

**RELATIONSHIP BETWEEN MORTGAGE FINANCING AND PROFITABILITY
OF COMMERCIAL BANKS IN KENYA**

BY

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D61/60067/2010

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF
BUSINESS ADMINISTRATION,
UNIVERSITY OF NAIROBI.**

OCTOBER, 2013

DECLARATION

I, the undersigned, declare that this project is my original work and that it has not been presented in any other university or institution for academic credit.

Signature

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

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ACKNOWLEDGEMENT

The MBA programme has been a long and challenging journey and the successful completion has been as a result of support received from many people. My sincere gratitude to the almighty God for seeing me through my studies and for all the blessings in my life.

My special thanks to my supervisor, Martin Odipo for his continued advice, guidance, assistance, availability, useful criticism and suggestions during the entire research period.

I also thank the teaching, administrative and support staff of the University of Nairobi for their support through the entire programme period. To my husband, parents, relatives and friends, my sincere gratitude for your support. Many thanks to my classmates for supporting me throughout the course especially in group work and revision.

Last but not least I wish to thank the staff of central Bank of Kenya Library for their assistance in data collection.

May the Almighty God bless you all abundantly!

DEDICATION

This paper is dedicated to my parents Mr Stephen Mwangi and Mrs Jeniffer Mwangi, my husband Wycliffe and Son Brayden who have been a source of inspiration and support both financially and morally during the course of my studies.

ABSTRACT

Lending is one of the main activities of banks in Kenya and other parts of the world. Mortgage loans have become an important aspect of loan portfolio among commercial banks in Kenya, earning commercial banks' profits like other type of loans. Profitability, it is always associated with performance and productivity. Mortgage financing over the years has been a preserve for mortgage financing companies but with time, commercial banks have started engaging in mortgage financing. The mortgage market is the third most developed in Sub-Saharan Africa with mortgage assets equivalent to 2.5 per cent of Kenya's GDP. Prior studies have shown that mortgage financing is positively related to the performance of banks. Mortgage credit is positively related profitability because it creates a long term source of revenue for the bank offering mortgage credit, (Sharpele, 2000). This study was motivated to establish the relationship between mortgage financing and profitability of commercial banks in Kenya. The causal study design was employed in this research. The population for this study was commercial banks in Kenya. The sample of this study was commercial banks that offered mortgage financing between years 2008 to 2012. 30 commercial banks listed on offered mortgage financing during our study period and thus they were the sample for this study. The study collected secondary data for the for five years from 2008 to 2012, on the bank profitability and mortgage lending. Data analysis was done using SPSS Version 20 whereby multiple regression models was employed. The study revealed that mortgage financing has a positive effect on the profitability of Commercial banks in Kenya . The study also established that bank deposits, liquidity, capital and reserves, bank size have a positive effect on profitability of commercial banks in Kenya.

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ABBREVIATIONS

CBK	Central Bank of Kenya
EQTA	Total Equity / Total Assets
GDP	Gross Domestic Product
LTV	Loan-To-Value
MMLM	Modern Mortgage Lending Model
ROA	Return on Assets
ROC	Return on Capital
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SMM	Secondary Mortgage Market

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Lending is one of the main activities of banks in Kenya and other parts of the world. This is evidenced by the volume of loans that constitute banks assets and the annual substantial increase in the amount of credit granted to borrowers in the private and public sectors of the economy. According to US Comptroller (1998), lending is the principal business for most commercial banks. Loan portfolio is therefore typically the largest asset and the largest source of revenue for banks. In view of the significant contribution of loans to the financial health of banks through interest income earnings, these assets are considered the most valuable assets of banks. Loan portfolio is typically the largest asset and the predominant source of income for banks. In spite of the huge income generated from their loan portfolio, available literature shows that huge portions of banks loans usually go bad and therefore affect the financial performance of these institutions (Comptroller, 1998). Mortgage loans have become an important aspect of loan portfolio among commercial banks in Kenya, earning commercial banks' profits like other type of loans. Profitability, it is always associated with performance and productivity. This study is motivated to establish the relationship between mortgage financing and profitability of commercial banks in Kenya.

1.1.1 Mortgage Financing

Mortgage financing over the years has been a preserve for mortgage financing companies but with time, commercial banks have started engaging in mortgage financing. An efficient housing finance system has significant importance both in meeting the housing needs of

individuals and in reinforcing the development of the construction, finance and other related sectors of an economy. International experience suggests that, the widespread availability of residential mortgages has a favorable impact on poverty alleviation, quality of housing, infrastructure, and urbanization (Erbas and Walley, 2005). Today, developed countries have advanced housing finance systems in which funds flow from people with fund surpluses to the ones that are in need of them by the aid of mortgage markets. On the other hand, despite its recognized economic and social importance, housing finance often remains underdeveloped in developing countries mainly due to lack of stable inflation and employment (Ho Hahm, 2004).

Mortgage financing normally centers around two specific goals (Dolde, 2006). First, the financing seeks to create revenue for the lender and secondly the extension of mortgages allows qualified individuals and business entities to secure properties that can be repaid in terms that are within the ability of the recipient of the loan to pay off in a timely manner (Okwir, 2002). Mortgage loans are secured by the real property, and provide a schedule of payments of interest and repayment of the principal to a bank. Most mortgage contracts arrange for loans to be fully amortized with adjustable mortgage interest rates and either payment or maturity is fixed for the term of the loan (Mehdian, 2001).

Mortgage loans are generally structured as long-term loans, the periodic payments for which are similar to an annuity and calculated according to the time value of money formulae. The most basic arrangement would require a fixed monthly payment over a period of ten to thirty years, depending on local conditions. Over this period the principal component of the loan would be slowly paid down through amortization (Tse, 2002). Changes in mortgage design

do not always lead to fundamentally different mortgage instruments. The emergence of a fixed rather than a variable rate mortgage would be an example of a new mortgage instrument (Dolde, 2006). The increase of mortgage financing in Kenya may have been influenced by factors changing mortgage climate, sustained economic growth, cross-selling potential, profitability and market penetration and liberalizations of market. Kenya's mortgage market has more than tripled in the past five years. The mortgage market has grown from Kshs.19 billion in 2006 to just over Kshs.61 billion by May-2010 year. This translates to an annual average growth of 34%, indicating an exponential increase in mortgage loans (Government of Kenya ,2007).

1.1.2 Profitability of Commercial Banks

Profitability of the banks is measured in the form of ratios which are normally reported by commercial banks in their annual reports. Devinaga (2010) claims that the use profitability ratios are not influence by changes in price levels. And it is said to be the most appropriate way of measuring profitability as one make use of time series analysis. This is because the real value of profits cannot be affected by the varying inflation rates. According to Devinaga Rasiah (2010) for one to realize how well a bank is performing it is much more useful to consider return on assets (ROA) and return on equity (ROE); Bourke (1989) and Molyneux and Thornton (1992).

Return on assets (ROA) is the ratio of Net Income after Taxes divided by Total Assets. The ROA signifies managerial efficiency in other words it depicts how effective and efficient the management of banks has been as they seek to transform assets into earnings. And the higher ratio indicates the higher performance of the banks. It is a useful tool for comparing

profitability of one bank with other or the whole commercial banking system. Moreover, the ROE is said to measure the rate of return on the bank's shareholders equity and it is calculated by dividing banks net income after taxes by total equity capital which includes common and preferred stock, surplus, undivided profits, and capital reserves; Bourke (1989), and Molyneux and Thornton (1992). This measure of profitability gives an indication of what the banks earns on the shareholders' investment; Devinaga Rasiah (2010). According to Anthony and Ameyaw (2010) many researchers have presented ROA as an appropriate measure of bank profitability. Among them are Rivard and Thomas (1997) who argued that bank profitability is best measured by ROA in the sense that, ROA cannot be distorted by high equity multiplier. However, Hassan and Bashir (2003) also claims that as ROA tend to be lower for financial intermediaries, most banks heavily utilize financial leverage to increase their ROE to competitive levels.

1.1.3 Mortgage Financing and Profitability of Commercial Banks

The mortgage market is the third most developed in Sub-Saharan Africa with mortgage assets equivalent to 2.5 per cent of Kenya's GDP. This has seen growth in profitability of the commercial banks that have been offering mortgage credit to Kenyans Advancing mortgage credit to applicants imply that the bank money is tied up somewhere whose payment is in the future. Prior studies have shown that mortgage financing is positively related to the performance of banks. Mortgage credit is positively related profitability because it creates a long term source of revenue for the bank offering mortgage credit, (Sharpele, 2000). Mortgage financing also brings other revenue such as facility/negotiation fees and penalties for defaulting or paying before the life of facility comes to end. There is however, need to have an efficient mortgage credit management to minimize the costs involved in loan

allocation and the on other hand maximize the returns from such undertakings and thus making the bank more profitable.

Banks adopt mortgage financing for various reasons such as high interest rates, market penetration and cross selling which are strategies to increase profit. The relationship between mortgage financing and profitability is therefore expected to be positive.

1.1.4 Commercial Banks in Kenya

The Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act, and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalised in 1995 and exchange controls lifted. The Central Bank of Kenya, which falls under the Ministry of Finance, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. Central Bank of Kenya publishes information on Kenya's commercial banks and non-banking financial institutions, interest rates and other publications and guidelines (CBK, 2011)

Banks represent a significant and influential sector of business worldwide that plays a crucial role in the global economy. Commercial banks are financial intermediaries that serve as financial resource mobilization points in the global economy. They channel funds needed by business and household sectors from surplus spending to deficit spending units in the economy. A well-developed efficient banking sector is an important prerequisite for saving and investment decisions needed for rapid economic growth. A well-functioning banking sector provides a system by which a country's most profitable and efficient projects are systematically and continuously funded. The role of banks in an economy is paramount

because they execute monetary policy and provide means for facilitating payment for goods and services in the domestic and international trade (Government of Kenya, 2007). Commercial banks are custodians of depositor's funds and operate by receiving cash deposits from the general public and loaning them out to the needy at statutorily allowed interest rates. Loans are based on the credit policy of the bank that is tightly coupled with the central bank interest rate policy. These in effect determine the level of financial risk in a particular bank (CBK, 2010). Mortgage loans in Kenya comprises of 90% of the outstanding loan assets portfolio.

1.2 Research Problem

The rapid development of a variety of mortgage-backed securities has led to a radical transformation in mortgage sector in Kenya in recent years. The changing home mortgage market and unique financing requirements brought about by widespread homeownership have caused a continuing evolution in mortgage lending practice. Commercial banks are financial intermediaries that serve as financial resource mobilization points in the global economy.

In Kenya Commercial banks have continued finance mortgages with a potential size of the mortgage market which is currently around Ksh.800 billion (CBK, 2011). This is far below expectation bearing in mind the large unexploited urban and rural market due to low income level earnings by individuals in the country. Banks have continued to finance mortgage undertaken by individual and corporate firms aiming at improving their profitability.

Prior studies that have established the relationship between mortgage financing and profitability of commercial banks, they include; Tsatsaronis and Zhu (2004), who established

that there is a positive relationship between mortgage credit and banks performance. Gerlach and Peng (2005) established a long-run relationship linking house prices, bank credit and GDP in Hong Kong. In their study Glenn and Wayne (2007), revealed that there was no compelling evidence of lower profitability at commercial banks that specialize in home purchase lending in lower income neighborhoods or to lower-income borrowers. Fang (2004), established that both real estate financing and mortgage had positive effects on the banks on the banks profitability, (Fang, 2004). All these studies have been conducted in the developed world.

Locally empirical studies on mortgage financing include; Ndungu (2010) who concluded that the Kenya's mortgage market is growing and the industry is dominated by the commercial banks indicating barriers to entry or high risk for medium and smaller banks, Ndirangu (2004) did a study on effect of adopting different types of mortgages on financial performance of mortgage institutions in Kenya. Murugu (2003) carried out a study on perceived quality of service in the mortgage sector. Nkirote (2004) did a study on environmental challenges and the strategic responses in the mortgage industry in Kenya.

This study seeks to establish whether there is a relationship between mortgage financing and profitability of commercial banks in Kenya. To the researcher best knowledge no known local study has been conducted to establish the relationship between mortgage financing and profitability of commercial banks in Kenya. The study sought to answer the following research question; what has been the performance in terms of profitability for the banks which have been offering mortgage financing since 2008?

1.3 Objective of the Study

The study sought to determine the relationship between mortgage financing and profitability of commercial banks in Kenya.

1.4 Value of the Study

This study will be of great benefit to banking institutions in Kenya since it will outline risk factors influencing the growth of mortgage loan lending in the banking sector. The development of the bank depends on several factors of which mortgage financing plays a major role in the current banking sector. This study will ascertain the benefits of mortgage financing to banking institutions in Kenya. This will help in developing more innovative strategies of financing mortgages to enhance bank's financial performance.

The study will be significant to the government in developing policy pertaining to mortgage and asset financing. Due to knowledge gained by most applicants through the study most applicants will comfortably embrace mortgage financing and this will lead to high returns to most banks and high tax return to the government.

It will also be significant to the researchers and scholars as it will form a background reference for future studies and contribute to the existing knowledge of literature.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter brings up relevant literature required to find answers and connect to our research objective. First, a review of theories that guide this study will be presented to give the research a firm theoretical base. Then, empirical studies done on this research topic will be looked at which will make it easier to understand the research area.

2.2 Theoretical Review

The study on the relationship between mortgage financing and profitability of commercial banks in Kenya will be guided by the following theories, title theory and lien theory of mortgage , which states how ownership of the property is transferred . Modern mortgage lending model highlights the new development in mortgage financing. Mortgage value model states how mortgage firm makes strategic business decision on mortgage financing. Mortgage credit intermediation models states how mortgage markets are dependent on existence of a network of intermediation.

2.2.1 Title Theory and Lien Theory of Mortgage

In the title theory, the property-law doctrine states that a mortgage transfers title to a property to the mortgagee, who holds it until the mortgage has been paid off, at which time title passes to the mortgagor. In title theory, the banks retain the title since the mortgage is said to hold a title interest, she has the right to possession under this theory. Some banks apply a lien theory. This theory only gives the mortgagee a lien interest in the property. In a title theory,

the mortgage is treated as having transferred title to the mortgagee, subject to the mortgagee's duty to recover if payment is made. The title is said to remain in the mortgagee until the mortgage has been satisfied and foreclosed. Although the mortgagee has the right of possession to the property, there is generally an express agreement giving the right of possession to the mortgagor. The mortgagee is said to hold the title for security purposes only. The mortgagor is given the right of possession (Buckley and Kalarickal, 2004).

Lien theory provides that a mortgagee of property holds only a lien, not title, to the property until such time as the mortgage is fully paid, at which time the lien is removed. In a lien theory bank, the mortgagor retains legal and equitable title to the property, but conveys an interest that the mortgagee can only foreclose upon to satisfy the obligation of the mortgagor. This is equivalent to a future interest in the property which allows the mortgagee to use the process of foreclosure. The interest is a security interest or mortgage, which forms a lien on the property. In this theory the right to possession arises upon a default. The mortgagor has a right to sue the mortgagee for any interference with his right of possession (Buckley and Kalarickal, 2005). For practical applications there is usually very little difference between a lien theory and a title theory. The principle difference arising in the title theory bank is that the mortgagee is given the right to possession before the foreclosure is complete

2.2.2 Modern Mortgage Lending Model

For housing finance to be successful, continuous flow of funds must be guaranteed. Secondary Mortgage Market (SMMs) are a means to an end. The end is to increase the flow of funds housing. Therefore, a secondary market provides the means to accomplish this end by bringing together the originators of mortgage loans with the ultimate investors. It does this by developing new instruments and institutions that can lower the risks of mortgage lending for

originators and provided them with new funding outlets. The mechanism of capital mobilization through mortgage securitization as found in advanced economies like the US, Germany, France, Italy, and others will serve as a potent driver of real estate growth and housing finance in Nigeria. Similar examples are obtainable in Asia, where the National Housing Fund thrives on, not only the deposit subscriptions, but also on housing bonds issued by the Housing Bank to finance housing development programmes (The Punch Newspaper, 2008).

According to Lea(1999), a successful secondary market is based on effective management of the basic functions and risks involved in mortgage lending regardless of the institutional entities involved or what separation of functions existing in the market. Lea is also of the view, that the degree of competition in the primary market may have a major bearing on the readiness of lenders to participate in a secondary market. During the Inter-American Development Bank conference of 1999, Lea presented a paper titled “The Development of Mortgage Securitization in Latin America and the Caribbean Conference” and discussed the basic conditions that will make SMM thrive in any economy. The modern Unbundled Mortgage Delivery System functions as SMM. The functions of origination, servicing, risk management and funding are unbundled and managed by different specialized entities.

In the Modern Mortgage Lending Model (MMLM), there are a wide variety of investors ranging from depositories to mutual funds (Lea, 1999). The risk management is often specialized as well provided by third parties like mortgage or bond insurance companies. Origination specialist must be more cognizant of pipeline risk which is the risk between the time a lender makes a binding commitment to borrower and the time the loan is either sold or placed in portfolio because the loans are sold after origination. The quality of mortgages

produced by the primary market becomes much more important in a SMM. The SMM separates the act of making mortgage loans from the act of holding mortgage loans. The mortgage holding function is the strategic focus for dealing with the risks of mortgage lending (Renaud and Jaffee, 1996). According to them, the basic principle of SMM is to tap capital market investor as the long-term source for the mortgage market, thus mitigating risks of interest rate and credit risk.

2.2.3 Mortgage Value Model

In the Mortgage Value Model the bank's primary objective is the maximization of expected profits under the constraints of liquidity, soundness, standing and lawfulness. To this end the implementation and use of an integrated system of risk-return management focused on adding and creating shareholder value is essential, (Glenn and Wayne, 2007). Consequently a process of integrated risk and return management has the following objectives: Management of a portfolio from an overall integrated view; optimization of risk/ reward relations of the bank portfolio; identification of risk/ reward efficient portfolio strategies; setting of risk/ reward efficient management targets; implementation in ongoing business; consistent and efficient risk/ reward management of business lines; and accurate determination of value versus loan amount and pricing in accordance (Stephens, 2005).

The Mortgage Value Model , the banks projects the economic value of new retail mortgage business and enables the business to make strategic and tactical decisions based on future profitability (Doling, 1997). The model will allow mortgage loans to: Drive the value from new business lending by understanding expected economic profit returns at a strategic cohort level, for example with specific customer types, products, distribution channels, loan-to-

value (LTV) buckets and regional segments; design new or adjust existing product propositions to enhance profitability and support banks growth; design lending strategies by assessing future value by risk level, e.g. using scorecard accept/ decline cut-offs to mitigate loss making segments of new business; price for risk therefore becomes market competitive whilst ensuring the business is value adding; and provide a platform that will enable controlled challenge to seek new business opportunities to increase sales (Stephens, 2005).

2.2.4 Mortgage Credit Intermediation Models

In the Mortgage Credit intermediation model, the mortgage markets are dependent on the existence of a network of intermediation (Stephens, 2005, Chiquier and Lea, 2009). This network underpins the funding and origination of the credit, the education of the market, the division of obligations and responsibilities, and the provision of support if there is default. In most developed countries, mortgage intermediation was initially performed by a specially regulated and privileged class of institution. In the United Kingdom, it was the building society that was so privileged. In the United States, it was primarily the Savings and Loans Associations (S&Ls). Notably these institutions started as mutual societies or community-based organizations, since this was an activity driven by concern for housing for the community and not by maximizing profit for investors. These societies, organizations or institutions were given special tax and regulatory concessions on condition that they restricted themselves to mortgage lending. The result was that they developed a network of mortgage intermediation, expertise and culture appropriate to support access to housing, which was almost their exclusive preserve. The key challenge however was to make the business efficient to be sustainable in the long term.

In countries with rapid economic growth and expanding urban populations like Kenya, mortgage intermediation is the most rapidly growing business, making a major contribution to financial systems and economic development. In addition, in some countries, such as the United States and United Kingdom, financial innovations undertaken with respect to mortgage lending have spread quickly to other parts of the financial system, resulting in increasing financial depth (Stephens, 2005).

Some of the existing network of intermediaries used in Mortgage Credit intermediation model includes; State vs. a market-based mortgage system, Building societies/state banks savings and loans institutions, Commercial Banks, Secondary mortgage markets and International finance institutions. Given the recent development of the mortgage market in Kenya ,such institutions can be used in developing origination standards and network of mortgage intermediation for ensuring mortgages is accessible to low- and moderate income households.

2.3 Profitability

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

investor may wish to look deeper into financial statements and seek out margin growth rates or any declining debt (Mido, 2006).

Quantitative measures of firm performance include profitability measures such as gross margin, net margin for example return on sales, return on equity, economic value added, return on equity less cost of equity, return on capital employed; cash flow measures such as free cash flow over sales; and growth measures such as 1-, 3-, and 5-year historical revenue growth. Ideally, forward-looking measures such as expected profitability, cash flow and growth should be used to measure a firm's performance because the current operating conditions (such as number of hierarchical levels or organization form) will influence future performance (Kumar, 2003).

Most studies divide the determinants of commercial banks performance into two categories, namely internal and external factors. Internal determinants of profitability, which are within the control of bank management, can be broadly classified into two categories, i.e. financial statement variables and nonfinancial statement variables. While financial statement variables relate to the decisions which directly involve items in the balance sheet and income statement; non-financial statement variables involve factors that have no direct relation to the financial statements. The examples of non-financial variables within this category are number of branches, status of the branch (limited or full-service branch, unit branch or multiple branches), location and size of the bank. External factors are those factors that are considered to be beyond the control of the management of a bank. Among the widely discussed external variables are competition, regulation, concentration, adoption of Mobile phone banking and other innovative products, market share, ownership, scarcity of capital, money supply, inflation and size (Sudin, 2004).

Management researchers prefer accounting variables as performance measures such as return on equity (ROE), return on investment (ROI), and return on assets (ROA), along with their variability as measures of risk. Earlier studies typically measure accounting rates of return. These include: Return on Investment (ROI), return on capital (ROC), return on assets (ROA) and return on sales (ROS). The idea behind these measures is perhaps to evaluate managerial performance-how well is a firm's management using the assets to generate accounting returns per unit of investment, assets or sales. The problems with these measures are well known. Accounting returns include depreciation and inventory costs and affect the accurate reporting of earnings. Asset values are also recorded historically. Return on equity (ROE) is a frequently used variable in judging top management performance, and for making executive compensation decisions. ROE is defined as net income (income available to common stockholders) divided by stockholders equity. On the other hand, ROA is the most frequently used performance measure in previous studies. It is defined as net income (income available to common stockholders), divided by the book value of total assets (Donaldson & Preston, 1995).

2.4 Determinants of Bank Profitability

According to Husni (2011) the internal determinants of banks profitability are normally consisting of factors that are within the control of commercial banks. They are the factors which affect the revenue and the cost of the banks. Some studies classified them into two categories namely the financial statement variables and non-financial variables. External factors are said to be the factors that are beyond the control of the management of commercial banks. The external determinants of commercial banks profitability are indirect factors, which are uncontrollable, but have an enormous impact on bank's profitability.

According to Karkrah and Ameyaw (2010) macroeconomic variables has been a major components of the external profit determinants in most studies. The most external factors that have been presented in most studies include competition/market share/firm size, inflation, GDP growth, and interest rate; (Sudin, 2004).

2.4.1 Deposits

Banks are said to be heavily dependent on the funds mainly provided by the public as deposits to finance the loans being offered to the customers. There is a general notion that deposits are the cheapest sources of funds for banks and so to this extent deposits have positive impact on banks profitability if the demand for bank loans is very high. That is, the more deposits commercial bank is able accumulate the greater is its capacity to offer more loans and make profits; Devinaga Rasiah (2010). However, one should be aware that if banks loans are not high in demand, having more deposits could decrease earnings and may result in low profit for the banks. This is because deposits like Fixed, Time or Term deposits attract high interest from the banks to the depositors, Devinaga (2010). Investigation done by Husni (2011) on the determinants commercial banks performance in Jordan disclosed that there is significant positive relationship between ROA and Total liability to total Assets. To capture deposits in the model Vong et al (2009) presented the effect of deposits (DETA) on profitability as deposits to total assets ratio.

2.4.2 Capital Ratio

Devinaga Rasiah (2010) and Vong et al (2009) included capital ratio (EQTA or CTRA) as a variable in their study of determinants of banks profitability and performance because capital also serve as a source of funds along with deposits and borrowings. They argue that capital

structure which includes shareholders' funds, reserves and retained profit affect the profitability of commercial banks because of its effect on leverage and risk. They documented that, commercial banks assets could be also financed by either capital or debt.

Sufian. et al (2008) argued that banks in developing countries needs a strong capital structure, because it provides them strength to withstand financial crises and offers depositors a better safety net in times of bankruptcy and distress macroeconomic conditions. And according to Molyneux (1992) banks with high level of equity can reduce their cost of capital and that could impact positively on profitability. Empirical evidence presented by Karkrah and Ameyaw (2010) on profitability determinants of commercial banks in Ghana revealed that the equity ratio which is the measure of the capital strength of the banks posted a positive relation with the banks ROA. They documented that their finding is in line with the findings of Suffian et al (2008) which reveals positive relation between Philippines banks level of capitalization and profitability. The result was also consistent with the finding of Berger (1995), Demirguc-Kunt and Huizinga (2009), Pasiouras and Kosmidou (2007). Capital ratio was presented in Devinaga (2010) study as (CTRA) Capital and reserve as a percentage of total assets.

2.4.3 Liquidity ratio

According to Devinaga Rasiah (2010) commercial banks are required by regulators to hold a certain level of liquidity assets. And the reason behind this regulation is to make sure that the commercial banks always possess enough liquidity in order to be able to deal with bank runs. He further argue that a bank assume the status of highly liquid only if it has been able to accumulate enough cash and have in possession other liquid assets as well as having the

ability to raise funds quickly from other sources to be able to meet its payment obligation and other financial commitments on time.

Bourke (1989) found that concentration and other determinants of bank profitability in Europe, North America and Australia indicated a positive relationship between banks level of liquidity and profitability. The IMF Country Report 2011 has indicated that Ghanaian banks are more liquid and liquidity with regards to the banks' assets has increased tremendously after the financial crisis. The report estimated that Liquid asset to total assets in 2010 recorded 25.3% and Liquid asset to short-term liabilities in 2010 stood at 32.9%. So, Ghanaian banks having high level of liquidity might be one of the reasons for recording profit in these years of the crisis.

However, Devinaga Rasiah (2010) asserted that the lower returns on liquid assets and excessive fund which has not been invested may also negatively affect the profitability of banks. And because of this, liquidity management serves as an important determinant of commercial bank profitability. It may not be prudent for commercial banks to hold huge amount of an idle funds because it deprive the banks of income and profitability. This is because the more the banks turn funds into loans or invest them the more its accumulate income and profit. This has been confirmed by the study of Eichengreen & Gibson (2001) which documented that the fewer the amount of funds tied up in liquid investment and the liquid assets the higher the profitability. In order to capture liquidity ratio in profitability model Devinaga Rasiah (2010) used loan to deposit ratio (LIQ) as a proxy for liquidity. He did this with the view that data on loans to deposits of commercial banks are normally disclosed in their annual reports and also because the loans to deposit ratio can be calculated.

2.4.4 Bank Size

Both Vong et al (2009) and Devinaga Rasiah (2010) included market share in their studies. According to Devinaga Rasiah (2010) market share could be included in the profitability model as an external determinant because if commercial banks could be able to expand their market share then they may be able to increase their income as well hence profit. This is because the ability to increase market share requires selling more so in the case of banking if commercial banks are able to for example offer more loans to more customers then they stand a greater chance of increasing interest income as well as profits.

According to Karkrah and Ameyaw (2010) market share or size of banks is normally used to capture potential economies or diseconomies of scale in the banking sector. Secondly, the size of banks as a variable control for cost differences and product and risk diversification. They argue that the first factor (economies or diseconomies of scale) is expected to lead to a positive relationship between bank size and profitability if there are significant economies of scale and their argument was based on the empirical evidence of Akhavein, Berger & Humphrey (1997) Bourke (1989), Molyneux & Thornton (1992). This argument also seems to be supported by the investigation of Andreas & Gabrielle (2011) on determinants of bank profitability before and during the financial crisis in Switzerland.

Karkrah and Ameyaw (2010) further presented that the second part which has to do with risk diversification could lead to a negative relationship between bank size and profitability. According to Dietrich, Wanzenried (2011) large banks in Switzerland were less profitable than small and medium-sized bank in these years of the financial crisis. And their main

reasons for this negative relationship between size and profitability was that larger banks in Switzerland had relatively higher loan loss provisions during the crisis and that larger banks were found to have significantly lower net interest margins in times of turmoil than smaller banks. Observation of Sufian et al. (2008) on Philippines banks also shows a negative relationship between bank size and profitability. To these researchers the negative correlation was an indication of smaller banks earning higher profits than larger banks and in support to the earlier studies which observed economies of scale and scope for smaller banks or diseconomies of scale for larger banks.

To capture the effect of market share or bank size on profitability, Devinaga Rasiah (2010) stressed that as both deposits and loans represent commercial banks output, one has to make a choice between deposits and assets to be use as proxy of banks market share. However, he argued that the fact that assets components may also comprise of investment in securities and subsidiaries with which they might be the same across all commercial banks, the choice of deposits for the measurement of market share is considered to be more impartial. This argument is supported by Vong et al (2009) who captured market share/bank size in their study by using the total deposits (in logarithms) as proxy for market share (LOGTA).

2.5 Empirical Review

Glenn and Wayne (2007), carried out a study on the Community Reinvestment Act and the profitability of mortgage-oriented banking, this study sought to determine how Community Reinvestment Act affects profits. They analyzed their data using regression analysis, where they found that there exist a positive relationship between home purchase lending in lower-

income neighbourhoods and profitability, they also found that lenders active in lower-income neighbourhoods and with lower-income borrowers appear to be as profitable as other home purchase lenders. Their study also revealed that there was no compelling evidence of lower profitability at commercial banks that specialize in home purchase lending in lower income neighborhoods or to lower-income borrowers, (Glenn and Wayne, 2007).

Fang (2004), conducted a study on the relationship between home mortgage loan and real estate market in China and their effect on banks financial performance, the study sought to analyze the correlation between the development of real-estate market and home finance and their effect on banks financial performance. The study revealed that although residents' sustainable income, macroeconomic factors are all the reasons for the development of the China's real estate market, but the mortgage cannot be ignored which is also an important factor for rising home prices, and at different times, different regions show different characteristics , (Fang, 2004). In the short term, the function of mortgage is more apparent in promoting house prices. While the real estate market in a region or city getting gradually mature, the effect of mortgage on the house prices tends to be less evident, but it remains an important factor that cannot be ignored. The study further revealed that both real estate financing and mortgage had positive effects on the banks on the banks profitability, (Fang, 2004).

Tsatsaronis and Zhu (2004) point out the importance of mortgage credit on banks financial performance in 17 countries, where they found positive relationship between mortgage credit and banks performance. Their analysis finds that fundamentals relating to mortgage finance, including bank credit and the real interest rate, explain approximately one-third of the long-

run variation in house prices and banks performance. Gerlach and Peng (2005) found a long-run relationship linking house prices, bank credit and GDP in Hong Kong. For house prices and credit in the short run, they conclude that the relationship is one-way; a change in house prices causes changes in bank credit. Collins and Senhadji (2002) find that credit growth has a significant contemporaneous effect on residential property prices in a number of Asian economies.

According to Ndungu (2010) Kenya's mortgage market is growing and the mortgage industry is dominated by commercial banks indicating barriers to entry or high risk for medium and smaller banks. He further stated that the growth rates of small sized banks have been the fastest, with a growth rate of 38% on average, followed by medium banks which are growing at 25% on average with large banks closely following at 24% on average (Ndungu, 2010). Ndirangu (2004), focused on perceived quality of service in commercial banks and effects of mortgage on firm's performance, his study revealed that adopting different types of mortgage positively affect the financial performance of mortgage institutions in Kenya, Ndirangu (2004) further found that the growth rates of banks ranged between 40-50% in 1990 to 70% in 2004. This was linked to mortgage firms' ability to match services to the need of the customers which generated adequate risk-adjusted returns, besides being influenced by the overall growth in the mortgage finance market

Murugu (2003) carried out a study on perceived quality of service in the mortgage sector. In his study it was found that Commercial Banks in Kenya offered quality mortgage products as perceived by the customer. Mutero (2007) did a study on access to housing finance in Africa, exploring the issues, he found that that Kenya has a well-developed and regulated financial

system and, in recent years, the mortgage finance sector has become competitive and innovative, this sector serves only those households at the top of the income pyramid. Mutero (2007) recommends that there is need to assess the effects of mortgage financing on financial performance in commercial banks in Kenya. Nkirote (2004) did a study on environmental challenges and the strategic responses in the mortgage industry in Kenya, his study found that that there was stiff competition in the industry , the study also found that mortgage firms were responsive to environmental challenges by having produced tailored to suit their clients

2.6 Conclusion

From the literature review mortgage credit is important to the performance of banks and it is expected that there should be a positive relationship between mortgage financing and profitability of commercial banks. However, no known local study has been conducted to establish the relationship between mortgage financing and profitability of commercial banks in Kenya, hence the research gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the research design, population of the study, sample size, data sources and data analysis procedure together with the model specification.

3.2 Research Design

The causal study design was employed in this research. Causal research suggests causal linkages between variables by observing existing phenomena and then searching back through available data in order to try to identify plausible causal relationships. It was concerned with determining cause and effect relationship and to understand which variable is dependent and which is independent. This research design was the best in explaining if two variables are related or if they vary. This was established by use of enough information and data for testing cause and effect relationship. It aimed to explore the relationship between mortgage financing and profitability of commercial banks and the empirical evidences that help answer the research objective.

3.3 Population

The population for this study was commercial banks in Kenya (Appendix 1). There are a total of 43 Commercial Banks in Kenya which formed the target population for this study. Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

3.4 Sample Design

The sample of this study was commercial banks that offered mortgage financing between years 2008 to 2012. 30 commercial banks listed on Appendix II offered mortgage financing during our study period and thus they were the sample for this study.

3.5 Data Collection

Secondary data from financial statements of commercial banks offering mortgage financing was collected using data collection forms. The study collected secondary data for the for five years from 2008 to 2012, on the bank profitability and mortgage lending. The data obtained from the bank's financial statements; return on assets, ratio of Mortgage Loan to total assets, ratio of Deposits to total assets, ratio of total Loans to total deposits, ratio of Capital and reserve to total assets and the natural log of total deposits for the banks .

3.6 Data Analysis

Data analysis was done using SPSS Version 20 whereby multiple regression models was employed. To test the impact of mortgage financing on the banks profitability, a logit regression model will be used:

$$Y_{jt} = C + \alpha X_{jt} + \beta Z_t + \epsilon_{jt} \text{----- (1)}$$

j refers to the commercial bank; t refers to year; Y_{jt} is the dependent variable and refers to the return on assets (ROA) of bank j in a particular year t; C is the intercept; X represents the independent variable which is mortgage financing, whereas Z represents the other determinants of commercial bank profitability; α and β are co-efficient and ϵ_{jt} represent the

error term. The significance of the regression model was determined at 95% confidence interval and 5% level of significance.

The empirical model to be used in the study to test the relationship between mortgage financing and profitability is presented as follows:

$$ROA_{jt} = C + \beta_1 MORT_{jt} + \beta_2 DETA_{jt} + \beta_3 LIQ_{jt} + \beta_4 CRTA_{jt} + \beta_5 LOGTA_{jt} + \epsilon_{jt} \text{ ----- (2)}$$

Where:

ROA_{jt} : return on assets for bank j in year t

MORT_{jt} : ratio of Mortgage Loan to total assets for bank j in year t

DETA_{jt} : ratio of Deposits to total assets for bank j in year t

LIQ_{jt} : ratio of total Loans to total deposit for bank j in year t

CRTA_{jt} : ratio of Capital and reserve to total assets for bank j in year t

LOGTA_{jt} : natural log of total deposits for bank j in year t

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPREATION

4.1 Introduction

This chapter presents the data analysis, presentation and interpretation of the study, the study analyzed the relationship between mortgage financing and profitability of commercial banks in Kenya. The study was conducted on 30 commercial banks in Kenya that are offering mortgage financing. Secondary data was collected from the bank financial statements and Central Bank of Kenya. Various ratios were used in the data analysis.

4.2 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 20) to code, enter and compute the measurements of the multiple regressions. The study conducted multiple regression analysis on the relationship between mortgage financing and profitability of commercial banks in Kenya.

Regression Analysis 2008

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.891(a)	.793	.745	.19440

Adjusted R squared is coefficient of determination which tells us the variation in the

dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.745 an indication that there was variation of 74.5% on profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks at 95% confidence interval . This shows that 74.5% changes in profitability of commercial banks in Kenya could be accounted for by mortgage loan, deposits, liquidity, capital and reserve and size of the banks. R is the correlation coefficient which shows the relationship between the study variables. From the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.891.

Table 2: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.232	6	0.372	3.131	.048 ^b
	Residual	7.567	23	0.329		
	Total	9.799	29			

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.017 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value ($1.699 < 3.131$) an indication that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya. The significance value was less than 0.05 an indication that the model was statistically significant.

Table 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	.298	.453		2.165	.006
	Mortgage Loan	.237	.160	.198	1.479	.012
	Deposits	.231	.126	.245	1.834	.001
	Liquidity	.239	.145	.008	.065	.023
	Capital and reserve	.281	.114	.031	.246	.016
	Size of the bank	.011	.006	.245	2.134	.016

From the data in the above table the established regression equation was

$$Y = 0.298 + 0.237 X_1 + 0.231 X_2 + 0.239 X_3 + 0.281 X_4 + 0.011 X_5$$

From the above regression equation it was revealed that holding mortgage loan , deposits , liquidity , capital and reserve and size of the banks to a constant zero , profitability of commercial banks in Kenya would be 0.298 , a unit increase in mortgage loan would lead to increase in profitability of commercial banks in Kenya by a factors of 0.237, unit increase in deposits would lead to increase in profitability of commercial banks in Kenya by factors of 0.231, a unit increase in liquidity of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.239, unit increase in capital and reserve of the banks would lead to increase in profitability of commercial banks in Kenya by a factors of 0.281 and a unit increase in size of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.011.

Regression Analysis 2009

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.927(a)	.859	0.841	.2582

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.841 an indication that there was variation of 84.1% on profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks at 95% confidence interval . This shows that 84.1% changes in profitability of commercial banks in Kenya could be account for by mortgage loan, deposits, liquidity, capital and reserve and size of the banks. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.927.

Table 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.164	6	.194	3.600	.017(a)
	Residual	2.737	23	.119		
	Total	3.901	29			

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.017 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated was greater than the critical value ($1.699 < 3.600$) an indication that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya. The significance value was less than 0.05 an indication that the model was statistically significant.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	.417	.984		1.101	.297
	Mortgage Loan	.695	.441	.029	.093	.927
	Deposits	.737	.537	.334	1.079	.306
	Liquidity	.480	.258	.681	1.247	.218
	Capital and reserve	.196	.695	.065	1.458	.648
	Size of the bank	.125	.666	.138	1.976	.333

From the data in the above table the established regression equation was

$$Y = 0.417 + 0.695 X_1 + 0.737 X_2 + 0.480X_3 + 0.196 X_4 + 0.125 X_5$$

From the above regression equation it was revealed that holding mortgage loan , deposits , liquidity , capital and reserve and size of the banks to a constant zero , profitability of commercial banks in Kenya would be 0.417 , a unit increase in mortgage loan would lead to increase in profitability of commercial banks in Kenya by a factors of 0.695, unit increase in

deposits would lead to increase in profitability of commercial banks in Kenya by factors of 0.737, a unit increase in liquidity of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.480, unit increase in capital and reserve of the banks would lead to increase in profitability of commercial banks in Kenya by a factors of 0.196 and a unit increase in size of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.125.

Regression Analysis of Year 2010

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908(a)	.824	.801	.2372

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.801 an indication that there was variation of 80.1% on profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks at 95% confidence interval . This shows that 80.1% changes in profitability of commercial banks in Kenya could be account for by mortgage loan, deposits, liquidity, capital and reserve and size of the banks. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.908.

Table 8: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.092	6	0.182	4.223	.014(a)
	Residual	4.462	23	0.194		
	Total	5.554				

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.014 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated was greater than the critical value ($1.699 < 4.223$) an indication that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya. The significance value was less than 0.05 an indication that the model was statistically significant.

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	.533	.471		1.146	.887
	Mortgage Loan	.452	.951	.207	.668	.519
	Deposits	.143	.190	.007	.121	.983
	Liquidity	.803	.230	.671	1.783	.080
	Capital and reserve	.230	.730	.433	3.643	.001
	Size of the bank	.114	.398	.222	1.871	.067

From the data in the above table the established regression equation was

$$Y = 0.533 + 0.452 X_1 + 0.143 X_2 + 0.803X_3 + 0.230 X_4 + 0.114 X_5$$

From the above regression equation it was revealed that holding mortgage loan , deposits , liquidity , capital and reserve and size of the banks to a constant zero , profitability of commercial banks in Kenya would be 0.533 , a unit increase in mortgage loan would lead to increase in profitability of commercial banks in Kenya by a factors of 0.452, unit increase in deposits would lead to increase in profitability of commercial banks in Kenya by factors of 0.143, a unit increase in liquidity of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.803, unit increase in capital and reserve of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.230 and a unit increase in size of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.114.

Regression Analysis for Year 2011

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892(a)	.796	.753	.2467

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.753 an indication that there was variation of 75.3% on profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks at 95% confidence interval . This shows that 75.3% changes in profitability of commercial banks in Kenya could be account for by mortgage loan, deposits, liquidity, capital and reserve and size of the banks. R is the

correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.892.

Table 11: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.344	6	.224	2.213	.012(a)
	Residual	5.175	23	.225		
	Total	6.519	29			

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.012 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated was greater than the critical value ($1.699 < 2.213$) an indication that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya. The significance value was less than 0.05 an indication that the model was statistically significant.

Table 12: Coefficients

Mode		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
1		B	Std. Error	Beta		
1	Constant	.408	.341		1.208	.839
	Mortgage Loan	.439	.965	.205	1.653	.529
	Deposits	.592	.771	.027	1.087	.932
	Liquidity	.684	.557		1.452	.152
	Capital and reserve	.438	.023	.047	1.357	.722
	Size of the bank	.161	.545	.158	1.204	.234

From the data in the above table the established regression equation was

$$Y = 0.408 + 0.439X_1 + 0.592 X_2 + 0.684X_3 + 0.438 X_4 + 0.161 X_5$$

From the above regression equation it was revealed that holding mortgage loan , deposits , liquidity , capital and reserve and size of the banks to a constant zero , profitability of commercial banks in Kenya would be 0.408 , a unit increase in mortgage loan would lead to increase in profitability of commercial banks in Kenya by a factors of 0.439, unit increase in deposits would lead to increase in profitability of commercial banks in Kenya by factors of 0.592, a unit increase in liquidity of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.684, unit increase in capital and reserve of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.438 and a unit increase in size of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.161.

Regression Analysis for Year 2012

Table 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.987(a)	.974	.958	.1456

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the above table the value of adjusted R squared was 0.958 an indication that there was variation of 95.8% on profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks at 95% confidence interval . This

shows that 95.8% changes in profitability of commercial banks in Kenya could be account for by mortgage loan, deposits, liquidity, capital and reserve and size of the banks. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.987.

Table 14: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.112	6	.352	4.181	.037(a)
	Residual	3.220	23	.140		
	Total	5.332	29			

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0.037 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated was greater than the critical value ($1.699 < 4.181$) an indication that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya. The significance value was less than 0.05 an indication that the model was statistically significant

Table 15: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	.287	.544		.256	.803
	Mortgage Loan	.270	.415	.194	.601	.561
	Deposits	.115	.986	.049	.152	.882
	Liquidity	.389	.871	.712	2.030	.070
	Capital and reserve	.117	.362	.355	1.429	.183
	Size of the bank	.121	.328	.483	1.942	.081

From the data in the above table the established regression equation was

$$Y = 0.287 + 0.270 X_1 + 0.115 X_2 + 0.389X_3 + 0.117 X_4 + 0.121 X_5$$

From the above regression equation it was revealed that holding mortgage loan , deposits , liquidity , capital and reserve and size of the banks to a constant zero , profitability of commercial banks in Kenya would be 0.287 , a unit increase in mortgage loan would lead to increase in profitability of commercial banks in Kenya by a factors of 0.270, unit increase in deposits would lead to increase in profitability of commercial banks in Kenya by factors of 0.115, a unit increase in liquidity of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.389, unit increase in capital and reserve of the banks would lead to increase in profitability of commercial banks in Kenya by a factors of 0.117 and a unit increase in size of the banks would lead to increase in profitability of commercial banks in Kenya by a factor of 0.121.

4.3 Summary of major findings and interpretation

From the findings on the Adjusted R squared, the study revealed that there was variation of profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks. The study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were the major factors influencing the profitability of commercial banks in Kenya. From the findings on the correlation analysis the study revealed that there was a strong relationship between mortgage loan, deposits, liquidity, capital and reserve and size of the banks and profitability of commercial banks in Kenya.

The study further revealed that the data is ideal for making a conclusion on the influence of mortgage loan, deposits, liquidity, capital and reserve and size of the banks on profitability of commercial banks in Kenya. The study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya.

The established regression analysis for year 2008 was

$$Y = 0.298 + 0.237 X_1 + 0.231 X_2 + 0.239 X_3 + 0.281 X_4 + 0.011 X_5$$

The established regression equation for year 2009 was

$$Y = 0.417 + 0.695 X_1 + 0.737 X_2 + 0.480 X_3 + 0.196 X_4 + 0.125 X_5$$

The established regression equation for year 2010 was

$$Y = 0.533 + 0.452 X_1 + 0.143 X_2 + 0.803 X_3 + 0.230 X_4 + 0.114 X_5$$

The established regression equation for year 2011 was

$$Y = 0.408 + 0.439 X_1 + 0.592 X_2 + 0.684 X_3 + 0.438 X_4 + 0.161 X_5$$

The established regression equation for year 2012 was

$$Y = 0.287 + 0.270 X_1 + 0.115 X_2 + 0.389X_3 + 0.117 X_4 + 0.121 X_5$$

From the findings on the regression equation, the study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks had positive effects on the profitability of commercial banks in Kenya. The findings of the study concur with findings of Glenn and Wayne (2007), found that there exist a positive relationship between home purchase lending in lower-income neighbourhoods and profitability, they also found that lenders active in lower-income neighbourhoods and with lower-income borrowers appear to be as profitable as other home purchase lenders.

Fang (2004), revealed that although residents' sustainable income, macroeconomic factors are all the reasons for the development of the China's real estate market, but the mortgage cannot be ignored which is also an important factor for rising home prices, and at different times, different regions show different characteristics . The study further revealed that both real estate financing and mortgage had positive effects on the banks on the banks profitability, (Fang, 2004).

Tsatsaronis and Zhu (2004) found positive relationship between mortgage credit and banks performance. Their analysis finds that fundamentals relating to mortgage finance, including bank credit and the real interest rate, explain approximately one-third of the long-run variation in house prices and banks performance. Gerlach and Peng (2005) found a long-run relationship linking house prices, bank credit and GDP in Hong Kong. For house prices and credit in the short run, they conclude that the relationship is one-way; a change in house prices causes changes in bank credit. Collins and Senhadji (2002) find that credit growth has

a significant contemporaneous effect on residential property prices in a number of Asian economies. Husni (2011) who found that the determinants commercial banks performance in Jordan disclosed that there is significant positive relationship between ROA and Total liability to total Assets. Sufian. et al (2008) argued that banks in developing countries needs a strong capital structure, because it provides them strength to withstand financial crises and offers depositors a better safety net in times of bankruptcy and distress macroeconomic conditions.

Karkrah and Ameyaw (2010) on profitability determinants of commercial banks in Ghana revealed that the equity ratio which is the measure of the capital strength of the banks posted a positive relation with the banks ROA. They documented that their finding is in line with the findings of Suffian et al (2008) which reveals positive relation between Philippines banks level of capitalization and profitability. The result was also consistent with the finding of Berger (1995), Demirguc-Kunt and Huizinga (2009), Pasiouras and Kosmidou (2007). Bourke (1989) found that there is a positive relationship between banks level of liquidity and profitability. The IMF Country Report 2011 has indicated that Ghanaian banks are more liquid and liquidity with regards to the banks' assets has increased tremendously after the financial crisis. The report estimated that Liquid asset to total assets in 2010 recorded 25.3% and Liquid asset to short-term liabilities in 2010 stood at 32.9%.

Devinaga Rasiah (2010) asserted that the lower returns on liquid assets and excessive fund which has not been invested may also negatively affect the profitability of banks. This has been confirmed by the study of Eichengreen & Gibson (2001) which documented that the fewer the amount of funds tied up in liquid investment and the liquid assets the higher the profitability. In order to capture liquidity ratio in profitability model Devinaga Rasiah (2010)

used loan to deposit ratio (LIQ) as a proxy for liquidity. According to Devinaga Rasiah (2010) market share could be included in the profitability model as an external determinant because if commercial banks could be able to expand their market share then they may be able to increase their income as well hence profit. Karkrah and Ameyaw (2010) argue that the first factor (economies or diseconomies of scale) is expected to lead to a positive relationship between bank size and profitability if there are significant economies of scale and their argument was based on the empirical evidence of Akhavein, Berger & Humphrey (1997) Bourke (1989), Molyneux & Thornton (1992). This argument also seems to be supported by the investigation of Andreas & Gabrielle (2011) on determinants of bank profitability before and during the financial crisis in Switzerland.

Karkrah and Ameyaw (2010) further presented that the second part which has to do with risk diversification could lead to a negative relationship between bank size and profitability.

According to Dietrich, Wanzenried (2011) large banks in Switzerland were less profitable than small and medium-sized bank in these years of the financial crisis. And their main reasons for this negative relationship between size and profitability was that larger banks in Switzerland had relatively higher loan loss provisions during the crisis and that larger banks were found to have significantly lower net interest margins in times of turmoil than smaller banks.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study which was to determine the relationship between mortgage financing and profitability of commercial banks in Kenya.

5.2 Summary of findings

From the findings on the Adjusted R squared , the study revealed that there was variation of profitability of commercial banks in Kenya due to changes in mortgage loan, deposits, liquidity, capital and reserve and size of the banks. The study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were the major factors influencing the profitability of commercial banks in Kenya. From the findings on the correlation analysis the study revealed that there was a strong relationship between mortgage loan, deposits, liquidity, capital and reserve and size of the banks and profitability of commercial banks in Kenya.

The study further revealed that the data is ideal for making a conclusion on the influence of mortgage loan, deposits, liquidity, capital and reserve and size of the banks on profitability of commercial banks in Kenya. The study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks were significantly influencing financial performance of commercial banks in Kenya.

The established regression analysis for year 2008 was

$$Y = 0.298 + 0.237 X_1 + 0.231 X_2 + 0.239 X_3 + 0.281 X_4 + 0.011 X_4$$

The established regression equation for year 2009 was

$$Y = 0.417 + 0.695 X_1 + 0.737 X_2 + 0.480X_3 + 0.196 X_4 + 0.125 X_4$$

The established regression equation for year 2010 was

$$Y = 0.533 + 0.452 X_1 + 0.143 X_2 + 0.803X_3 + 0.230 X_4 + 0.114 X_5$$

The established regression equation for year 2011 was

$$Y = 0.408 + 0.439X_1 + 0.592 X_2 + 0.684X_3 + 0.438 X_4 + 0.161 X_5$$

The established regression equation for year 2012 was

$$Y = 0.287 + 0.270 X_1 + 0.115 X_2 + 0.389X_3 + 0.117 X_4 + 0.121 X_5$$

From the findings on the regression equation, the study revealed that mortgage loan, deposits, liquidity, capital and reserve and size of the banks has a positive effect on the profitability of commercial banks in Kenya.

5.3 Conclusion

From the findings the study revealed that mortgage financing has a positive effect on the profitability of Commercail banks in Kenya . this clearlys shows that mortgagae finnacing was a profitable business for commercail bank in kenya .

The further revealed that banks deposit were positively related to their profitbaility , this an indication that banks deposit positively affects the profitability of ccommercail bank in kenya . Banks are heavily dependent on the funds mainly provided by the public as deposits to finance the loans being offered to the customers. There is a general notion that deposits are the cheapest sources of funds for banks and so to this extent deposits have positive impact on banks profitability if the demand for bank loans is very high.

The study established that capital and reserve of commercial banks in Kenya positively impacted on their profitability. Bank capital and reserves also serve as a source of funds along with deposits and borrowings. Banks capital structure which includes shareholders' funds, reserves and retained profit affect the profitability of commercial banks because of its effect on leverage and risk.

Liquidity of the bank was found to be positively related to the performance of commercial banks in Kenya. Commercial banks in Kenya are required by Central Bank of Kenya to hold a certain level of liquidity assets; this is to ensure that commercial banks always possess enough liquidity in order to be able to deal with bank runs. Commercial banks that are able to accumulate enough cash and have in possession other liquid assets as well as having the ability to raise funds quickly from other sources to be able to meet its payment obligation and other financial commitments on time are more profitable.

Size of the bank was found to be positively related to the profitability of Commercial banks in Kenya , large commercial banks are perceived to have bigger market share , if commercial banks could be able to expand their market share then they may be able to increase their income as well hence profit, the ability to increase market share requires selling more so in the case of banking if commercial banks are able to for example offer more loans to more customers then they stand a greater chance of increasing interest income as well as profits.

5.4 Recommendations

From the findings the study concludes that there is need for commercial banks in Kenya to adopt mortgage financing as it was revealed that mortgage financing positively impacts on

profitability of commercial banks, mortgage financing is considered as new line of income for commercial banks which will increase their income.

There is need for commercial banks in Kenya to finance their assets by either capital or debt, a strong capital structure provides them strength to withstand financial crises and offers depositors a better safety net in times of bankruptcy and distress macroeconomic conditions.

There is need for commercial banks in Kenya to increase their deposit as it was revealed that Banks are heavily dependent on the funds mainly provided by the public as deposits to finance the loans being offered to the customers.

The study recommends that there is need for commercial banks to increase their size as it was revealed that size of the bank positively impacts on the profitability of Commercial banks in Kenya, increasing their market share mean that they will increase their income as well hence profit.

Liquidity of the bank was found to be positively related to the performance of commercial banks in Kenya. There is need for commercial banks to hold a certain level of liquidity assets; this is to ensure that commercial banks always possess enough liquidity in order to be able to deal with bank runs.

5.5 Limitations of the Study

In attaining its objective the study was limited to 30 commercial banks that have been offering mortgage financing in Kenya.

Secondary data was collected from the commercial banks financial reports. The study was also limited to the degree of precision of the data obtained from the secondary source. While

the data was verifiable since it came from the Central Bank of Kenya and Commercial Banks financial reports, it nonetheless could still be prone to these shortcomings.

The study was limited to determining the relationship between mortgage financing and profitability of commercial banks in Kenya. For this reason the commercial banks that were not offering mortgage financing could not be incorporated in the study.

The study was based on a five year study period from the year 2008 to 2012. A longer duration of the study will have captured periods of various economic significances such as booms and recessions. This may have probably given a longer time focus hence given a broader dimension to the problem.

5.6 Areas For Further Research

The study sought to determine the relationship between mortgage financing and profitability of commercial banks in Kenya. An in-depth study should be carried out on factors influencing adoption of mortgage financing by commercial banks in Kenya.

A study on the effects of mortgage financing on competitiveness of commercial banks in Kenya to find out whether it gives commercial banks a competitive advantage

A study comparing profitability of banks offering mortgage financing and those not offering mortgage financing should be carried out to find out whether those offering mortgage financing are more profitable.

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Appendix I: List of Commercial Banks in Kenya

African Banking corporation limited
Bank of Africa limited
Bank of Baroda(k) limited
Bank of India
Barclays Bank
Chase Bank
Citibank N. A. kenya
Charterhouse Bank Limited
Commercial Bank of Africa
Consolidated Bank of Kenya
Cooperative Bank of Kenya
Credit Bank
Development Bank of Kenya
Diamond Trust
Dubai Bank
Ecobank
Equatorial Commercial Bank
Equity Bank
Family Bank
Fidelity Commercial Bank
Fina Bank
First Community Bank
Giro Commercial Bank
Guardian Bank.
Gulf African Bank
Habib bank A G Zurich
Habib Bank Limited
Imperial Bank Limited
Investment and Mortgage Bank Limited
Jamii Bora Bank Limited
Kenya Commercial Bank Limited
K-REP Bank
Middle East Bank (k) Limited
National bank of kenya Limited
NIC Bank limited
Oriental Commercial Bank
Paramount Universal Bank Limited
Prime Bank Limited
Standard Chartered Bank(k) Limited
Transnational Bank Limited
UBA Kenya Bank Limited
Victoria Commercial Bank

Appendix II: Sample of Commercial Banks

1. African Banking Corporation Limited
2. Bank of Africa limited
3. Bank of Baroda
4. Bank of India
5. Barclays Bank
6. CFC Stanbic Bank
7. Chase Bank
8. Commercial Bank of Africa
9. Credit Bank
10. Development Bank
11. Diamond Trust
12. EcoBank
13. Equity Bank
14. Family Bank
15. Fidelity Commercial Bank
16. Giro Bank
17. Guardian Bank
18. Habib Bank Limited
19. Imperial Bank Limited
20. Investment and Mortgage Bank Limited
21. Kenya Commercial Bank Limited
22. Middle East Bank (k) Limited
23. National bank of kenya Limited
24. NIC Bank limited
25. Oriental Commercial Bank
26. Paramount Bank
27. Prime Bank
28. Standard Chartered Bank(k) Limited
29. Trans-National Bank
30. Victoria Commercial Bank

(Source: Central Bank of Kenya , 2013)