

**DETERMINANTS OF COMMERCIAL BANKS' LENDING BEHAVIOR IN
KENYA: CASE OF STATE OWNED BANKS IN KENYA**

MAURICE OPIOH KHANGALAH

REG: D61/66084/2013

**RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN
BUSINESS ADMINISTRATION (FINANCE OPTION) TO THE SCHOOL
OF BUSINESS, UNIVERSITY OF NAIROBI**

2016

DECLARATION

I declare that this is my original work and has never been presented in any other university or college for any academic purpose.

Signature _____

Name: **MAURICE OPIOH KHANGALAH**

_____ Date.

This research project has been submitted for examination with my approval as the student supervisor.

Signature _____

Supervisor: **MARTIN ODIPO**

_____ Date.

DEDICATION

This research work is dedicated to my family particularly to my Wife for her encouragement and the Almighty God for His ever presence and guidance in times of need.

ACKNOWLEDGEMENT

My special thanks go to my supervisors, Mr. Martin Odipo for his professional academic guidance during my research. I would also like to thank all my family members, my friend David Waga, my lecturers at the University, and all my fellow students who have been a source of continuous encouragement and growth. I would also to thank my workmate, Mr. Ibrahim Tonui for his support and insightful advice which has gone a long way to realize this dream.

Contents

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
List of Figures	vi
List of Tables	vii
LIST OF ABBREVIATIONS	viii
DEFINITION OF TERMS	ix
ABSTRACT	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study.....	1
1.1.1 Lending Behavior.....	4
1.1.2 Determinants of Banks’ Lending Behavior.....	5
1.1.3 State Owned Commercial Banks.....	12
1.2 Research Problem	14
1.3 Research Objectives.....	16
1.4 Value of the Study.....	16
CHAPTER TWO: LITERATURE REVIEW	17
2.1 Introduction	17
2.2 Theoretical Foundation of the Study	17
2.2.1 Portfolio Theory to Credit Risk Management	17
2.2.2 Information Asymmetry Theory.....	18
2.2.3 Theory of Delegated Monitoring of Borrowers	19
2.2.4 Loan Pricing Theory.....	20
2.3 Empirical Literature Review	20
2.4 Conceptual Framework.....	25
2.5 Summary of Literature Reviewed	25
CHAPTER THREE: RESEARCH METHODOLOGY	27
3.1 Overview	27
3.2 Research Design	27
3.3 Target Population.....	27
3.4 Data Collection.....	28

3.5 Data Analysis and Presentation	28
3.5.1 Data Analysis	28
3.5.2 Data Analysis Model.....	29
3.5.3 Data Presentation	30
CHAPTER FOUR: EMPIRICAL RESULTS DISCUSSION	31
4.1 Introduction	31
4.2 Descriptive Statistical Analysis.....	31
4.3 Statistical test for normality.....	32
4.3.1 Normality Test.....	32
4.3.2 Test for Multicollinearity.....	32
4.4 Correlation Statistics	34
4.5 Model Summary.....	34
4.6 ANOVA Model	35
4.7 Regression results	35
4.8 Interpretation of the Findings.....	37
CHAPTER FIVE: SUMMARY, CONCLUSION, LIMITATIONS AND POLICY IMPLICATIONS	38
5.1 Introduction	38
5.2 Summary of the Study	38
5.3 Conclusion.....	39
5.4 Policy Recommendations.....	39
5.5 Limitation of the Study.....	40
5.6 Further Research Recommendations	41
REFERENCES	42
APPENDICES	49
Appendix i: Publicly Owned Commercial Banks in Kenya	49
Appendix ii: Raw data on state owned commercial banks in Kenya (Kes'000)	50
Appendix iii: Calculated Data	51

List of Figures

Figure 1 : Conceptual Framework (Source: Researcher)..... 25

List of Tables

Table 4.1 Descriptive Statistics of Variables used in the model	31
Table 4.2 Test of Normality among the Variables	32
Table 4.3 Test of Multicollinearity between independent variables	33
Table 4.4 Pearson correlation coefficient result.....	33
Table 4.5 Pearson correlation coefficient result.....	34
Table 4.6 Model Summary Table	35
Table 4.7 ANOVA Model Table.....	35
Table 4.8 Regression Results	36

LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
FASB	Financial Accounting Standards Board
GAAP	Generally Accepted Accounting Procedures
GDP	Gross Domestic Product
IMF	International Monetary Fund
M-PESA	Mobile banking product for Safaricom
MPT	Modern Portfolio Theory
MPS	Monetary Policy Statement
NSE	Nairobi Securities Exchange
NSSF	National Social Security Fund
NPLs	Non-Performing Loans
UAE	United Arab Emirates
VAR	Value at Risk

DEFINITION OF TERMS

Credit Assessment: Is the appraisal process of loan application to determine prospect of an individual or institution borrowing fulfilling their obligations of honoring the loan.

Credit Risk Management: This refers to the system, processes and measures which a company puts in place to ensure that there is a well organized collection of clients' details from the time of credit assessment to monitoring loan performance to ensure that the loans extended are collected in a timely manner.

Credit Risk: This is the probability of a borrower not honoring his debt obligations as per the terms of the loan agreement. It therefore constitute the possibility of a lender not getting back the loan extended to its client thereby leading to a financial loss.

Default is the inability to repay the loan by either failing to complete the loan as per the loan agreement or neglect to service the loan (Vandell, 2009).

Loan default is an occurrence of failure by the debt obligor to honor the loan repayment terms as per the loan agreement.

Loan refers to money extended by an organization or individual to another party evidenced by a note repayable within a specific defined timeframe with an interest.

Performance; financial (profitability) of commercial banks

Risk: the uncertainty of future events or outcome differing from the expected outcome.

ABSTRACT

This study sought to examine the determinants of lending behavior by commercial banks in the Kenyan banking sector with a focus on lending behavior of state owned commercial banks in Kenya. It sought to put to test what determines the lending behavior of commercial banks. There are many factors that can determine the lending behavior of banks but this study focused on Capital adequacy, Asset Quality, Interest rates and Liquidity. These made up the independent variables of the study. Most research studies focused on private & listed banks in the Nairobi Securities Exchange and thus the study sought to address this knowledge gap by focusing on Kenyan state owned banks. The study adopted descriptive survey with the population targeted being the three state owned Kenyan banks. This research relied on secondary data which was collected from the website of the state owned banks. The study used both inferential and descriptive statistics in the analysis. The descriptive statistical tools are used to enable a researcher to illustrate the data and determine the degree of its usage. Regression analysis was the main analysis tool. Excel 2007 application, tabulations, percentages, means and other central tendencies were used to analyze data. Findings were summarized using tables for further analysis. The study established out that liquidity ratio and capital adequacy positively affected credit extension significantly whereas interest rate and asset quality inversely affected credit creation of the state owned commercial banks. The effect of loan pricing (denominated in interest rate) on lending behavior was found to be statistically significant whereas asset quality was found to be statistically insignificant.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

From the ancient times, since the discovery of money, there have always been those who possess surplus funds which they may not need for their immediate use, referred to as surplus economic units and those who lack cash to finance their current needs. Those with the excess money started extending credit to finance the needs of those with cash shortage for a consideration leading to the evolution of credit (Olusanya et al 2012). The system was characterized by direct lending where the players were to directly engage with each other. It involved the surplus units (lenders) and the deficit units (borrowers) directly search out themselves and dealing directly, thus the lender taking all the risk by himself. The evolution of the system has since seen the rise of indirect lending slowly replacing the direct lending. Indirect lending involves pooling of deposit from various surplus units (firms, government and individuals) by banks and extending loans to those in need of money. The commercial banks will then compensate the depositors with interest on their deposits and assumes the risk of default. The banks will then add a margin which is commensurate with the risk profile of the borrower to what is being paid to the depositors to arrive at the charges to the borrower. The loan repayments are then made through the banks.

Lending is a major service rendered by banks which contribute immensely to their revenue generation. The loans can either be short term, medium or long term depending on the type of need being addressed. Lending is therefore a major driver in aiding the economic activities of households, firms and governments which in turn influences the growth and development of any nation's economy. Lending activities of banks influences the growth of an economy through

provision of resources for investments, McKinnon (2005). This has led to liberalization of financial institutions by many economies, Kenya included. It must be realized that the financial intermediation role that commercial banks play make them to be in a position to determine financing of various economic sectors based on available opportunities and the risks associated with each sector. However, economists still remain divided in their opinion on determinants of lending behavior despite well known liberalization policies.

The bank loans provide a major source of long term financing in major economies. Commercial banks play the critical role of mobilizing savings and allocating the financial resource. Ultimately, commercial banks find themselves playing a crucial role in determining the economic growth and development in any country. Olokoyo (2011) opines that, banks have the capacity, potential and prospects for financial resources mobilization and apportioning the same to productive investments. Olokoyo (2011) further observes that commercial banks would be interested in extending credit facilities to their customers as they are guided by three principles of solvency, liquidity and profitability without necessarily being influenced by country's economic policies.

In most developed countries like Japan, 70% of the total loans represent long-term debt. Caprio & Demirguc-Kunt (1998) noted that commercial banks operating in emerging economies are hesitant in granting long-term loans to private firms. Therefore it is generally agreed that the obstacle to economic growth in the emerging economies is scarcity of long-term credit. It is further observed by researchers that non-financial institutions in the developing economies consider lack of long-term credit to be a critical factor in impeding their operations and growth.

They opine that the firms which register faster growth had higher proportion of long term debts to total debts.

Bashir, (2003) asserted that large-sized banks are better placed in providing a bigger array of financial instruments to their clients by mobilizing deposits and funds from various sectors and institutions. Cole et al. (2004) also opines that, smaller financial institutions leans towards underwriting small sized loans to small business people which tend to be more risky than the portfolio of the bigger banks. Salas and Saurina (2002) observed that a huge balance sheet allows credit risk managers to diversify their investment portfolio by exploring different geographical and/or economic sectors so as to mitigate the risk of asymmetric shocks. Rajan and Dhal (2003) asserts that, bank size has a relationship with the occurrence of non-performing loans.

According to a report by the Financial Sector Deepening (FSD, 2011), the financial system in Kenya could be looked at as formal, other formal and informal. The formal sector is highly regulated whereas the other formal are just registered under the Kenyan law. The informal financial sector is not registered. This definition uses legal framework in setting boundaries though there is further continuum of formality. For example, in the informal classification Accumulating Savings and Credit Associations (ASCAs) are more complex and formalized in their operations than the Revolving Savings and Credit Associations (ROSCAs).

The surveys that were conducted by FSD in Kenya to measure the extent of use of financial services in 2006 and 2009 provided the first comprehensive statistics on financial inclusion in Kenya, factoring the recent developments. From the findings, it was reported that the overall financial inclusion in Kenya rose from 58.7% to 67.3%, which accounted for a drop in financial exclusion from 41.3% to 32.7%. the total formal inclusion registered a big jump from 26.3% to

40.5% largely which was largely driven by the introduction of mobile money transfer services categorized as 'other formal', majorly M-PESA. On the other hand, the usage of regulated formal financial services rose significantly albeit far more modestly from 18.5% to 22.6%.

The Kenyan banking segment while recognizing market risk to be of a great concern to all institutions, 95% of all the banking institutions cited credit risk as a major concern (CBK, 2011). It has been observed in the Kenyan Banking Sector that whereas market risk could easily be managed through hedging activities, the latest challenge facing commercial banks is credit risk.

1.1.1 Lending Behavior

Scholars have done a lot of review regarding credit extension related activities by various financial institutions. Some researchers investigated what determines the willingness of a bank to extend loans to different sectors of the economy, whereas others sought to find out the impact of such loans and advances on the productivity and output of an economy. Majority of these research works concurred that commercial banks ought to have some basic lending canons and system that will act as a guide in their credit extension activities (Olokoyo, 2011).

It is a common knowledge that deposits or cash received from depositors is the major source of lending but the total amount lent out is usually a fraction of the aggregated deposits and the balance is usually held in reserve to maintain the liquidity position of the bank. Credit creation is usually the main primary business for majority of banks. It can be deduced that loan portfolio constitute the largest portion of financial assets and revenue stream for banks (Comptroller 1998).

Banks usually factor in very many elements in the process of determining the likelihood of a potential borrower honoring his loan obligations when making a credit decision which includes

the ability and willingness to repay the extended facility. The key elements that banks consider are the borrower risk profile and client-bank relationship. The most important element is the risk factor in that even if an individual has good and long term relationship with the bank and is willing to repay back the loan sought but lacks the ability, it will be impossible for the bank to get back their principal and the interest levied as they fall due. The banks should therefore carefully evaluate the risk profile of the borrower, which is basically the ability to meet future loan repayments when they fall due, in their credit extension decisions.

The past relationship with the client is important in helping the bank obtain more private information about the client' business and financial position that will eventually help the bank in making credit decision. Degryse, Masschelein and Mitchell (2004) while describing the importance of the bank-firm relationship factor, concluded that its through the bank-client relationship that banks are able to get more private information about their customer's business and financial position more than the other banks that have not had previous relationship with the same client. This is obtained through debt monitoring and other services enjoyed by the client.

1.1.2 Determinants of Banks' Lending Behavior

Determinants of banks' lending behavior refer to the factors affecting the credit extension by commercial banks. Banks usually consider a number of factors in determining the lending decision which relates to the sector of economy to lend to, the type of clients to take risks on and the amount to be extended. These factors revolve around interest rates, liquidity, asset quality and capital adequacy.

Loan pricing or interest rate is one of the most important factors considered by both the borrower and the lending institution in the process of lending decision. Banks cannot levy loan charges

that are too low which will not be adequate to compensate the cost of deposit paid to depositors, general expenses and revenue loss from non-performing loan book. Likewise, they cannot levy too high charges that will not allow them to maintain relationship with their clients. The pricing model should factor the adverse selection and moral hazard incidences from setting in since its extremely difficult to gauge the behaviour of individuals and firms from the onset of the relationship (Stiglitz and Weiss, 2001).

High interest rate may trigger adverse selection problem since the high rates will be mostly acceptable to the high risk borrowers. Once these category of borrowers receive the loans, its highly likely that they may develop moral hazard behaviour as a result of venturing into high risky projects and investments (Chodechai, 2004). According to Stiglitz and Weiss (2001), it's a common occurrence in most cases where the interest rate charged by banks does not mirror the risk profile of the borrowers.

According to the Neoclassical Credit Market Model, the credit terms placed by banks determines the market dynamics. Assuming that collateral and other covenants attached to loans are held constant, the only price mechanism becomes the interest rate. The model therefore postulates that an increase in demand for credit facilities will lead to high interest rates and vice versa. It is believed that the higher degree of failure by the borrower to honor debt obligation, the higher the interest premium (Ewert, Szczesmy & Schenk, 2000).

Low interest rate might trigger high demand for credit which in turn may lead to currency devaluation. To maintain currency value, the interest rate must be adjusted by central banks from time to time to make loans more expensive. This can be countered by adjusting the Central Bank Rate (CBR) upward thus making the loans less attractive (Crowley, 2007). Commercial banks on

the other hand, will have to increase their rates leading to reduced lending as credit becomes expensive.

The cost of borrowing is reduced by low interest rate, which in turn drives the investment activities and high consumer durables purchase. Banks may also ease lending policy given an expectation that economic activities will strengthen, thereby boosting spending power by businesses and households. Low interest rate may trigger investing into stocks, raising households' financial assets. The impact of this may be increased consumer spending, making firms' investment projects more attractive. The main concern for the empirical analysis arises from the fact that banks heterogeneously react to changes in monetary policy. This varied responses by commercial banks emanate from their diverse balance sheet dynamics. There are therefore other mechanisms that play an important role in influencing bank's lending activities despite change of policy on interest rate such as liquidity levels and bank size, Diamond and Rajan, (2006) and Bolton and Freixas (2006).

According to Kenneth and Collins (2011), interest rate refers to proportion of return on investment to the associated cost of deposits and/or borrowed funds. It is influenced by the demand for and supply of money. A borrower of sound financial position is usually granted long term interest rates on loans for a longer period. These rates are mirrored in Kenya by the interest rate charged on long-term financial securities such as bonds. On the other hand, short-term interest rates are based on rates charged on treasury bills. The short-term rates have higher fluctuations but at the same time averages lower compared to the long-term rates.

Liquidity refers to a bank's ability to honor its financial obligations, mainly to depositors, whenever they are in need of their deposits. Comptrolle's Handbook (1998), recognizes lending as the main

business activity for the majority of commercial banks. The largest asset in a bank's balance sheet is probably loan portfolio which contributes heavily to a bank's revenue. This makes it to be the largest source of commercial banks' risk to its safety and sound position. Pilbeam (2005) postulates that the liquidity level held by banks relies to a great extent on demand for loan which forms the foundation for growth in loans. A lower demand for credit facilities leads the commercial banks to keep more of short term assets, whereas a higher loan demand triggers holding of less liquid assets which is informed by the high profits associated with the long term loans. Thus, loans and advances posit an inverse relationship with the banks liquidity.

Dang (2011) argues that liquidity is positively related with the profitability of a bank. According to Dang, the liquidity position of a bank is majorly measured by two ratios; a ratio of customer deposit to total asset and a ratio of total loans to customer deposits. Other researchers measure liquidity by using different financial ratios. For example Ilhomovich (2009) applied cash to deposit ratio in measuring the level of liquidity for banks in Malaysia. On the other hand, the studies which were carried out in both China and Malaysia did not find relationship between liquidity level and the banks performances (Said and Tumin, 2011).

Ituwe (1983) opines that the availability of cash in a bank's vault dictates a bank's capacity to extend credit facilities. This is informed by the fact that the bank should be able to pay the client money on demand, which is done in two ways, either through cash withdrawal or banks' accounts, which is basically use of cheques. Banks are therefore required to keep sensible amount of cash to cover their clients' demand. Goldfeld and Chandler (1980) asserted that liquidity is paid much more attention by banks than the other types of financial institutions e.g. insurance companies dealing in life policies. It should be noted that banks meet their payment obligations largely from the current receipts of liabilities from its normal business course.

Kothari (2010) opines that liquidity ratios of any business outfit demonstrate their financial sound position. It shows the capability of an enterprise to meet its maturing obligations. A firm's solvency position is reflected through these ratios. There are three types of liquidity: First is the Current Ratio which measures the relationship between the current assets and the current liabilities. It shows whether an institution has instant ability to pay off the current liabilities as they mature and whether it can face unforeseen reverse by the strength of its liquid position. Secondly, We have Quick Ratio or Liquid Ratio; which measures the correlation between quick assets and the current liabilities, where Quick Assets = (Current Assets – Closing Stock). And lastly, Acid - Test Ratio, which measures the relationship between very quick assets and current liabilities. Very quick assets = (Current Assets – Closing Stock and Debtors).

Back in Kenya, according to CBK (2007), liquidity is determined as a ratio of a bank's net liquid assets to its net deposits and short term liabilities. This shows ability of an institution to honor its maturing obligations. The banking sector continued to register a strong liquidity position. A strong liquidity position in economy is a demonstration of the sector's liking for liquid assets which are generally government related financial securities which are risk free in nature. The regulator (CBK) has set a minimum requirement of 20 per cent to be maintained by the commercial banks in Kenya.

Asset quality refers to the relationship between loan provisions and the total loans. The loan provision is an expense to the profit and loss statements and therefore needs to be mitigated appropriately. It therefore measures the efficiency of a bank management in raising revenues by extending loans and advances. The lending efficiency here refers to the relationship between non-performing loan book to the total loan book.

Lending carries with it risks in that the loan repayments is not guaranteed all the time and largely depend on other factors which are within the borrower's control. Managing loans therefore in an appropriate way has positive effect on both the performance of the bank and also on the borrower and the economy of a country as a whole. Poor loan management would definitely lead to soaring levels of non-performing loans. This will have a multiplier effect on the performance of bank and economy at large. The Central Bank of Kenya report (2012) reported that the Kenyan banking industry had been steadily registering high Non-Performing Loans (NPLs) in the last three years. The NPLs decreased between 2009 and 2012. It showed that in the period 2009/2010, NPLs reported was Kes 61.5 billion (7.4%). In 2010/2011, NPLs reported was Kes 58.3 billion (5.4%). In 2011/2012, the NPLs reported was Kes 57.5 billion (4.5%). The figures released still remain high despite there being a decline in NPLs.

The loan quality in the loan portfolio of a bank is indicated by the level of non-performing loans. This shows the level of the bank's lending profitability. NPLs will lead to provision for the non performing loan portfolio with a view of either writing-off the entire loans or part of the non-performing loans. Written off loans are treated as losses that are expensed in the bank's books which have a negative impact on their equity capital, hence the unwillingness by the bank to take fresh risks and assign new loans. This situation may lead to a credit crunch. Low asset quality triggers the bank to re-examine their risk appetite. According to Amidu and Hinson (2006), lending portfolio portrays the bank loans quality which in turn shows the relationship between credit risk and bank lending.

The banks' capital serves as a protection of the bank's depositors' funds. The capital size compared to deposits determines the risk level that a bank can take. Banks with bigger capital structures can extend loans that have longer maturities and relatively high risk. Furlong (1992)

asserts that bank regulation in general on capital in particular were perceived as more stiff in the 1990s. The growth rates on bank loans in New England were positively related to capital to asset ratios. Thus, regulation on capital impacted heavily on bank lending (Furlong, 1992).

According to Cumming and Nel (2005), while studying lending behaviour using trend analysis in South Africa found out that the 1988 Basel Accord implementation led to increased capital adequacy ratio meaning additional capital was injected to address the implementation of the new accord. This had an impact of decreasing banks lending, thus leading to economic contraction. Kishan and Opilela (2000) on the other hand asserted that size of the bank's asset and its capital had an inverse relation to the bank's ability to raise funds and continue growing its loan portfolio during economic contraction period.

Capital adequacy illustrates the potency of a bank's capital against other financial and economic variation. Gambacorta et Mistrulli (2004), opined that since 1988 when Basel Capital Accord came into effect, a lot has been reviewed on impact of a bank's capital on its lending but empirical literature from the Western Countries have not been exhaustive in this area. Ehraman et al (2003) concluded that monetary tightening has a serious negative effect on the lending activities of banks which are undercapitalized.

A bank's health is usually measured by its capital adequacy and the level of non- performing loans (NPLs). High NPLs position and low capital adequacy level have a negative effect on the credit creating activities of banks. According to Fukuda et al. (2006), the banks in Japan displayed that their lending activities were impacted negatively by regulatory capital adequacy and the non-performing loan ratio.

It can therefore be concluded that there exists a mix relationship between the capital adequacy of a bank and lending behaviour. Berrospide and Edge (2010) postulated the relationship between a bank's activities and financial conditions is impacted largely by the bank's capital on its lending. Using shared regression analysis, Rababah (2015) found out that capital had no significant effect the banks' lending activities by commercial banks in Jordan.

1.1.3 State Owned Commercial Banks

State ownership is attributed to interests on properties that have been bestowed in the state or a public body which represents a community and not private party or an individual. Nationalization refers to the process of bringing an asset to the ownership of a state. State owned banks are banking institutions that are either wholly owned by the state or state agencies or where the state is the majority shareholder. There are many arguments as to why states get involved in commercial banking.

The argument for state involvement into the banking sector could be categorized broadly into four groups. This could be maintaining the reliability and safety of the banking system, mitigating market failures as a result of asymmetric and costly information, financing socially valuable projects which are not financially viable and financial development promotion and offering an opportunity to accesses to banking services in areas that have been isolated by the other banks.

According to an IDB report published in year 2004, there was big shift on state' role in the economy in the years 1980s and 1990s which culminated to privatization of state owned corporation. In line with this, there were more than 250 banks that were privatized between 1987 and 2003, raising more than US\$ 143 billion in the process. However, despite this major step,

many sovereign nations still have banks under their ownership. By mid 1990s, it was reported that about 25% of the total assets of the big banks in developed economies and about 50% of the assets of the big banks in the developing economies were under state control.

In Kenya, there are three state owned banks as listed in the CBK website; National Bank of Kenya, Consolidated Bank of Kenya and Development Bank of Kenya Limited. National Bank of Kenya was registered on 19th June 1968 but officially opened its doors on 14th November 1968. It was 100% government owned at the time. The main objective for its formation was to enable Kenyans access credit and gain control of the country's economy after it attained independence. Currently the shareholding stands at NSSF - 48.06%, General Public – 29.44% and Kenya Government 22.5%.

Consolidated Bank of Kenya Limited was registered on 7th December, 1989. The aim was to stabilize the banking industry by acquiring nine institutions which were insolvent at the time and restructuring them thereafter into a viable, professionally run commercial bank. Consolidated bank is fully owned by the Government through The National Treasury which commands 78% shareholding while the remaining 22% shareholding is spread over 25 Parastatals and other quasi government agencies.

Development Bank of Kenya was incorporated in year 1963 by the Kenyan Government through the Industrial and Commercial Development Corporation (ICDC), the British Government through Commonwealth Development Corporation (CDC) and the German Government through DEG. The fourth shareholder to invest into it was the Dutch Government through FMO in 1967 and the fifth investor was International Financial Corporation (IFC) in 1981. The ownership has

evolved over a period of after 45 years to be fully Kenyan owned with Industrial & Commercial Development Corporation (ICDC) controlling 89.3% and Transcentury Ltd – 10.7%.

1.2 Research Problem

Lending is a major service rendered by banks which contributes immensely to their revenue generation. The loans can either be in short term, medium and/or long term form basis depending on the type of need being addressed. Lending is therefore a major driver in aiding the economic activities of households, firms and governments which has a bearing on the economic growth and development of any nation. Thus, economic growth is generated through banks lending activities which provide resources for real investment (Mckinnon, 2005).

Commercial banks play a very important role of savings mobilization and financial resource allocation which makes them play a critical role in the growth of an economy and its development. Olumuyiwa (2012) asserts that as banks perform this role, it needs to be noted that the banks have capacity to mobilize resources and allocating the same to investments ventures which are productive.

The business of banking is so sensitive by virtue that most of its revenue is generated from lending activities (Jeoitta Colquitt, 2007). The lending process may expose the bank to high risk that may lead to a loss. Therefore, it is imperative for banks' executives to understand the determinants of lending behavior otherwise good bank performance or profit would be improbable.

The financial intermediation role that is played by the commercial banks is critical in spurring economic growth and development of any nation. Through the intermediation process, banks are able to aggregate deposits which are in turn used to finance the various sectors of economy. Poor lending practices will lead to banks incurring heavy losses which could see such players collapse. This might have a ripple effect in the economy which might lead to a total collapse of the banking sector.

The banks have over the years come up with innovative ways of dealing with the credit risk which apparently is the oldest but most demanding for commercial banks, (Broll, Pausch and Welzel, 2002). This risk originates from the chances that a borrowing client will not honor the debt obligations, thereby placing the bank's capital in jeopardy. This concern has led to a lot of effort being put towards managing the bank's exposure to credit risk, with the most notable attempt being the Basel-II accord which was later revised to Basel-III. The Basel guiding principle is to entrench a strict culture of managing inherent credit risk by commercial banks internationally.

The banking industry in developing countries such as Africa and Kenya in particular forms a strategic hub of the financial system. The existing literature does not provide adequate empirical evidence on the lending behaviour of banks in developing economies like Kenya. Despite having witnessed an impressive profitability era, which was characterized by stiff competition, massive deposits and wide investment opportunities by Kenyan commercial, it has been noted that some banks tend to ignore the reality that their administration should be anchored on specialized skills and dexterity on the part of their management. In a case where a bank grants credit facility in disregard to its liquidity position, then it may run into trouble in meeting its customer's cash drawings on demand. Poor loan service will impact negatively to its profitability and consequently the level of its liquidity. The Kenyan banks have recently reported an upsurge of non-performing loans in their books. The study therefore sought to investigate what determines the lending behaviour of commercial banks by investigating the extent to which liquidity ratio, capital adequacy, asset quality and interest rate determine total lending.

1.3 Research Objectives

The study's main objective was to ascertain the determinants of lending behavior in publicly owned banks in Kenya. The specific objectives that guided this study were as below:

- i.) To establish the effect of capital adequacy on lending behavior in publicly owned commercial banks in Kenya.
- ii.) To determine the effect of interest rate on lending behavior in publicly owned commercial banks in Kenya.
- iii.) To ascertain the effect of asset quality on lending behavior in publicly owned commercial banks in Kenya.
- iv.) To determine the effect of liquidity on lending behavior in publicly owned commercial banks in Kenya.

1.4 Value of the Study

This study was designed to establish the lending behavior of Kenyan commercial banks. It was imperative to appreciate how the banking systems in emerging economies in general and Kenya in specific functions. This was to shed light on how Capital adequacy, Asset Quality, Interest rates and Liquidity affect the features and structures of debts which eventually is reflected in the loan terms that form the basis of contracts between the bank and their clients.

The findings would also help the regulator in formulating credit risk management guidelines to govern the various credit related risks which include lending limits, risk weighted assets and economic sector financing which will in turn impact on the asset quality. The management team of the commercial banks will also benefit from this study by appreciating which factors to give weight while making credit decisions and managing their loan book.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the work of the other researchers who have carried out similar research to this study but on different context.

2.2 Theoretical Foundation of the Study

There are many theories that have been advanced around credit assessment and management by different scholars. We shall be examining four theories; portfolio theory of credit risk management, information asymmetry theory, loan pricing theory and theory of delegated monitoring of borrowers.

2.2.1 Portfolio Theory to Credit Risk Management

Commercial banks have effectively used the Modern Portfolio Theory (MPT) to market risk from the 1980s to credit management. Most commercial banks have adopted Value At Risk (VAR) models in managing their market risk exposures and the interest rate charged. Unfortunately, despite banks' listing credit risk as their main challenge, the practical of modern portfolio theory to credit risk has trailed (Margrabe, 2007).

Commercial banks recognize the impact of credit concentration on their financial performance, which if not well managed, can be adverse. This has MADE majority of commercial banks to apply quantitative approaches to measuring credit risk, though the main obstacle to this has been reliable data. The banking industry has also made significant steps towards developing tools that can be used in measuring credit risk. The banks have also resorted to credit derivatives in a bid to efficiently transfer risk which they are not keen in shouldering while at the same safeguarding

customer relationships. These two emerging issues have therefore accelerated the progress made in credit risk management over the past years on a portfolio context.

The traditional approach that banks applied initially was asset-by-asset approach in credit risk management. This method involved evaluating the loan book quality and other credit exposures from time to time, using credit risk rating and comprehensively factoring the results of this analysis to tabulate the possible losses of a given loan portfolio. The asset-by-asset approach is anchored on a sound credit review and the bank's internal credit risk rating system. Credit risk rating systems and periodic loan review enable the management to recognize the portfolio trends timely. Based on the outcome of an institution's problem in loan identification, credit risk rating system and loan review, the management may then modify its portfolio strategies or simply accelerate the loan supervision in a timely manner

The main weakness of asset-by-asset approach is a failure to provide a comprehensive view of credit risk portfolio, where the term risk refers to the likelihood that real losses exceed expected losses. The major weakness with the asset-by-asset approach is the inability to identify and measure concentration risk. Concentration risk is the increased risk that results from an amplified exposure to either a single borrower, related borrowers or to a particular industry. Commercial banks therefore augment this approach with a quantitative review of credit portfolio using various credit models.

2.2.2 Information Asymmetry Theory

This theory is anchored on the premise that a borrower might have lots of information that the lender might not have regarding the risk associated to the project they have approached the bank to finance. This may lead to problem of adverse selection and moral hazard (Scholtens & van

Wensveen, 2008). These information gaps can lead to the reduction of the effectiveness of transferring funds from those who have excess to those who are in financial need. The bank may overcome these challenges in three folds: by developing a commitment to a long term relationship with the clients, secondly through sharing of information with the other players and thirdly by delegating the role of monitoring of borrowers. Before a bank can sanction loan, it's important to collect all the relevant information to so as to address the information asymmetry challenge.

2.2.3 Theory of Delegated Monitoring of Borrowers

Monitoring of borrowers by banks relate to gathering of information during the loan appraisal process and post loan disbursements. It involves checking whether the borrower has fulfilled the lending requirements of the bank, screening the borrower to find out his creditworthiness and post deal tracking to ensure that all the covenants are adhered to. In cases where the banks operate client's transactional accounts, they tend to have privileged information in terms of the cash flows and expenditure. This privileged information comes in handy in the cases of small and medium business (Drzik, 2005).

Financial efficiency in the banking sector has been highlighted as a requirement for growth of economy. This explains why a lot of emphasis is placed on continued research on this area. This is further informed by change in the banking industry which is characterized by stiff competition. Increased globalization and financial deregulation have ushered in era of new competition to the local banking which has seen considerable banks diversifying their operations to keep in pace with the current trend (Altman, 2008). The banks have since seen information technology providing varied opportunities for developing new non traditional banking products and

enhancing their distribution channels, for example internet and mobile phone banking platforms. This has led to reduced branch infrastructure investment.

2.2.4 Loan Pricing Theory

It's not practical for banks to always offer very low interest on deposits but at the same time offering high interest on loans so to maximize on their revenues. Banks ought to consider the problem of moral hazard and adverse selection in their attempt to maximize on revenue since it's hard to focus borrower type with certainty at the time of initiating client relationship (Stiglitz and Weiss, 1981). High interest rate might trigger adverse selection problem since the high rates will be mostly acceptable to the high risk borrowers. Once these category of borrowers receive the loans, it's highly likely that they may develop moral hazard behaviour as a result of venturing into high risky projects and investments (Chodechai, 2004). According to Stiglitz and Weiss (2001), it's a common occurrence in most cases where the interest rate charged by banks does not mirror the risk profile of the borrowers.

2.3 Empirical Literature Review

Banks are in a better position to estimate the probable performance of proposed projects financing due to the fact that they may draw experience from similar past ventures that they have financed. They are usually in a position to obtain valuable data that may not readily be obtained by entrepreneurs. They are also expected to be familiar with the economic dynamics of their geographical scope and the common economic trends. This explains the role of banks in the business of project-evaluation (Manove, Padilla and Pagano, 2000). At the same time, they need to balance between revenue generation and the associated risk emanating from their lending activities. Banks should carefully evaluate their potential borrowing clients to ensure that they do

not extend a lot of loan to highly risky clients who may not honor their loan repayment obligation. This may not be sustainable in the long run since if the borrowers do not pay.

The banks' lending terms may then be motivated by the need to maintain its clients which might present it with opportunity to benefit from other business prospects which may be non-interest bearing revenues such as commissions and fees. Thus, the banks should not overlook the importance of the relationship factors since they may provide inside information which might be beneficial to it in future. It is therefore exciting to observe how banks aggregate the relationship factors into their lending decisions. Boot (2000) while researching on banks from banks based in UK, Germany, USA, and Japan, concluded that transactional banks are less effective than the relationship banks in their lending decisions.

Several studies have been reviewed on commercial banks lending behavior. Some researchers focused on the factors influencing credit extension by banks to economic sectors, while others reviewed the effects of lending on economic growth and development. Majority of these research works concurred that commercial banks ought to have some basic lending canons and system that will act as a guide in their credit extension activities. It is therefore important to review and consider some of the factors that have been proposed by other scholars in their attempt to understand the determinants loan creation by commercial banks.

Nwankwo (2000) asserted that credit is the largest revenue generating asset in the bank's asset portfolio. This elucidates the reason behind banks investing heavily on credit assessment and monitoring tools to maintain a healthy loan portfolio. According to Chodechai (2004) while researching on the factors that affect interest rates, lending volume and collateral requirement in the loan decision making, observed that commercial banks have to pay attention to their pricing

strategy since they cannot afford to price too low since low interest rates may not be enough to cover the cost of deposits, administrative expenses and losses arising from the non-performing loans. Besides, very high interest rate may also lead to the problem of adverse selection and moral hazard checking in.

Ezirim (2005), asserted that lending decisions role carried out by banks is prone to risks which may require banks to be more cautious and tactful. Credit analysis which involves good deal structuring and presentation is the key to success in bank lending. Osayameh (1991) also supported this observation by adding that the increased absence of corporate and business advisory platforms and ballooning non performing loans in the commercial banks in Nigeria demonstrated that banks are not using adequate lending tools in the credit management.

Irina B. (2003), while assessing the exchange rates and liquidity of banks in Europe found out that high interest rates discourages people from accessing loans. On the other hand, Abdkarim et al (2011) while studying the effect of interest rates on credit creation by Malaysian banks also observed that there exists an inverse relationship with the bank lending volume. Tomak (2013) on the other hand in his study of the banks' size and market based variables such as inflation rate, interest rate, and GDP effect on the lending volume of banks in Turkey observed that the banks' size, NPL level, inflation rate and asset quality all affect banks credit creation activities. Djiogap and Ngomsi (2012) used a sample of thirty five banks from six African countries to examine factors affecting the banks' long term credit and concluded that the bank's capitalization, availability of long term maturing liabilities, GDP growth and its size affect the ability of commercial banks to extend loans. These results recognized the value of a bank's liquidity position in credit creation. Besides, Chernykh and Theodossiou (2011) postulated that

the only determinant of credit creation by banks is its size, which simply refers to the banks capitalization and its assets.

Chodechai (2004) while researching on the elements that influence interest rates, collateral requirement and lending volume by banks observed that pricing decisions have to be taken with a lot of caution by banks. He also concluded that too low interest rates on loans may not compensate it from the charges on deposits, other associated expenses and loss given default. On the other hand too high interest rates may trigger the problem of moral hazard and adverse selection. Abdkarim, Mohd, Adziz (2007) on the hand observed that tightening monetary policy instruments in Malaysia e.g. interest rate had an inverse relationship to lending decisions on all the sectors. Besides, they also noted out that interest rate exhibited a positive relationship with the Islamic loans but negative one with the conventional financing.

According to Wilcox (2012), lending decisions experienced a small and statistically insignificant effect by the reserve requirements changes. Besides, Sapeinza (2004) observed that privately owned banks displayed a different behaviour from the state owned banks. They found out that private banks systematically charge high interest rates to similar or industrial firms than do state owned banks. However, privately owned banks favor mostly small firms which are located in the economically active areas. The results of the electoral process of the party(ies) linked to the bank was found to affect the lending characteristics of government owned banks.

Takats (2010) while studying the lending activities of commercial bank observed that lending generally fall across the border during times of recession. The study relied on the data of twenty one developing countries and concluded that bank lending activities is negatively affected by

both the supply and demand factors thereby slowing down lending across border during financial crisis in developing countries.

There is also evidence linking the bank's strength to its credit creation behavior. The tough regulatory measure which restricts entry of banks by demanding that they have high regulatory capital has an influence on the bank's credit creation behaviour. According to Laidroo (2013), lending growth exhibits elements of cyclicity. It was found that growth in lending displayed an inverse relationship with the bank's credit risk and monetary policy indicator but had a positive relationship with the level of liquidity, equity, profitability and deposit ratio of commercial banks.

In Kenya, it is evident that Interest Rate, the rate at which a commercial bank lends money to the borrowers, had linear relationship with quantity of loan (Ayieyo, 2015). He further noted that it is evident that Liquidity Ratio was positively associated with quantity of loan.

2.4 Conceptual Framework

The study adopted the following conceptual framework:

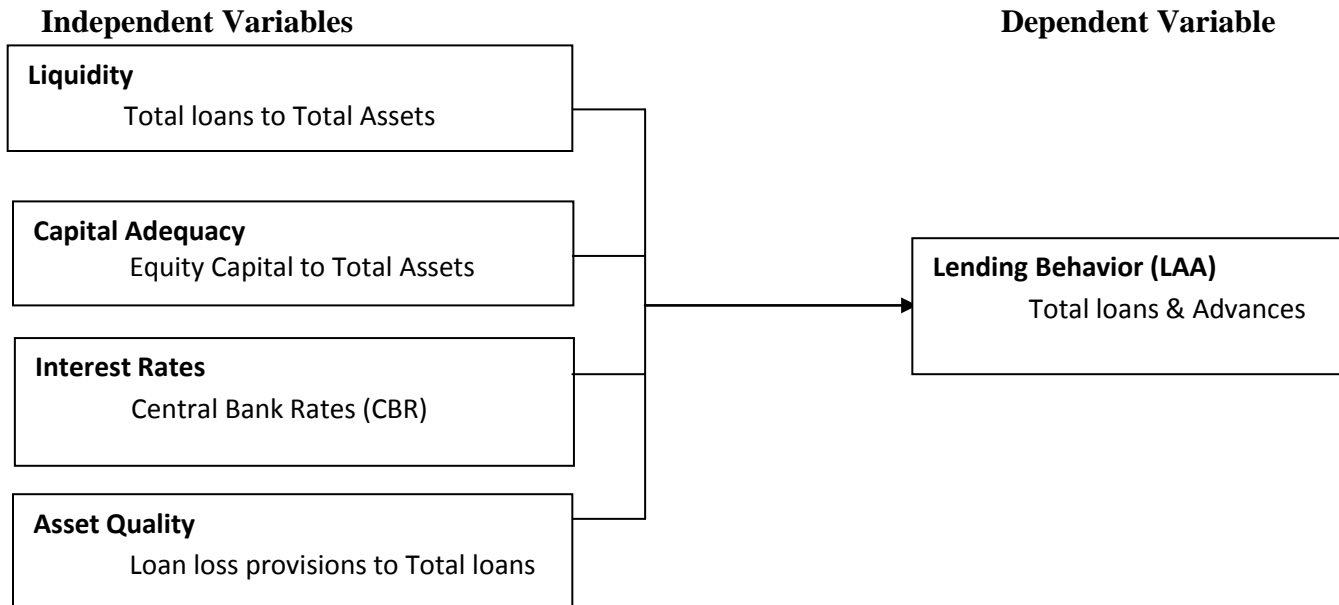


Figure 1 : Conceptual Framework (Source: Researcher)

2.5 Summary of Literature Reviewed

Most of the empirical studies done were in developed economies and majority of them focused on the client-bank relationship factors. In USA, researchers focused on the impact of transactional variables like the length of the relationship period a client has had with the bank and or all the banks that he has been banking with (Petersen and Rajan, 1994; Berger and Udell, 1994). In Germany, the role of the House Bank status has attracted a lot of research (Harhoff and Korting, 1998). All these studies were tailored towards finding out how varied borrower characteristics and client relationship with their banks influenced the credit creation behaviour with a view of explaining why different persons and/or firms (based on their size) were subjected to different treatments on credit amount, pricing, credit covenants and collateral requirement.

It can therefore be concluded that there is paucity of research in investigating the factors that influence credit creation behaviour by commercial banks with focus to consideration on the risks and relationship factors. Majority of the aforementioned studies present inadequate empirical results since the researchers focused on the impact of such decisions on the bank borrower rather than what the finding meant to the bank and banking system. Furthermore, there is little insight on how emerging economies determine their lending decisions, the similarity or difference that it exhibits to the lending theory in first world economies and the contribution of relationship factors and risk in credit creation and their impact on the entire banking system. To date, there is paucity of empirical studies on the credit creation behaviour focusing on lending terms vis a vis the relationship factors and risk profile of borrowers emerging markets. Moreover the few studies that have been done focus on the institutions listed in securities exchange stock market and as such, little attempts have been made to conduct studies on commercial banks based on ownership. The study was consequently designed to address this knowledge gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Overview

The chapter illustrates the study methodology highlighting the study area, the research design, sampling method, the target population, sample size, research instruments, theoretical framework and data analysis model derivation. This is where the conceptual framework was idealized into the study.

3.2 Research Design

The research adopted a descriptive correlation research design. A correlation study refers to a quantitative research method where there exists two or more quantitative variables from the same group, for which an evaluation is being made to determine the existence of a relationship (or co-variation) between or among the variables (Waters, 2005). A multiple regression model was used to establish the association between the total loans advanced by commercial banks and all the other variables which were identified as interest rate, asset quality, capital adequacy and liquidity ratio.

3.3 Target Population

A Target population refers to the exact population on which information is preferred. Ngechu (2004), defines population as a well-defined or set of people, services, elements, events, group of things or households that are being investigated. According to Mugenda and Mugenda (2003), everyone has an equal chance in population study thus making it to be more representative. The population of study constituted all the three publicly owned banks in Kenya as at year 2015 as indicated in appendix ii. These banks are National Bank of Kenya Limited, Consolidated Bank of Kenya and Development Bank of Kenya Limited.

3.4 Data Collection

The study relied on secondary data to carry out the research. Secondary data involved use of previous documents or materials and information that included published audited financial, books, magazines and reports in the libraries. The study also relied on the information published on the websites of the three state owned banks. The study covered a period of ten (10) years from 2006 to 2015.

3.5 Data Analysis and Presentation

3.5.1 Data Analysis

The collected data was quantitative in nature. Descriptive statistics was used to quantitatively carry out the analysis. The researcher relied on the descriptive statistical tools to help in describing the data and determining the degree used. Regression analysis was used as an analysis tool. Regression analysis is a statistical process for estimating the relationships among variables. It comprises of many techniques for statistical modeling and analyzing a number of variables, in a case where research focuses on establishing the relationship of one or more independent variables and a dependent variable.

The study applied both descriptive and inferential statistics in the analysis. Trend analysis was established to determine the behavior of the variables over the ten year time period. The means of the variables were generated and correlations established using t-test at 95% confidence interval. The study then adopted an econometric approach to test the degree of correlation between the variables by employing the multiple regression analysis of the Ordinary Least Squares (OLS) method using Excel 2007.

3.5.2 Data Analysis Model

The secondary data was collected using the audited financial reports of the three institutions. The study used both descriptive and inferential statistics in the analysis and regression analysis was used as the main tool of analysis.

Bank lending behavior was measured by aggregate of total loans advanced by the banks in each financial year. Liquidity was measured as a ratio of total loans advanced to total assets. This was done on each bank over the period under study and the same amalgamated to get the industry position. Capital adequacy was measured as a ratio of equity capital to total assets. Total assets here refer to total loans and advances. Interest rates factor was determined by calculating the average interest rates as published by Central Banks, denominated as Central Bank Rates (CBR). Asset quality was measured as a ratio of loan loss provision to total loans and advances.

The regression equation used to establish the determinants of the lending behaviour by commercial banks in the Kenyan banking sector with a focus on lending behavior of Publicly Owned Banks in Kenya was:-

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u$$

Where: Y is the dependent variable (Lending Behaviour - LAA)

β_0 is the regression coefficient,

$\beta_1, \beta_2, \beta_3$ and β_4 are the slopes of the regression equation

X_1 is Liquidity (Total loans to Total Assets)

X_2 is Capital Adequacy (Equity Capital to Total Assets)

X_3 is Interest Rates (Central Bank Rates, Treasury Bill Rates)

X_4 is Asset Quality (Loan loss provisions to Total Loans)

u is an error term

The *t* - statistic at 95% confidence level was used to measure the significance of the constants of regression $\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 . The significance of the whole regression was tested using the *F* - test at 95% confidence level. The potency of the level to which the four independent variables X_1, X_2, X_3 and X_4 to explain the variation in lending was assessed using the coefficient of determination R^2 , and the adjusted R^2 .

3.5.3 Data Presentation

Data presentation was done by use of percentages, tabulations, means and other central tendencies. Tables and figures were used to summarize and present responses for further analysis and to ease comparison. Cooper and Schindler (2003) noted that the use of percentages is important in simplifying data by reducing all the numbers to range between 0 and 100 and to translate the data into standard form with a base of 100 for relative comparisons.

CHAPTER FOUR: EMPEIRICAL RESULTS DISCUSSION

4.1 Introduction

This chapter presents results of this research on the basis of the formulated objectives.

4.2 Descriptive Statistical Analysis

The descriptive statistics of the dependent and independent variables used in the study are presented in Table 4.1. The study analyzed the descriptive statistical measures of the data to determine the average figures. Results indicated that banks had average liquidity of 0.554. Further, analysis showed that the mean capital adequacy was 0.145. Additionally, mean interest rate was recorded at 9.527%. Finally, mean asset quality was recorded at 0.087. The standard deviations are below the means reflecting a small coefficient of variation. The range of variation between maximum and minimum is also reasonable.

Table 4.1 Descriptive Statistics of Variables used in the model

Variables	N	Minimum	Maximum	Mean	Std Deviation
Liquidity	30	0.243	1.177	0.554	0.168
capital adequacy	30	0.074	0.256	0.145	0.044
Interest rate	30	6.542	16.500	9.527	2.570
Asset quality	30	0.030	0.377	0.087	0.081

Source; survey data (2016)

4.3 Statistical test for normality

The research tested for the data normality. The suitability of the data for the regression analysis was assessed using normality test and Multicollinearity test, since these are the most important factors to consider in regression analysis

4.3.1 Normality Test

The normality of the variables used in the model was tested using Kolmogorov-Smirnov and Shapiro-Wilk tests. In both tests, a non-significant result (i.e. significance value greater than 0.05) shows there is normality. The result, as presented in Table 4.2 shows that most of the variables are normally distributed, with the exception of asset quality. However, since the number of observation is quite high, the result is good for analysis (Pallant, 2011).

Table 4.2 Test of Normality among the Variables

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig
Liquidity	0.123	30	0.010	0.910	30	0.100
capital adequacy	0.173	30	0.200	0.874	30	0.320
Interest rate	0.64	30	0.089	0.075	30	0.637
asset quality	0.093	30	0.000	0.751	30	0.000

Source: Author's Construction, 2016

4.3.2 Test for Multicollinearity

The assumption of Multicollinearity was tested to ensure that there is no strong relationship among the predictor variables. Tolerance and Variance Inflation Factor (VIF) (Pallant, 2009) was used in addition to Pearson's correlation test. The tolerance test illustrates the degree to which

the variability of the specified independent variable has been explained by the other independent variables in the model. From the table 4.3 below, it can be observed that tolerance values for all the variables are greater than 0.10, indicating that the regression model does not exhibit any problem with Multicollinearity. Also the VIF test was conducted to detect the presence of Multicollinearity among the independent variables. According to Pallant (2011), the rule of thumb states that VIF values above 10 suggest some high levels of Multicollinearity. The result shows that none of the values are above 10, suggesting that there is no problem of Multicollinearity in the multiple regression model. In other words, the assumption of Multicollinearity has not been violated, hence the use of the panel multiple regression model.

Table 4.3 Test of Multicollinearity between independent variables

Variables	Variance Inflation Factor (VIF)	Tolerance
Liquidity	1.643	0.67
capital Adequacy	1.214	0.546
Interest rate	1.512	0.325
Asset quality	1.123	0.448

Source: Author's Construction, 2016

Table 4.4 Pearson correlation coefficient result

		Liquidity	Capital adequacy	Interest rate	Asset quality
Liquidity	Pearson Correlation	1			
	Sig. (2-tailed)				
capital adequacy	Pearson Correlation	-0.730	1		
	Sig. (2-tailed)	-0.134			
Interest rate	Pearson Correlation	0.804	0.200	1	
	Sig. (2-tailed)	0.029	0.126		
asset quality	Pearson Correlation	0.462	-0.343	-0.991	1
	Sig. (2-tailed)	0.355	0.106	0.037	
	N	30	30	30	30

Source: Author's Construction, 2016

The Pearson's Correlation analysis result in Table 4.4 also gives credence to the previous result that the independent variables displayed multicollinearity. Colin Drury (2008) posit that for Multicollinearity to exist, the correlation coefficient (r) between the independent variables should be 0.70 or above ($r \geq 0.70$).

4.4 Correlation Statistics

Correlation statistics test to establish evidence to suggest that the variables exhibited linear relationship was performed. The findings illustrated sufficient proof that suggested that there was linear relationship between Liquidity, Capital adequacy and Interest rate with Asset quality.

Table 4.5 Correlation Statistics Result

	Liquidity	Capital adequacy	Interest rate	Asset quality
Liquidity	1			
capital adequacy	-0.133	1		
Interest rate	-0.029	0.126	1	
asset quality	0.356	0.106	0.037	1

Source: Author's Construction, 2016

4.5 Model Summary

Table 4.6 below illustrates the model summary of multiple regression models. The model summary results indicate that the four predictors (liquidity ratio, Capital adequacy, Interest rate and Asset quality) explained 37.93% variation of quantity of loan. This demonstrated that there is a probability of predicting quantity of loan by 37.9% ($R^2 = 0.379$) by using the four independent variables.

Table 4.6 Model Summary Table

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.6158	0.3793	0.2799	7.4703

Source: Author's Construction, 2016

4.6 ANOVA Model

Analysis of Variance (ANOVA) model was analyzed to establish if coefficient of determination R^2 was significant to enable reliable prediction of lending behavior using liquidity, capital adequacy, Interest rates and asset quality.

Table 4.7 ANOVA Model Table

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance (P)</i>
Regression	4	852.383022	213.0957555	3.81860014	0.014803
Residual	25	1395.116978	55.80467912		
Total	29	2247.5			

Source: Author's Construction, 2016

From the Analysis of Variance (ANOVA) model table 4.7, F ratio of 3.818 with p value 0.0148 <0.05 (level of significance) indicated that the coefficient of determination R^2 was significant. Thus, the model was fit to predict Lending behavior using liquidity, Capital adequacy, Interest rate and Asset quality.

4.7 Regression results

Table 4.8 below presents the regression analysis of the variables with Lending behaviour as the dependent variable and Liquidity, Capital adequacy, Interest rates and Asset quality being the independent variables. The constant term of the regression was 144.44 indicating that there was

strong activity in lending behavior independent of liquidity, Capital adequacy, Interest rate and Asset quality. The constant term was statistically significant, $t = 11.38$, $p < 0.05$.

The coefficient of Liquidity was 63.98 indicating that liquidity positively affected the lending behavior strongly. The coefficient was statistically significant with $t = 6.17$, $p < 0.05$. The coefficient of Capital adequacy was 44.28 indicating that it positively affected the lending behavior. The coefficient was statistically significant with $t = 1.17$, $p < 0.05$. Further, the coefficient of Interest rate was -0.217 indicating that Interest rates negatively affected the lending behavior of Banks. The coefficient was statistically significant with $t = 2.17$, $p < 0.05$. Finally, the coefficient of Asset quality was -0.12 an indication that Asset quality affected the lending behavior negatively. The coefficient was not statistically significant with $t = -7.6$, $p > 0.05$.

Table 4.8 Regression Results

	Coefficient	Std. Error	t-ratio	p-value
Constant	144.44	12.72	11.38	0.01
Liquidity	63.98	9.39	6.17	0.02
capital adequacy	44.28	32.23	1.17	0.04
Interest rate	-0.22	0.54	2.17	0.01
Asset quality	-0.12	18.89	-7.6	0.71
P-value(F)				0.03
R-squared	0.99			
Adjusted R-squared	0.28			

Source: Research Findings (2016)

The regression model was found to take the form:

$$\text{Lending Behavior (LAA)} = 144.44 + 63.98X_1 + 44.28X_2 - 0.22X_3 - 0.12X_4 + \mu$$

4.8 Interpretation of the Findings

This study found that liquidity and capital adequacy affected lending behavior of state owned banks positively. It further found that Interest rate and Asset quality negatively affect the lending behavior of state owned banks. This indicates that all the factors, Liquidity, Capital adequacy, Interest rates and Asset quality have an impact on the credit extension by state owned banks in Kenya. However, whereas liquidity, interest rate and capital adequacy demonstrated significant impact on lending behaviour, the study revealed that asset quality appeared to have insignificant impact on the lending behavior of state owned commercial banks.

CHAPTER FIVE: SUMMARY, CONCLUSION, LIMITATIONS AND POLICY IMPLICATIONS

5.1 Introduction

The chapter discusses the outcomes, conclusions based on the analyzed results and limitations of the study. Recommendations are made based on the conclusions derived from the findings. Lastly, the chapter concludes with suggestions for further research.

5.2 Summary of the Study

The main reason for this study was to establish the determinants of lending behavior in state owned commercial banks in Kenya. The target population for the study was all the 3 banks that are listed as state owned by the CBK in their website based on the shareholding structure. This research was motivated by need to find out the determinants of lending behavior in Kenya, an area that has not been adequately researched. It therefore sought to find out the relationship between the lending behavior and other factors which include asset quality, liquidity, interest rate and capital adequacy as depicted in the literature review.

The study was conducted by use of secondary data that was collected from the website of the three institutions that formed our sample. The results indicated that there is a positive linear relationship between the lending behavior and capital adequacy and liquidity ratio. It further found out that there is an inverse relationship between the lending behavior and interest rate. Asset quality was found to be having a slightly less significant role in determining the lending behavior of commercial banks.

5.3 Conclusion

The research findings revealed that interest rate, a monetary policy tool used by CBK in influencing the banks' lending volume has an inverse relationship with the total loans and advances granted by commercial banks. This means that low interest rates encourage borrowing hence high lending activities by commercial banks and vice versa. This was in concurrence with Usman (1999) proposition that the restriction of interest levied by Nigerian banks on loans and deposits by the regulator had a major influence on their credit creation behavior. Further, there was evidence of a very strong positive relationship between liquidity and capital adequacy and the quantity of loan advanced by commercial banks. This indicates that as liquidity and capital adequacy rises, the Commercial Bank tendency to extend credit increases. The research findings are therefore in agreement with Amano (2014) who researched on the Ethiopian commercial banks and concluded that the Ethiopian banks lending behaviour was significantly affected by the liquidity position and an adjustment in it would yield a high change in commercial banks lending volume. The study also revealed that asset quality does not have a significant impact on total loans extended by the commercial banks. This implies that banks would still extend credit facilities despite a weak asset quality, though by a relatively small margin as they refocus their energy in making good their asset quality.

5.4 Policy Recommendations

Based on the research findings of the study, it is suggested that commercial banks should be more innovative in their lending behavior since different sectors present different risk profile. The interest rate charged on loans should mirror/factor in the risk profile of the industry and the client unique features. It is also recommended that commercial banks should look for more innovative ways to source for cheap deposits which will in turn determine the interest rate

charged on loans. A well balanced cost of deposit and loans will enable the banks to maximize on their revenues.

It is also recommended that the regulator should work in tandem with the commercial banks before making major policies that might affect the banks' core purpose of credit extension to the economy. This is because of the uniqueness of the different clients that are targeted by different banks who have unique risk profiles. Moreover, the banks' capital adequacy also has a direct impact on the volume of credit that can be extended. This will therefore dictate the classification of the target clients by different commercial banks.

It is also recommended that commercial banks should pay more attention to their asset quality. Asset quality was measured in this research as a ratio of non-performing loans to the total loans. This is critical since the study did not reveal significant relationship between asset quality and lending behavior. If banks do not factor their asset quality in their lending activities, then they may end up with a significant rise of a toxic loan book.

5.5 Limitation of the Study

One of the major limitation of the study is the fact that the study only focused on the three state owned commercial banks. The study did not focus on the other commercial banks registered to operate in the Kenyan banking sector. The study findings might change if the data from the other forty banks were included in the research.

The other limitation of the study revolves around the geographical scope covered. The study focused purely on the Kenya's economy thereby not capturing the different economic metrics of

the other economies. Kenya's economy is slightly more developed than the other East Africa economies but is less developed than the first and second world economies. Therefore, a similar study done in an economy with different economic metrics from those exhibited in the Kenyan economy might present different findings.

The research focused on a ten year period, which is from 2006 to 2015. This means that the data used as representative sample is for that period and therefore taking a different set of period might also present a different proposition.

5.6 Further Research Recommendations

This study established the determinants of lending behavior in state owned commercial banks in Kenya. This study therefore recommends a further research to be carried out on determinants of banks lending behavior incorporating regulatory and macroeconomic factors as independent variables.

REFERENCES

- Abdkarim. M, Mohd Harif. A, Adziz. A (2007) “Monetary policy and sectoral bank lending in Malaysia” *Global Economic Review*, vol 35, n°3, p303-326.
- Abdulkarim. Z, Azman Saini. W, Abdul Karim. B (2011) “Bank lending channels of monetary policy” *Journal of Asian Pacific Business*, vol 12, n°3, p225-243.
- Abid. L, Ouertani. M.N, Ghorbel. S. Z (2014)” Macroeconomic and bank specific determinants of households non performing loans in Tunisia: A dynamic panel data” *Procedia Economics and Finance*, vol 13, p58-68.
- Aisen. A, Franken. M (2010) “Bank credit during the 2008 financial crisis: A cross country comparison” IMF working paper, February, p1-25, www.imf.org.
- Al-Tamimi, H. and Al-Mazrooei M., (2007), Banks’ Risk Management: A Comparison Study of UAE National and Foreign Banks, *The Journal of Risk Finance*, Vol. 8 No.4, pp. 394-409.
- Alkilani. Q. A, Kaddumi. T.A (2015) “Cyclicality of lending behavior by banking sector for the period (2000...2013): evidence from Jordan” *International Journal of Economics and Finance*, vol 7, n°4, p57-65.
- Altman, E. (2003) “Valuation, Loss Reserves and the Pricing of Corporate Bank Loans,” *Journal of Commercial Bank Lending*, August 1993, 8-25.
- Athanasoglou P.P., Brissimis S.N. and Delis M., (2005), Bank-Specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability, Bank of Greece Working Paper, No.

- Austin, Texas. BIS (2008). Bank for International Settlements (Bis), Annual Report. Basel, Switzerland.
- Bashir, Abdel hamid. M (2003) "Determinants of profitability in Islamic banks "Islamic Economic Studies, vol 11, n°1, p31-57
- Beck, T., A. Demirgüç-Kunt, et al. (2013). "Islamic Vs. Conventional Banking: Business Model, Efficiency and Stability." *Journal of Banking and Finance* 37: 433-447.
- Berger. A.N, Udell. G.F (2006) "A more complete conceptual framework for SME Finance "Journal of Banking and Finance, vol 30, issue 11, p2945-2966.
- Berrosipide. J, Edge. R (2010) "The effects of bank capital on lending: what do we know, and what does it mean? "Finance and Economic Discussion Series, discussion of research and statistics and monetary affairs.
- Bertay. A.C, Demirguc kunt. A, Huizinga. H (2015)" Bank ownership and credit over the business cycle: Is lending by state bank less procyclical? "Journal of Banking and Finance, vol 50, January, p326-339.
- Bernanke, B. S. (2008). 'Federal Reserve Policies in Financial Crises' Speech at Great Austin Chamber of Commerce.
- Boyd, J. H. and M. Gertler (1993). U.S. Commercial Banking: Trends, Cycles, and Policy. *Macroeconomics Annual*. O. J. Blanchard and S. Fischer. Cambridge MA, National Bureau of Economic Research.
- Carlson. M, Sahan.H, Warusawitharana M (2013) "Capital ratios and bank lending: A matched bank approach" *Journal of Financial Intermediation*, vol 2, p663-687.

- Chagwiza. W (2014) "Zimbabwean commercial bank liquidity and its determinants"
International Journal of Empirical Finance, vol 2, n°2, 2014, p52-64
- Chen. T.H, Chon. H.H, Chang. Y.H (2015) "The effect of excess liquidity on bank lending: evidence from China" International Review of Economics and Finance, vol 36, March, p54-68
- Chernykh. L, Theodossiou. A (2011) "Determinants of bank long term lending behavior: Evidence from Russia" Multinational Finance Journal, vol 15, n°1, p193-216.
- Chodechai. S (2004) "Determinants of bank lending: an empirical examination for the years (1992...1996)" Thailand
- Cole. R.A, Goldberg .L.G, White. L.J (2004) "Cookie cutter versus character: the micro structure of small business lending by large and small banks" Journal of Financial and Quantitative Analysis, vol 39, n°2, p 227-251.
- Colin Drury (2008), Management and Cost Accounting, Pat Bond Publisher, 7th edition, p 611, available at <https://books.google.co.ke/books?id=8SaARYOfIPIC&pg>.
- Cooper, D.R and Schindler, P.S. (2003) Business Research Methods (8th edn) McGraw-Hill: New York
- Degryse H. and P. Van Cayseele (2000) "Relationship Lending within a Bank-Based System: Evidence from European Small Business Data", Journal of Financial Intermediation 9, pp. 90-109
- Diamond, D. (1991), "Debt maturity structure and liquidity risk", Quarterly Journal of Economics, 106(3): pp.709-737.

- Diamond, D. W. and Dybvig, P. H. (2008), "Banking Theory, Deposit Insurance, and Bank Regulation", *The Journal of Business*, Vol. 59, No. 1 (Jan., 1986), pp. 55-68
- Diamond, D. W. and Rajan, R. G. (2006) "Money in a Theory of Banking," *American Economic Review*, American Economic Association, vol. 96(1)
- Diamond, D., Rajan, R. (1998) "Liquidity risk, liquidity creation and financial fragility: A theory of banking" University of Chicago, working paper
- Dickey, D.A. and Fuller, W.A. (1979) "Distribution of the Estimators for Autoregressive Time Series with a Unit Root", *Journal of American Statistical Association* 74-366: (1979) pp. 427-431
- Djogap, F, A. Ngomsi (2012) "Determinants of bank long term lending behavior in the central African Economic and Monetary Community (CEMAC)" *Review of Economic and Finance*, p107-114.
- Ehrman, M, Gambacorta, L, Martinez, P.J, Sevestre P, Worms A (2003) "Financial systems and the role of banks in monetary policy transmission in the Euro Area."
- Engle, R.F. and Granger, C.W.J. (1987) "Cointegration and Error Correction: Representation, Estimation and Testing", *Econometrica* 55(2): pp. 251-276
- Freixas, R, Rochet, JC (2008) "Microeconomic of banking" Second edition, p2-13, <http://mitpress.mit.edu>.
- Gambacorta, L, Mistrulli, E (2004) "Bank capital and lending behavior: empirical evidence for Italy" *Journal of Financial Intermediation*, 13, (4), p436-457

- Gonzalez-Paramo, J.M (2010) The Challenges of Credit Risk Management-lessons learnt from the crisis. Speech delivered during Risk Europe 2010 in Frankfurt am Main, on 26th May 2010.
- Hanh. P.T.H (2014) “Determinants of bank lending” LEMNA, Institutue of Economics and Management University of Nante, <https://hal.inria.fr>.
- Hanh. P.T.H (2014) “Determinants of bank lending” LEMNA, Institutue of Economics and Management University of Nante, <https://hal.inria.fr>
- Howcroft. B, Kara. A, Marquez Ibanez. D (2014) “Determinants of syndicated lending in European banks and the impact of the financial crisis” Journal of International Financial Markets, Institutions and Money, vol 32, September, p473-490.
- Imran. K, M. Nishat (2012) “Determinants of bank credit in Paksitan: a supply side approach” Proceedings of 2ned international Conference on business management, p2-32.
- Irina. B (2003) “Bank liquidity and exchange rate regimes: new European perspectives” 3rd international Scientific Conference, Bulgaria.
- King. R, Stephen (1986) “Monetary transmission through bank loans or liabilities” Journal of Money, Credit and Banking, vol 18, n°3, p290-330
- Kishan. R.P, Opeila. T.P (2000) “Bank size, bank capital and the bank lending channel” Journal of Money, Credit and Banking, vol 32, n°1, p121-141
- Koford, K., & Tschoegl, A. (1999). Problems of bank lending in Bulgaria: Information asymmetry and institutional learning. MOCT-MOST: Economic Policy in Transitional Economies, 9(2), 123!152.

- Kosak. M, Li. S, Loncarski. I, Marinc. M (2015) "Quality of bank capital and bank lending behavior during the global financial crisis" *International Review of Financial Analysis*, vol37, January, p168-183.
- Kuo, S. H., & Enders, W. (2004). The Term Structure of Japanese Interest Rate: The equilibrium spread with asymmetric dynamics. *The Japanese and International Economics*, 18, 84-98.
- Labonne. C, Lame. G (2014) "Credit growth and capital requirements: Binding or not?" *Juillet, institute national de statistiques et des études économiques*, p2-27.
- Ladime. J, Kumankana. E.S, Osei. K.A (2013) "Determinants of bank lending behavior in Ghana" *Journal of Economics and Sustainable Development*, vol 4, n°17, p42-47
- Mugenda, M. O. and Mugenda , A. (2005), *Research Methods: Qualitative and Quantitative Approaches*, Acts Press, Nairobi.
- Ngechu, M. (2004), *Understanding the research process and methods. An introduction to research methods*. Acts Press, Nairobi
- Olokoyo. F (2011) "Determinants of commercial bank's lending behavior in Nigeria" *International Journal of Financial Research*, vol 2, n°2, p61-72.
- Olusanya. S, Oyebo. A, Ohadebure. E (2012) "Determinants of lending behavior of commercial banks: evidence form Nigeria A cointegration analysis (1975...2010)" *Journal of Humanities and Social Sciences*, vol 5, n°5, p71-80
- Santomero, M.A. (2007), "Commercial bank risk management: an analysis of the process", *The Wharton School, University of Pennsylvania, Philadelphia, PA, Working Paper No. 95-11-C, .*

Scholtens, B., van Wensveen, D. (2008), "The theory of financial intermediation: an essay on what it does (not) explain", SUERF, Vienna, SUERF Studies No. 2003/1

Tomak. S (2013) "Determinants of commercial bank lending behavior: Evidence from Turkey"
Asian journal of Empirical research

<http://www.iadb.org/res/publications/pubfiles/pubS-200.pdf>

APPENDICES

Appendix i: Publicly Owned Commercial Banks in Kenya

No.	Name of Bank	Year of Incorporation
1	National Bank of Kenya Limited	1968
2	Consolidated Bank of Kenya	1989
3	Development Bank of Kenya Limited	1963

Source: Central Bank of Kenya website.

Appendix ii: Raw data on state owned commercial banks in Kenya (Kes'000)

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
NBK	Total Loans	42,503,980	10,763,358	10,386,024	14,050,805	21,530,257	28,926,419	29,930,474	41,438,124	65,641,491	67,803,990
	Total Assets	36,122,843	41,414,272	42,695,700	51,404,408	60,026,694	68,664,516	67,178,607	92,555,717	122,864,886	125,295,035
	Equity Capital	3,847,839	4,967,235	6,207,845	7,907,692	9,929,611	10,456,474	10,467,176	11,888,399	12,113,912	10,913,622
	Loan Loss Provisions	16,013,456	2,919,443	1,435,879	894,350	685,621	858,201	1,583,806	1,871,446	2,396,753	3,619,146
Consolidated	Total Loans	1,709,721	1,990,977	3,091,639	4,212,286	6,410,264	9,579,611	10,438,242	11,599,482	10,313,724	9,731,465
	Total Assets	2,915,578	3,437,096	4,656,792	6,898,919	10,478,682	15,318,148	18,000,858	16,778,631	15,077,051	14,135,528
	Equity Capital	706,095	722,235	845,692	926,820	1,477,064	1,434,806	1,574,163	1,241,702	1,567,820	1,615,215
	Loan Loss Provisions	420,498	348,763	340,902	343,814	362,988	382,587	361,174	743,990	1,101,143	510,209
DBK	Total Loans	2,964,801	3,686,133	4,407,466	5,128,799	5,850,132	6,167,809	7,311,440	8,586,402	9,149,614	8,855,386
	Total Assets	4,806,849	6,246,071	7,685,293	9,124,515	10,563,737	11,517,988	13,411,458	15,580,630	16,954,227	16,942,714
	Equity Capital	1,232,867	1,297,754	1,354,799	1,426,104	1,488,790	1,567,147	1,640,926	1,822,274	2,763,601	2,843,621
	Loan Loss Provisions	166,002	182,420	200,461	220,287	242,074	266,015	379,820	477,935	621,982	811,448

Appendix iii: Calculated Data

Year		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
NBK	Liquidity	1.177	0.260	0.243	0.273	0.359	0.421	0.446	0.448	0.534	0.541
	capital adequacy	0.107	0.120	0.145	0.154	0.165	0.152	0.156	0.128	0.099	0.087
	Interest rate	10.188	8.500	8.800	16.500	9.594	6.542	7.875	8.900	8.500	9.875
	asset quality	0.377	0.271	0.138	0.064	0.032	0.030	0.053	0.045	0.037	0.053
Consolidated	Liquidity	0.586	0.579	0.664	0.611	0.612	0.625	0.580	0.691	0.684	0.688
	capital adequacy	0.242	0.210	0.182	0.134	0.141	0.094	0.087	0.074	0.104	0.114
	Interest rate	10.188	8.500	8.800	16.500	9.594	6.542	7.875	8.900	8.500	9.875
	asset quality	0.246	0.175	0.110	0.082	0.057	0.040	0.035	0.064	0.107	0.052
DBK	Liquidity	0.617	0.590	0.573	0.562	0.554	0.535	0.545	0.551	0.540	0.523
	capital adequacy	0.256	0.208	0.176	0.156	0.141	0.136	0.122	0.117	0.163	0.168
	Interest rate	10.188	8.500	8.800	16.500	9.594	6.542	7.875	8.900	8.500	9.875
	asset quality	0.056	0.049	0.045	0.043	0.041	0.043	0.052	0.056	0.068	0.092