stationary, first differencing is applied until the bias is eliminated. Presence of unit root leads to spurious regressions. The null hypothesis in this case was that the variable under consideration was non-

stationary or has unit root and in this study, it was stated as; Null hypothesis (H_0): Panels contain unit roots and alternative hypothesis (H_1): Panels are stationary. From Table 4.3, the Levin-Lin-Chu unit-root test revealed that all variables except total loans advanced had p values less than significance level of 0.05 which led to rejection of the null hypothesis (that the variables had unit root). To obtain stationary, total loan advanced was differenced once.

Table 4.3: Unit Root Tests

Variables	Unadjusted t-statistic and p values	Unadjusted t-statistic and p values after first difference
Total Loan Advanced	-3.1164 (0.6848)	-17.7508 (0.0000)
Bank Size	-6.0774 (0.0041)	
Bank Capitalization	-5.4792 (0.0053)	
Volume of Deposits	-6.6082 (0.0010)	
Cash Reserve Ratio	-10.7735 (0.0000)	
Interest Rate Spread	-18.2127 (0.0000)	
Real GDP Growth Rate	-19.0320 (0.0000)	

4.4 Hausman Specification Test

To determine which model best fits the data or is the most appropriate for the estimation, we performed the traditional Hausman test (Hausman, 1978) which is identical asymptotically to the Wooldridge (2002) test where we first estimate the fixed effects model, save the coefficients and compare them with the results of the random affects model. In the event that we obtain Hausman test value which is larger than the critical chi-square, then the FE estimator is the appropriate choice (Hausman, 1978). The fixed effects method makes assumptions on normal distribution of the stochastic random error term, constant variance of error terms across observations and no serial autocorrelation of the error terms. The null hypothesis was that the differences in coefficients are not systematic. There is strong evidence that our specification follows a FE model as the Hausman test indicates. On conducting the test, it was shown that P -value is less than 0.05 level of significance, which implies that the individual level effects are best modeled using the fixed effects method. The results are indicated in Table 4.4.

Table 4.14: Hausman Specification Test for model selection

Total Loan Advanced (TLA)	Notation	Fixed (b)	Coefficients		
			Random (B)	Difference (b-B)	Sqrt(diag(V_b-V_B))S.E.
Bank Size	BNKSZE	7.51e-06	5.32e-06	2.19e-06	.
Bank Capitalization	BNKCAP	-0.000021	-0.000025	3.55e-06	.
Volume of Deposit	VDEP	0.0000106	0.0000169	-6.36e-06	8.15e-07
Interest Rate Spread	IRS	0.0858791	0.076738	0.009141	.
Real GDP Growth Rate	RGGR	0.0016673	0.000277	0.0013903	.
<p>b = consistent under Ho and Ha; obtained from xtreg B = inconsistent under Ha, efficient under Ho; obtained from xtreg Test: Ho: difference in coefficients not systematic</p> $\text{chi2}(5) = (b-B)'[(V_b-V_B)^{-1}](b-B)$ $= 12.61$ $\text{Prob}>\text{chi2} = 0.0273$					

As per the Hausman test the most appropriate model is the fixed effect which restricts estimation effects of the mean of the distribution effects to one true effect. Despite varied information about a different effect size of each commercial bank represented in the study, it was thus necessary to ensure that all these effects size are represented in the summary estimate.

4.5 Estimation results and Discussion

Panel data approach takes care of the presence of varying variance of the error terms across all the observations in the panels and any serial correlation. Application of robust was useful in eliminating heteroscedasticity as well as serial correlation. Three different models are estimated and shown in Table 4.5.

Table 4.25: Estimation Results Using Fixed Effects-within (Dependent variable: Log TLA)

Variant model specifications with robust standard errors				
Variable	Notation	1	2	3
Intercept		7.2259*** (25.31)	7.227*** (25.61)	7.2492*** (26.54)
Bank Size	BNKSIZE	0.0187 (0.30)	-	-
Bank Capitalization	BNKCAP	-0.00002 (-0.88)	0.000055*** (4.22)	-
Volume of Deposits	VDEP	0.00001 (0.34)	-	0.000016*** (3.99)
Interest Rate Spread	IRS	0.0856*** (4.07)	0.0996*** (4.92)	0.0846*** (4.27)
Real GDP Growth Rate	RGGR	-0.0054** (-2.16)	-0.0076*** (-3.02)	-0.00558** (-2.25)
Number of observations		315	315	315
R - Squared:		Within = 0.4385 Between = 0.7420 Overall = 0.6138	Within = 0.3641 Between= 0.922 Overall= 0.4426	Within = .4354 Between = 0.7449 Overall = 0.7449
Hausman test		chi2(5) = 12.61; Prob>chi2 = 0.0273	chi2(3) = 685.25 Prob>chi2 = 0.0000	chi2(3) = 30.40 Prob>chi2 = 0.0000
F- test		P (5, 34) = 11.39	F(3,34) = 19.18	F(3,34) = 18.31
Prob > F		0.0000	0.0000	0.0000

This Table presents regression with robust standard errors results conducted to determine the determinants of lending behaviour among commercial banks in Kenya. Estimations were performed using fixed effects estimation. T-Statistics are in parentheses and significance at the 10%, 5%, and 1% level is denoted by *, ** and *** respectively.

The R squared was 61.38% implying the variables employed in the model explained lending behaviour of firms for over 60% while other omitted variables accounted for the remaining proportion. Similarly, the overall *p* value was highly significant indicating that both bank and external characteristics were jointly significant in explaining total loans advanced by commercial banks in Kenya.

The study found bank size to be non-significant contrary to theoretical expectations since its *p* value was more than all significant levels used in the study. The study found bank capitalization, volume of deposit, interest rate spread and rate of GDP growth as significant in determining lending behaviour. These findings are inconsistent with Theodossiou (2011); Tomola (2013) and Jonas,

Emmanuel and Kofi (2013). Other studies, concludes that small banks adopt small business loan underwriting practices that are riskier than those of larger banks which ultimately determine the available credit to the public (Cole et al., 2004).

Based on significant determinants; a unit increase in capitalization led to 0.0055% increase in total loan advanced holding other factors constant. This means that commercial have enough reserves that can be readily transformed to cash to meet short and long-term requirements with regard to lending. The study result confirms the findings obtained by Theodossiou, (2011). The author revealed that bank capitalization had a positive relationship with lending behavior of commercial banks.

Volume of deposit was shown to increase total loans advanced by 0.0016% holding other factors constant. This implies that as the total deposit rise, the total advance and loan increases significantly. This may be attributed to the fact that an increase in deposit of a bank enhances its ability to lend more funds to its customers. The study finding was contrary to the findings obtained by Malede (2014) who found out that deposit, investments, cash reserve ratios and interest rates had no significant effect on Ethiopian banks' lending activities.

It was shown that a percentage increase in interest rate spread significantly increases lending volumes by 8.56% holding other factors constant. The finding could be attributed to the fact that interest rate spread affect performance asset in banks and it raised cost of borrowers leading to increased profitability of lending institution and thus lending volumes. This result concurs with the study finding obtained by Irungu, (2013) who indicated that among the 43 commercial banks explored in Kenya, interest rate spread had a strong positive and significant relationship with financial performance of commercial banks.

From the study findings; a percentage rise in GDP growth led to a decline in total loans advanced by commercial banks in Kenya by 0.54% holding other factors constant. However, these results are contrary to theoretical expectations since in the period of financial boom, banks are elastic and therefore lend to both good and bad projects, then in times of economic depression majority of loans become non-performing and thus constraining credit available to private sector. The study finding concurs with the study results of Vazakidis and Adamopoulos (2009) who found a positive and significant effect of economic growth on credit market development. Similarly, Dell'Ariccia and Marquez (2006) found that a high rate of growth in GDP induces a high rate of growth in bank credit.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The importance of banking industry is demonstrated by the growth of financial sector in relation to growth of the entire economy. The banking industry in Kenya has grown tremendously. Lending, through interest rates on loans and advances, is fundamental for this growth and it is a major source of the bank's income. Equally, the industry has faced shocks such as the global financial crisis of 2008-2009 which led to some banks posting losses and decreasing their lending. The main objective of this study was to establish the determinants of lending behaviour among commercial banks in Kenya. Specifically, the study sought to explore the effect of bank specific characteristics and to identify external factors that determine commercial banks' lending behaviour in Kenya.

Secondary panel data was used that covered a period of ten years (2006-2015) to examine factors associated with lending behaviour of thirty-five commercial banks in Kenya. The Hausman test was used and Fixed Effects model was established to be the appropriate model compared to Random Effects.

5.1 Summary of the study findings

From the estimation results, it was found that bank capitalization, volume of deposit, interest rate spread and rate of GDP growth were significant in determining lending behaviour in Kenya's commercial banks whereas bank size was not significant at all levels. Bank size had a positive and statistically non-significant effect on bank lending behaviour. It can be deduced that bank size does not contribute significantly to bank lending behaviour. The positive effect of capitalization infers that commercial banks in Kenya have sufficient assets that are readily covered to liquid to meet short-term and long-term commitments. Volume of deposits has a positive and significant influence on lending volumes among commercial banks in Kenya. Also the findings showed interest rate spread positively and significantly on total loans advanced to customers. This implies that as the cost of borrowing increases, banks significantly increase credit supply in the market. Finally, the study revealed a significant and negative relationship between real GDP growth rate and total loans advanced by commercial banks in Kenya. During periods of economic stagnation, majority of loans become non-performing and thus constraining credit available to private sector.

5.2 Conclusions of the study

There is need to have a comprehensive consideration by commercial banks given the significant relationship established between interest rate spread and real GDP growth rate on lending volumes. Generally, banks have an advantage in providing a large variety of financial services to their clients since they are capable of mobilizing more funds.

5.3 Policy implications

The growth and contribution of financial sector is thus evidenced by the importance of banking industry. This role makes them an important player in economic growth and development. Based on the result, that is the positive and statistical significance of interest rate spread on lending behaviour, commercial banks are required to relook into more innovative ways of improving their loan books so as to raise their income. For example, a commercial bank may reconsider its pricing strategy, offer more attractive products and maintain better banking relationships with their clients. Finally, on the significant relationship established between Real GDP growth rate and lending behaviour the study recommends re-examination of good or bad project that are funded by Commercial banks during periods of economic booms or recessions. This is because, bad projects may not in the long run yield expected outcomes and in times of financial depression many loans may become non-performing and thus constraining credit available to private sector.

5.4 Areas for further study

This study concentrated on exploring the determinants of lending behaviour of the commercial banks in Kenya with a focus on bank and external factors. There is need for consideration of more other factors in future studies like political environment as well as other socioeconomic environment. Other aspects of top management including the diligence of board of directors and firm characteristics are essential. Similar comparative study is required in different trading blocs like East Africa Community, COMESA among others.

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APPENDICES

Appendix 1: List of Banks

BANK NAME
1. ABC BANK
2. BANK OF AFRICA
3. BANK OF BARODA
4. BANK OF INDIA
5. BARCLAYS
6. CBA
7. CFC STANBIC
8. CITI BANK
9. CO-OP
10. CONSOLIDATED BANK
11. CREDIT BANK
12. DEVELOPMENT BANK
13. DTB
14. ECB
15. ECOBANK
16. EQUITY
17. FIDELITY BANK
18. FINA BANK
19. GIRO BANK
20. GUARDIAN BANK
21. HABIB AG ZURICH
22. HABIB BANK
23. HFCK
24. I&M BANK
25. JAMII BORA BANK
26. K-REP BANK
27. KCB
28. MIDDLE EAST BANK
29. NBK
30. NIC BANK
31. ORIENTAL BANK
32. PARAMOUNT UNIVERSAL BANK
33. PRIME BANK
34. STANCHART
35. VICTORIA COMMERCIAL BANK